4th ISUFitaly International Conference | Bari, 26-28 september 2018

READING BUILT SPACES

Cities in the making and future urban form

edited by
Paolo Carlotti
Loredana Ficarelli
Matteo Ieva

Politecnico di Bari

ISUFitaly
International Seminar on Urban Form
Italian Network

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Presentation

The city is an "organism in the making", an entity in constant transformation, not a complex of immutable elements. The city represents the entire human experiential field of the world, considered as expression of a "fundamental movement of existence" in its completeness and historicity, expressed by the formative structure of tissues and building types, by the urban hierarchies, by the relations with the territory, by the social relations, and by the values and criticalities.
The conference's aim is to propose a dialectical comparison between scholars of Architecture, Urban Planning, Urban History, Restoration, Geography, on the theme of urban morphology with an interpretative perspective based on the concept of "operating history". Search for a multidisciplinary syncretism that eludes single analyzing techniques and aims to the complete reconstruction of the urban phenomenology in its totality and concrete essence, through the study of the changing and inflexible condition of 'fluidity' hinged on the world's events. An integrated thought based on the critical concept of 'making' that constitutes, phase by phase, the signifying element of each present, explained through the relationship between the before and the after: that is the research perspective of 'being' that announces the notion of transformational process.
Therefore, the projection in the future of the urban form is the central theme of the conference that proposes to stimulate the reflection on the issues as: recovery (not only of the historical city), re-use of existing urban spaces, regeneration, ex novo design in peripheral and peri-urban areas and natural spaces. All that, without neglecting the issue of sustainability, not considered with the strabismus of those who surrender to the "technique" pre-domain.

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Conference Themes

T_Theory

A.1 In the making structural or timeless paradigm?
B.1 Urban form between architecture and landscape
C.1 Urban form between identity and spatial semantics
D.1 Contemporary urban spaces between form and process
G.1 Urban form theories

R_Reading

A.2 Form and structure of the historical city I
B.2 Form and structure of the historical city II
C.2 Form and structure of the historical city III
D.2 Form and structure of the historical city IV
E.1 Urban morphology and settlement process I
E.2 Urban morphology and settlement process II
F.1 Urban morphology and settlement process III
F.2 Urban morphology and settlement process IV
G.2 Relation between periphery and natural space
H.2 Structure of the informal city

D_Design

A.3 Today's city and future shape I
B.3 Today's city and future shape II
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F.3 The urban project between city and nature I
G.3 The urban project between city and nature II
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Ita_Lettura e Progetto

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E.3 Urban restoration and post-trauma re-construction between conservation and innovation II

ABOUT ISUFITALY

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Welcome to the fourth Isufitaly conference.

Let me say, first of all, how happy and glad I am this conference is hosted in Bari. This city has a special meaning for us. It is not one of the "historic" places in which the Italian morphological school was founded, as Venice, Rome or Florence, but Bari became in time one of the most significant place of our Urban Morphology studies. Here, twenty-five years ago (a quarter of century!), a small group of researches and teachers created a core of serious morphological studies, which much developed as years went by.

I believe that today this core has become an heritage for the Bari Architecture School and the whole Polytechnic. I am proud to have contributed to this effort. One of the goal of Isufitaly conferences, is just to support and encourage relevant activities in the field of Urban Morphology such as those taking place in this School.

The other goal of our association is to communicate the specificities of our research. Most of us are architects, so one of the specific features of our studies is the link between reading and project, the relations between analysis of the built reality and the architectural design. This is one of the main aspects which differentiates our research form other Isuf investigations as the one made by geographers (one of the Isuf main interest is just the difference and complementarity between disciplines).

To give you an idea of the specificities of our research and studies, in opening this conference, I would like to briefly present you some of our activities in the form of a short history of our association.

The problem of forming ISUF local networks was posed in the Newcastle conference in 2004. In 2006 the topic was discussed in Stockholm from a practical point of view: how to found local parties? What should be their purpose? What their activities?

There was an approval in principle, but also some warnings were raised about the proposal as the formation of new local association could bring to a kind of "fragmentation" of ISUF as international association. I must say that we have always kept in mind this important warning and we have always considered our activities, our meetings and conferences, as coordinated and complementary to the main Isuf activity.

Two months later the Newcastle conference, in a meeting in Artimino, we began to propose the first of the ISUF local associations, which was called at that time Isuf Italia and, one month later we met in Florence to create the Italian network.

Isuf Italia was a really small group of researchers and professors in architectural design mostly interested in the city forming process and building types. We proposed a constitution which is, in general, the actual one. It is reported that the main goal of our association is to promote and develop the study of urban morphology in Italy, to encourage research, collaborate with local authorities and provide contacts between members through organizing conferences, meetings, also developing links with other networks.

The year after, on 2007, we organized in the "Casa dell'Architettura" (House of Architecture) in Rome a conference devoted to the foundation of Isufitaly.

The conference was organized in two days. The first one was devoted to one of the most discussed problem about housing in Rome, the Corviale intervention. It is a huge public housing building one kilometer long, built on the wave of modern architecture ideology,

a kind of new *Unitè d'habitation* brought to the extreme. The gigantic construction had become a problem. It was the testimony of a generous effort to design something progressive and different from the general mass housing produced in the seventies, but it also was a social problem as the inhabitant didn't want to live inside its complex, unusual and conflictual space. It was a very interesting topic to discuss as it proposed different theorical point of view, involving the modern movement heritage and its meaning today for the European cities.

I think it was a good choice to communicate the concreteness of our field of studies. The day after we started the foundation of Isuftaly, discussing with a small group of researchers, professors and professionals the goals and structure of the new association.

All the report from the meetings we had in the following years underlined the fact that Isufitaly was a free association still without a formal stature. Then we decided to have a legal frame for our activities and a nonprofit association was formed.

We also began to think about the ambitious project to host an international Isuf conference in Rome in 2015. But before the event we organized, as advised by Isuf instructions, a small conference, a kind of test before the main one. It was devoted to the relationship between urban morphological studies and design which is, as I said, the "core business" of our association.

The main conference had as title *City as Organism*. Of course it was a provocative title. All of us are fully aware that our cities are not organic, but organizers were also convinced that the notion of organicity is not just a way to read the city. It is also a goal. We read the city as an organism with the goal to build a more organic city. The conference was quite successful and produced also a two books, 700 pages monumental proceedings.

On the strength of the experience made, in February 2017, we organized the third Italian Isuf conference, *Learning from Rome*. The title indicates the organizing group own ideas about design: the designer goal is to read "urban rules" inside the city and try to continue them to produce contemporary architecture, never imitating the past but at the same knowing that we are "continuing" the existing city. As architects we are expected, it is our opinion, to continue a process, and the goal of the conference was to discuss this idea.

Just to debate our proposal in a narrower setting, we then have meetings held in Artimino, in a XVII century Medicean villa. Artimino meetings used to be for many years traditional Muratorian school seminars but recently were invited to participate also colleagues from other association. Last year also many Spanish friends and researchers urban morphology participated.

The research work of Isufitaly members is mostly developed inside University Institution, habitually PhD school and departmental laboratories.

We have in Rome a research laboratory called, not by chance, "Architecture Reading and Design".

Within university facilities we organize series of lectures devoted to relations between Urban Morphology and design in their different aspects. A series of conferences (Francesco Rispoli, Carlo Manzo, Giancarlo Cataldi, Franco Purini, etc.) were for example held on the topic of the scientific core of architectural design disciplines, a very relevant matter for us. The scientific nature of the project is indeed far from obvious, many architects retaining architecture just an artistic activity based on tools as perception. It was a good theme to discuss, useful to pose the question of the morphological analysis as alternative or integration to architecture intended just as expression of the author's personality.

We organized also series of lectures about some of the main topic of our morphology research. One of these concerned the relationship between matter and material (the first phase of transformation of the nature in architecture) which is one of the investigation recurring themes in the Muratorian school. This is also a research project carried on by some of our PhD students, about the plastic character of the Mediterranean architecture. We believed that the deep spirit of the Mediterranean building types is plastic, a character abandoned in times which only the light and transparent architecture is considered true contemporary. One of the most active Isufitaly member, Antonio Camporeale, organized a series of interesting lectures (Fernando Menis, Antonio Ramos, Vicente Mas,

Sol Madridejos) about the topic with the contribution of architects not exactly researchers in Morphology but whose studies are very important for the topic.

This strong link with the problems of construction of our researches have a long tradition in Italian schools of Urban Morphology ad Typology. Following the thinking of Saverio Muratori, we believe that our work is useful if it is an operating work.

The term "operating" is central to us. Even history has to be regarded as operating. History we study is useful for action. To study the city of the past and its transformations has the goal to transform the actual city.

From this point of view the relationship between design and history is vital, a legacy cultivated not only by Muratorian scholars, but by all the Italian schools of Morphology.

In this spirit we organized some lectures and meetings to discuss the transformation of Rome made also by modern and contemporary architects. Public housing quarters built in the city outskirts in the seventies and eighties are often exemplary from this point of view. They were habitually designed by well-known Roman architects, who made great efforts to produce innovative settlements, as opposed to the characters of the surrounding city belt. They are exemplary case studies of a pioneering intervention whose problems consist precisely in the fact of not being related to the territory forming process, providing a valuable lesson for future interventions.

In the same spirit, one of this specificities of Isufitaly is the care about the relationship between contemporary architecture and cultural heritage. This is indeed a specificity of the whole Italian school of Architecture, not only of Morphology, also due to the custom of operating in historic centers.

We believe that we have to design contemporary architecture inside the historic fabric: if the city is an organism, as a living matter necessarily it need to be wisely transformed to prevent it from dying. To intervene in this built matter, however, we must know and continue its forming process. we have to know its transformation rules. For this reason we dedicate a relevant part of our activities to interpreting historic built landscape and have produced a considerable amount of essays about the topic (by Paolo Carlotti, Matteo Ieva, Marco Maretto, Annalinda Neglia, Nicola Scardigno, Anna Rita Amato and others). The result, we believe, is not only of local value: we invited foreign researchers to report about their experience and we have often founded unsuspected affinities with the fabric transformation problems in other countries.

Our interest in the small part of the contemporary history that interprets modern architecture as a process is also obvious. We believe that notion such organism and process can lead to innovative interpretations even of very well-known and highly investigated architects, as Louis Khan.

We discovered interesting link between the Khan heritage and the Roman architecture: not what Khan has taken from ancient Rome, a matter very investigated and discussed, but what roman modern architects has taken from Khan, showing similarities due to affinities in their formation.

We also organized lectures by architects who, even if don't share our method, we consider close to our research interests as Renato Capozzi, Giancarlo Cataldi, Carlos Dias Coelho, Ignacio Mendaro Corsini, Riccardo Dalla Negra, Luis de Armino, Wowo Ding, Pierre Larochelle, Alexander Schwarz, Hans Kollhoff, Carlo Moccia, Uwe Schröder, Federica Visconti, Vitor Oliveira and many others.

We try to report our researches and designing experience, of course, in teaching, also organizing workshops (often abroad), giving courses in different faculties, and trying to prove the utility of the studies of morphology for design didactics. During a semester of teaching in Quebec, by the way, I realized that the course in Urban Morphology was called "Muratorian urban morphology". It was a pleasant surprise to understand that a tradition quite abandoned in our faculties was so deeply developed abroad.

As for dissemination of information, we produce a magazine (*U+D urbanform and design*) which we consider a good tool to communicate our researches and to make a comparison with other investigations. Originally on line, it is now edited by L'Erma, a well-established international publisher.

Another communication tool is a series of books, *Lettura e Progetto* (reading and

Design) published by Franco Angeli. The first of the series was "L'analisi della forma urbana" Italian edition of the well-known Conzen's study about Alnwick. Last books published are "Observations of urban growth" (edited by myself), "Architettura come lingua. Processo e progetto" by Matteo Ieva, "London Squares" by Marco Maretto, "Landscape as forma mentis" by Nicola Scardigno, while a book by Giancarlo Salamone on the formation of Viale Trastevere in Rome interpreted as a restructuring route is being published.

Of course, we organize and conducts also Urban Morphology researches inside our faculties and PhD school, someone inside ISUF itself and with ISUF members. This is one which we are carrying on in these months on the subject "Urban Morphology and urban design: cases from Nanjing, China and Rome, Italy" comparing old and new urban fabric specificities of the two cities.

The method of investigating fabric and urban organism is also the object of EPUM, a European financed research about emerging perspectives on urban morphology, researching and learning through multiple practices. We have just organized, in this frame, a workshop in Porto intended to compare our researching method, based on processual investigation on built reality, with other methods like space syntax and relational methodology.

To conclude: why I made this list of activities of our association? Certainly to give an idea, even if very partial, of what we do. This list is indeed also addressed to the younger researchers. We have, as group of researchers on urban morphology, some historical problems, starting with the isolated work of Saverio Muratori in the sixties and seventies, till to some nowadays difficulties to introduce Urban Morphology courses inside our faculties programs.

So, especially some young friends, sometimes feel lost inside structures in which the fashion of spectacular architecture, often the void of any rational bases, is commonly accepted and cultivated.

For this reason, I believe that collecting and presenting our experiences in our conferences can give them the conscience to take part of a lively, motivated and productive research group.

Conference like this also demonstrate that we have many road mates, some of them present here, often don't sharing our methods of investigating but sharing values and choices.

I think we can be proud of the work done, including the perfect organization of this conference.

For this reason, I thank very much the chairs this conference Paolo Carlotti, Loredana Ficarelli, Matteo Ieva and all the other ISUF members who collaborated to organize this event. And I wish to all of you a successful conference.

Cities in the making and future urban form

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As organizer of the 4th Isufitaly conference held in Bari I would like to provide some clarification concerning themes of this event.

The title: "Reading built spaces. Cities in the making and future urban form".

First of all, let me say why it is important to face up on the theme of the reading in a conference that deals mainly with urban morphology.

Essentially, I believe that the world of architecture cannot be considered in an abstract way, as something that is given, something *a priori* owned, perceived and lived in a spontaneous and intuitive way by each of us.

To make sure that our world can communicate to us a possible truth, it must satisfy answers to questions that are put in common form, in an intersubjective way, if not even through the universal subjectivity of which Hegel speaks.

For this reason, I think, it is necessary to look at it with the lens of objectivity in order to extract from its way of being, the essence of its becoming reality that reaches us through its concrete evidence. In other words I believe our world is the expression of a collective doing that cannot be merely the prerogative of the individual who tries to interpret it. It is the immanence of the civil work it is the tangible sign of the action of more beings who produced it by sharing it. And so you can read as long as you use instruments based on criteria derived directly from the real.

Based on that, we deal with the built reality through an interest in understanding its phenomenal and evolutionary dynamics, in order to establish what strategies to adopt in view of its necessary transformation. Understanding its essence, through temporal reconstruction, also means grasping the potential expectations of necessary mutation.

The present is such only if we are able to grasp the past and project ourselves into the future!

From this point of view, reading is looking for relationships. Relationship between the interpreting subject and the interpreted object, provided that, the conditions for establishing a possible interaction condition exist. The object is given in its constructed evidence, but it is a synthesis of processes and its visible aspect shows only partly the labor of its being that establishes a relationship with the result of its becoming.

For this reason, I think it is important to establish interpretative criteria that derive - and are founded - directly on the truths of reality. All this implies that, in this relationship, our subjectivity must absolutely objectify itself.

This reflection leads us to consider also the importance of the comparison between the different methods of reading and interpretation, because only the interaction can favor the organic synthesis of the same.

The subtitle of the Conference (Cities in the making and future urban form) then draws attention to another aspect that lives in the field of speculative issues of the planner's work: the future of the city together with its future transformation, that is to the project.

Talking about in the making means to look at the urban 'being' with the critical interest of understanding the double polarity, typical of its becoming material and immaterial truth suspended between 'the being' and 'the nothing'. Every moment of transformation, as it is, exists and belongs to 'the being', but at the same time when it appears, it is superseded by the next one and, therefore, enters into 'the nothing', with a constant overcoming. However not always oriented to a form of progress.

The city constantly lives of this contradictory and inseparable binomial. But this is

also the reason for its continuous renewal and its being an ever-changing organism. I said organism, not a whole or sum of parts that means separation and distinction of components that could paradoxically result in a temporal and structural conflict.

Therefore, looking at the city as an organism allows us to understand how each part, although originally deferred in time, ends up adapting itself diachronically, sometimes with great difficulty, to the changed concepts (of home, of special building, of fabric, of city).

Historically, the urban organism has always sought a form of updating and rebirth. Every city, independently of the initial phase, temporally remote or recent, it must be considered today an urban organism of the XXI century.

Therefore, every part of the urban organism, even if it is deferred over time, is a city, a fabric, a contemporary building type. Evidently with different degrees of criticality. But its strength the power that makes each of them always current is to be found in that mysterious mechanism that leads to the urban being, and simultaneously to man in the well-known subject-object relationship, an extraordinary capacity for adaptation and synthesis.

After all, this constructed man-built environment structural system expresses the typical condition of mutual adaptation that Deleuze calls "in the making in the middle". That is, both establish a meeting point a mediation which changes the way of being of each, which makes them skilled and projects them into a new dimension in which the city is no longer just itself with its structural constraints, and man changes his system of life de-territorializing a little, because it is in his nature.

But if this is true, a question immediately arises regarding the condition of crisis that man expresses in this historical phase, a civil crisis which pervades all fields and, of course, also our work.

How can we imagine the future shape of our cities, also in view of the rapid changes that are producing a sudden and uncontrolled, obsolescence?

It is no coincidence that categories aimed to recognize themes to which concrete answers must be given, are recognized. Some of these categories are: fragmentation, recycle, "not-space" semantics, junk space as suggested by Rem Koolhaas which highlights the ungovernable forces that regulate today's city.

These are issues on which serious debate is needed, because these are the problems that make us the beginning of the 21st century. This is a criticality that is valid to the current building and to the historic city.

At the end of the conference, we believe that there was a discussion animated by a necessary critical component, but it is difficult to propose a balance sheet of the proposed themes because the set of contributions included here covers very different themes, mostly concerning issues of contemporaneity.

It is difficult to provide a critical balance of the proposed themes, this because all contributions, which we will soon gather in the proceedings, ranges over very different topics, mostly concentrated on issues of contemporary issues.

I find interesting the way in which all the participants, in relation to the Conference's themes, have proposed the theme of urban morphology read in its historical and procedural development.

I believe it is important to open the study of the city to different methods … because I am convinced that, if viewed in the perspective of the complementarity it is possible to establish a form of integration between themselves.

Today it is essential to relate to the others methods by seeking a sort of speculative alliance because there is nothing objectively stable in the reality. So we need to propose a transvaluation mechanics, with which we try to reverse the sense of irreconcilable concepts that alter the meaning of things. Aspect present in many process of investigation of the built reality.

As G. Deleuze says, man, and therefore the scholar, due to the condition of crisis, must affirm himself by dialectically contrasting himself to his own opposite. The own individuality is accomplished only at the end of this contrast.

It is essentially the nature of the scholar to constantly experience the conflict of the simultaneous alternation of active forces as self-affirmation, and of reactive forces as a secondary and non-decisive moment.

For this reason too the relationship between the different methods and points of view becomes a condition which see all of us involved with a sense of ethicality.

Let's see together the proposed themes. The interesting datum that emerges from the observation of the contents of the papers proposed in the theory, reading and project sessions, is both the variety of geographical places that pose different questions, and the points of view that show a certain interest in understanding the problems in a diversified way.

Together with the interpretative reading of urban space with a structure of thought and structuralist method, undoubtedly objective, we can see the interest in reading the morphological data through a different system … less related to the historical and more representative of the identification of analogies or formal differences. Recognition of the morphological paradigm derived from the synthesis that each author proposes as a possible truth of the constructed model. To these methods is added the interest to look at the urban phenomenology through the analytical procedures of the planners and, although differently, of the geographers and the attention to investigate the transformations through a socio-economic investigation, undoubtedly necessary to understand the transformative phenomena of contemporaneity.

About the design hypotheses, different currents of thought have been represented. However, I think I can say that, beyond some somewhat eccentric proposals, there is almost always an interest not to neglect the mechanics of in the making as a significant emblem of historical data, expression of an idea of continuous transformation within which to enter, albeit in ways that differ according to the critical cogito of each author and his belonging to a school of thought.

It is also interesting to note the different theory that animates the Schools of Architecture in Europe, with regard to the morphological problem. A greater orthodoxy towards the themes of "history as a structure" that induces a framework to the principles of interpretation and, consequently, to those proposing principles of the in the making, which propose schools such as Italian, Iberian, Central European, North African, to which is opposed the clearest vision, close to contemporary vocations, of other countries. Primarily in the Middle East where, however, there are realities that draw from the European world thanks to the contacts of some scholars who use to live the International Seminar on Urban Form experience from some time.

All this provides a glimpse of the trends underway in this historical phase that is shown to be characterized by a civil crisis that involve the architecture world, as several times emerged in this conference, especially in the considerations of G. Strappa, N. Marzot, R. Rizzi, I. Samuels.

However, it will be possible to draw conclusions only at the end of the publication of the proceedings.

Many ideas have been provided in the plenary sessions starting with the one of the prof. R. Rizzi, with his report "Monotheism of unshaping: doing without creating"; in the session coordinated by Prof. W. DING in which different methodologies for teaching urban morphology have been, by: L. A. de Armiño Pérez, Carlos Dias Coelho, M. Maretto, N. Marzot, G. Strappa; to the interesting lecture of prof. M. Noghsanmohammadi who dealt with the theme of the transformation of the city of Yazd in Iran.

The plenary session that saw the prof. C. Moccia and the prof. G. Malacarne, belonging to the Aldo Rossi School and of the so-called '*tendenza*', with a personal and effective project research, on the complex theme of "City ideas for our time".

And also, in the session "the future city" where the prof. U. Schroeder and the prof. I. Samuels showed the personal theoretical with professional and educational design proposals. Projects in Germany and Belgium and educational reflections concerning the need to consider the potential interaction between different approaches on urban morphology.

The professor C. Quintelli and the prof. J. Muntanola I Thornberg, in the session "The city in progress", which exposed the personal point of view of the complex mechanics of in the making, through philosophical speculations. Absolutely necessary to the world of architecture, especially in this historical phase, as highlighted by prof. R. Rizzi.

Finally, the round table on the current theme "Reading and Designing the European city" in which G. Strappa, C. Moccia, U. Schroeder, N. Marzot, J. Muntanola I Thornberg,

R. Rizzi discussed intensively and dialectically, proposing each one its own critical vision of the relationship between reading and design.

Why all these plenary sessions? Because I believe that the conferences must open a different perspective of discussion, overcoming the condition in which each speaker proposes only his own study, and the synthesis can only come with the publication of the contributions.

The presence of authoritative scholars, such as those hosted on this occasion, which provide food for thought that go beyond the personal experience of each author and overcome the limited condition of the exchange between scholars of a single session, can become a source of cultural wealth for everyone, especially if we are able to open up to the speculative alliance mentioned above, which allows each of us to establish himself by contrasting dialectically with the opposite.

For this reason, we have ordered the registration of these sessions and debates they will be hosted as an attachment, coming soon, to the proceedings of the conference.

“To go to future” of the town form as topic.

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As in the International Conference held **in** Roma in 2017, during the isufitaly meeting, when we wanted to suggest the provocative title “learning from Urban Fabric”, which learn from a complex cityform like Rome - *precisely for its continuous and uninterrupted becoming, paraphrasing Robert Venturi who proposed to learn from a city like Las Vegas, so as from any other important historical city of art* - so in the International Conference of Bari held in 2018, moving the target on the larger Urban and Architectural project , we proposed a comparation asking us what elements be useful observing the dynamic evolutionary dimension of the city, and what we can learn from this lesson to use in new urban project and architectural design, but above all, what we can learn from so layered cityform and with such a slow dynamical transformation.

The city and its dense buildings network must to be usefully projected to the future. One of the first rules of conservation design, now widely shared, is the need to use in continuity, because a not used building is destined to be forgotten and to degrade. The 2017’s conference has been the startpoint of a larger reflection proposed in 2018’s Bari conference, which, remaining on the same subject, it wanted to devote larger space to the purposeful theme of the urban project and architectural design.

A question arises: what can be learned from the past town-shape that can be operating usefull to contemporary architectural design and to the glocal city? What are the valid rules to consider in order to continue into future the town?

New isufitaly conference of 2018 wants to try to up a new step; involving the various components of the project in the question of “go to future”: directing all the component of project towards the same target, an architectural and urban composition characterized by a contemporary expressive language that combines what is inherited with what is expected, tradition with innovation, the tectonics component with its representative form, more or less intentionally expressed and formalized by a synthetic, tactical and strategic architectural fact at the same time.

The idea “to go to future” ahead contains the concept of operating memory, something that comes about in continuity with an almost spontaneous and internal system of rules and conventions within a process in continuous transformation.

The continual and experimental comparison carried out in recent years in between urban morphology and disciplines such as Design Studio, restoration and technology is therefore placed on an asymptotic line that sees the spirit of tradition and contemporary experimental research to converge.

“To go to future” of the city shape and its architectures, it mean add precious element at mosaical draw of the town composed of axis and knots, arouses and proposes forms derived from others, which together constitute that systemic network that already C.O. Sauer in 1925 intuited of the city. A whole result of a kaleidoscopic composition, sometimes the result of successful mediations but other times the unpleasant outcome of serial paratactic juxtapositions that not been able to arised hemselves over time as an organized synthesis.

The future of the city and the urban landscape therefore remains an open question and that the Isufitaly International conference of 2018 wants to try to decline by summoning researchers and architectural and urban project operators, at least to try

to define the sharing points and the experimental areas of the project. It hopes to open a gap in between the studies on form and meaning of urban representation, provoking participants on the question of how and how much to intervene. Years ago architect Renzo Piano launched the idea of re-weaving the urban tissue of the informal suburbs or sometimes designed, with serial character, often disorganized and resulting of self-referential choices that over time have shown all their limits. An idea, in my opinion, that needs to be taken up again reflecting on the town form as architects had done up to 900, where every addition, both performed on the urban scale or produced on the architectural scale, had to deal with the rules, the urban knots (plaza, crossroad), the urban axis and/or pre-existing buildings, that before time one had hunderstood how much and how it should be added to the inherited urban contest, modifying, specializing or re-establishing what had been received from the past, to regenerate and to relate to the needs of the place and the moment, as a new useful element to trigger other and perhaps more incisive further renovations.

Too often the contemporary project, even when animated by the best intents, is splitted and limited in strategies, which should instead constitute the fundamental premise and the fruitful matrix that we can be found in many masterpieces of the past. "To go to future" it is one of the most important challenges of contemporary culture, which in this new chance of discussion, we wanted to offer to the research and to the project, to ask ourselves what could be the way to go, within our discipline, and what meanings are still significant in the regenerative draw of the inherited form?

Ancient city, urban form: EXPERIMENTAL MODEL FOR URBAN REGENERATION OF THE BARI *LUNGOMARE SUD*

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The city
You said: "For other lands I will go, for another sea.
Another city, more lovable than this, where all my efforts are doomed to failure,
where my heart is buried like a dead, there will also be.
How long will I suffer from this inertia?
Of the long years, if I look around, of my life consumed here,
I see only black rubble and loneliness and ruin ".
You will not find another place, you will not find another sea. The city will come after you.
You will go wandering the same streets. You will age in the same neighborhood.
You will whitewash in these same houses. You will always head to this city.
Elsewhere, don't hope, there is no ship, there is no way for you.
Because by wasting your life in this discreet corner you have wasted it all over the earth.
Costantino Kavafis
(from Poiémata, 1935

Every city is a story. Bari is an intrigue whose discreet essentiality is at risk.

The city of Bari, in its current shape, presents itself as an extraordinary "concentrate" of themes, all absolutely "central" for the configuration of the contemporary project.

Bari, geographically located in the Mediterranean, represents a crucial node of the European networks in their extension to the East, a place destined, also historically, for the meeting between East and West.

It is a complex city, made up of several legible and autonomous parts: the ancient village, the Murattian village, the modern part of the 1930', expansion beyond the railway and, finally, spontaneous and informal expansion.

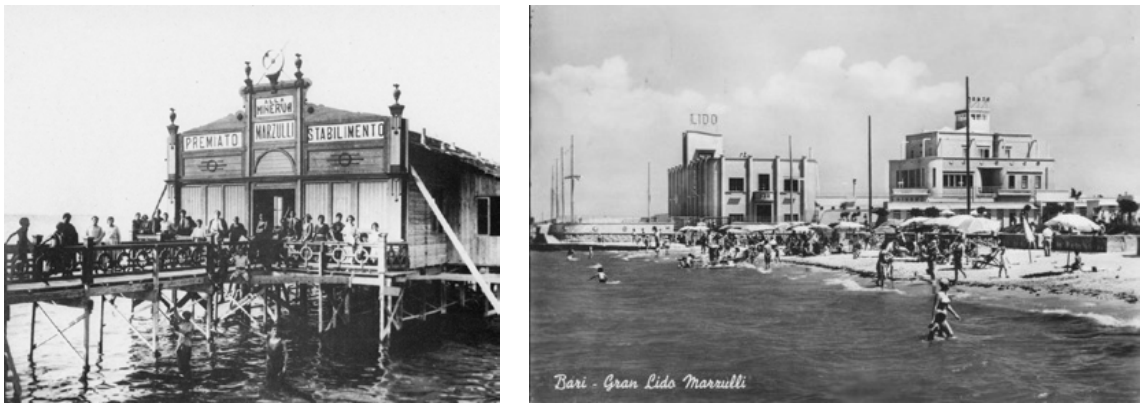
All cities are different from each other, some are made up of different parts, in metric and spatial relationship to each other, parts of cities and parts of territory. Different cities, different parts of cities and territories, different entities, formally independent and autonomous, but which have deep relationships of necessity. Bari linear city lying on the Adriatic Sea, an intervention field of architecture and urban planning. "The city and the territory are constituted by defined facts: a house, a bridge, a road, a forest. The combination of these facts constitutes the city and the territory, and there is the design of these facts, the integrated design of a series of these facts".[1]

This character of a city made up of parts is today undergoing a radical change. New aesthetic models and new cultural conceptions impose a rethinking that assumes the oppositions generated by the relationship between the different parts. Shaping, building forms, to provide solutions that respond to the questions posed by the contemporary city, trying once again to give meaning precisely to those contradictions that promote it.

All this implies the reorganization of its urban landscape, in terms of recovery of "beauty", starting from a clear relationship, often denied, with its coast and with the sea.

Contemporary urbanization techniques do not recognize the centrality of these themes nor do they assume potential that derives from the physical form of our territories. Urban sprawl

Figure 1. Stabilimenti balneari, lungomare Sud.



is indifferent to the topological characters expressed by the earth forms: the widespread city ignores the formal value of size, finiteness and interval. The goal is to overcome the reductive "ecological" approach to the theme of urban voids, to give the forms of nature, and those of construction, a foundational value in the name of a renewed paradigm of urban form.

New phenomena, new paradigms, urban and territorial, which lead to consider a reflection on the analysis and theory of urban facts as a theme that addresses the meaning of the future city even without nostalgic re-enactments but that interprets historical phenomena, and which is capable of to face transformation interventions, putting the absolute value of the architectural project at the center. This objective was at the center of study days organized by *Confindustria Bari*, where the research team of the Polytechnic of Bari, following extensive studies, contributed to the definition of the new settlement model, for the area called "*lungomare sud*", based first on the renewed relationship between architecture and city, an architecture that corresponds to a precise "idea of the city", of which it can only be the representation.

The experimental model relies on a design practice based on a controllable, repeatable, describable rational process. A precise choice among many possible, a condition of rules that gives meaning back to values such as "beauty", "measure", "rule", "hierarchy", characters still legible in the finished parts of the historical and consolidated city.

These reflections do not want to be a balance, which would also be necessary, for the ways in which those experiences that claimed to find in the plan – conceived as the quantum prefiguration of values and measures, in the formal inventiveness of the project – the strengths of an unlikely intervention strategy for the contemporary city.

Real shapes and places, drawings of cities, represented or described, pieces of cities chosen from memories, current research become the construction of a single place where all those characters, those shapes, sometimes linked to personal ideas and passions, will gradually settle, that in a new complexity of rules and relationships can become the heart of the new "city".

Techniques and procedures, however, risk reducing the operation of the project to empty formal exercises, to autobiographical closings of representation and in the worst case to mannerist attitudes. The attempt to order according to a direction, to build the foundations of a complex of principles that serve as the basis and support for a discipline, is a possible way in favor of knowledge as a prerequisite for any design operation. It would be a matter of identifying not only historical anchors but also and above all what emerges from the past in the present, from the anonymous culture of the project, to the experience linked to the transcription of the references. More specifically, within this line of work is considered a setting which can start from the attempt to re-read to re-found a design discipline mainly based on the empirical transmission of some techniques and the re-proposal of models, forms and languages supported by clear references theoretical.

A set of rules, voluntarily accepted, indispensable to continually contrast the praise of disorder, or of the unruly creative restlessness.[2]

Figure 2. Il Lungomare oggi.

An order as structure of things, which establishes, not only form and identity, but the ways of growth and mutation, new relationship systems guided by the idea of an innovation such as "non-ostentatious transgression".

Without a "significant order" there are no forms but only aggregations, "form is order ... Order is a creative force ... Through nature the why. Through order the what. Through the project the how . " [3]

The cognitive nature of architecture, in its analytical and design terms becomes a tool for investigating the real and being able to respond to a positive transformation through the project, recovering in the classical terms of architectural realism the relationship with history, the relationship with the architecture of the city.

"I would say that, we can make a big division, with respect to which there are more nuanced positions, complications, "distinction", between those who read a "story" from which to learn, as working material, from those who take a position that attributes to the past of architecture, to the heritage handed down to us, I would say more properly, to what on other occasions is called *exemplum* of architecture, only a critical function, "inexorably negative in the proposition, design, operational progress of architecture" [4].

Through the critical analysis of the "ancient" cities, which arose with unitary design processes, we interpret that type of order, of complexity, the city understood as architecture, as constructive art, as artifact, as heritage, as inheritance.

The city of Bari, therefore, a place of experimentation, directly generated by the Greek Roman civilization, whose main architectural features have historically been determined by adherence to the principles and techniques of 'plastic wall' construction, is by its nature a creation attributable to numerous and several moments of training, all related to the relationship with the sea. This relationship, although declined over time according to different paradigms, is certainly of fundamental value throughout the experience of building the urban fabric: from the Greek foundation of the 'island city', to the construction of the monumental seafront of Fascism, to the conformation of the terrestrial maritime infrastructures.

Consisting of several 'parts', legible and autonomous: the ancient village, the Murattian village, the modern part of the 1930s, the post-war expansion. This condition of "city made up of different parts" is today undergoing a radical change, new aesthetic models, new cultural conceptions impose a rethinking of the same, a reorganization of its urban landscape, in terms of the recovery of beauty, starting precisely from a renewed declination of the relationship with the coast and the sea.

Dominated by the Byzantines, Lombards, Normans, then Bourbon, Bari remains a city mainly linked to trade in continuous evolution and development so as to establish itself as the first city, after Naples, in southern Italy.

"After the Hasburgs icons, very limited geographically, in modern times, at least on the

Figure 3a. Stabilimenti balneari, lungomare Nord.

Figure 3b. Stabilimenti balneari, lungomare Sud.

Italian coast, a particular iconology emerges linked to the discovery of the sea as a health and symbolic value: I refer to the marine colonies and the fascist palace of the Nazario Sauro promenade in Bari. Before then the relationship with the sea was essentially productive ". [5]

The productive and commercial development, facilitated by the net improvement of the road network, allows to this city to transform rapidly, building important infrastructures such as the new port and the railway. Petroni himself, secretary of the Economic Society of Terra di Bari, expresses prophetic words about "future destinies" that the city would have achieved with the construction of the new port and the Puglia railway. This would quickly direct the exchanges of Apulian provinces towards central-northern Italy and central Europe rather than towards Naples and the Tyrrhenian area. In 1887 despite logistical difficulties, the new port of Bari now has a size of about 15 hectares. In the following three years, with the construction of the Customs and Port Authority buildings and with the construction of the Pizzoli wharf, the new port manages to provide itself with a series of services and infrastructures that have no comparison with other Adriatic ports.

Since the mid-seventies, the construction of the Adriatic railway line and the first sections

Figure 4. Lungomare Sud oggi.

of the Ionian one opens a new and important chapter in the now decades-long process of building a network of infrastructures functional to the productive and commercial growth of the province and its chief town.

A series of regulatory plans have followed one another from the plan of the Gimma architec and approved by Murat in 1813, to the Trotti plan of 1867, to the Veccia plan, of 1926, to the Petrucci plan of 1928, Calza Bini – Piacentini plans of 1954, to the Quaroni plan of 1965, all gradually have excluded the urban expansion of the '*lungomare sud*' part. The railway obstacle and element of separation between an ancient, nineteenth-century Bari, which stretches along the sea and a Bari which grows beyond the railway itself. (6)

The settlement model elects as a fundamental theme the rethinking of the relationship between the city of Bari and its sea, intervening in the part of land that extends between the Valenzano Canal and Torre a Mare, the area is linearly delimited by the coastal road and the railway, preceded to north by the monumental promenade, internal from the Japigia district. The area is 5 km long and 1 km deep.

Originally designed by sequences of vegetable gardens perpendicular to the coast line and marked by the presence of the three fortified coastal towers dating back to the sixteenth century and precisely *Torre Nera*, to the south *Torre Coetta* (today's Torre Quetta) and *Torre Carnosa*.

In almost all urban planning projects this part is not considered of interest despite the attention of the population that considers it the place of bathing and recreation, in 1940 and 1949 the *Lido Trullo* and the *Lido Marzulli* was respectively inaugurated, a large bathing village with an adjoining luxury hotel, open-air cinema, in short, the city beach.

Today the area is degraded and abandoned.

The will is, therefore, to recover the relationship with the sea, to regain public space.

This part of the city that has developed between the coast line and the railway line is today in a state of complete abandonment, the planning tool has consciously decided to deny this urban part, both the historical condition of "beach and entertainment " and a new updated and contemporary growth strategy.

Besides the railway line, the city of the 60s, the *Japigia* district, and the most recent expansions. The recent redevelopment of some stretches of coast adjacent to the consolidated city, the presence of administrative buildings, the new building of the Region and the military Shrine, have stimulated collective discussion and aroused administrative

Figure 5. Analisi delle infrastrutture del tratto del lungomare sud.

interest in the area called "*lungomare sud*". This stretch of coast becomes an opportunity and moment of design expression.

Yet the sea, for a Mediterranean coastal city, should not represent a limit but a destination to be reached, a space to conquer and towards which to represent the own identity, as what in correspondence to the ancient city, to the nineteenth-century city and to the 1930' city happened: cases in which the sea becomes the place of the urban scene, the most representative part of the city, the waterfront, the place of unusual rituals, irreplaceable for people who see in the water the possibility of a better way of life.

For all this that the Politecnico group has accepted the challenge by collaborating on an initiative promoted by Confindustria Bari, in the definition of a new settlement model based primarily on the relationship between architecture, city and sea.

For us, it was fundamental to think rather than a quantitative planning, a concept of space and volume, and which could correspond to a precise "idea of the city".

An architecture that observes and studies the world with balanced optimism, which does not limit itself to highlighting the crisis and defects of society, or to accepting a single point of view while ignoring complexity, which therefore exposes solutions not so much to reach a unitary form and shared project, as much as the essential concreteness of the collective project. A project that rejects the aim of proposing solutions to the "ugliness" of the modern city, which began after the war and exasperated by the building speculation techniques of many builders.

"It has been some time now that the terms of continuity and crisis have begun to lose much of their meaning in the context of Italian architectural culture. Not that the problems summarized by those terms have lost interest in the eyes of critics or architects: far from it, because never as at this moment, indeed, do they appear more current; but what feels aged, what is valued as belonging to an outdated debate, tied to interpretative schemes and expressive canons proper to a closed chapter or that is about to close, is the way to set up a problem such as that of the crisis and continuity, typical of the culture of the immediate post-war period with its long and not a little heavy aftermath "[7]

The architect is the one who tries to put together distant things. The metropolitan

Figure 6. Il progetto.

archipelago and the experimental model. The case of Bari is an emblematic example to deal with the reasoning about urban form for a new part of the city.

A reference area has been identified as a field of investigation, a stretch of the "*lungomare sud*" which today exhibits the typical characteristics of the peri-urban areas, the presence of infrastructure, the railway, the coastal road, agricultural fragments, spontaneous building fabrics, areas abandoned or gradually disused.

An area where shapes define the singular landscape on the edge of the consolidated city and which, according to a preliminary abstraction for the analysis of the case study, they can rethink. The experimental model recognizes, measures and defines parallel bands that from the coast line that cross the railway and reach the historic via Japigia, each of the individual bands is given a precise formal and structural role.

The area remains delimited to the west by the *Valenzano* canal and to the east by the hamlet of San Giorgio. The first strip called "the sea and bathing" is represented by the water line, rethought to allow the historic bathing through a significant redesign of the same and an important remediation of the sea.

The second strip called "the Mediterranean park" which starts from the historic coastal road and reaches the Bari / Brindisi railway line. This area, mainly free, is dedicated to equipped public green areas, all recreational and productive activities are structured inside: production spaces, fab Labs, street food, thematic clusters, botanical parks, relaxation areas, wellness paths and playgrounds. Hierarchical viability, controlled driveways, cycle paths and free and pedestrian paths.

The third "Urban Rural" zone, defined by the railway line and the limit of urban inedifiability, is explained by the beauty of the "natural" forms of the gardens and the cultivated countryside. The fourth band "The settlement model", this part dedicated to living, is designed as a large artifact formalized in all its parts. The buildings and the open space are modulated with respect to geometric figures determined by the concurrence of the different positions that remain to support the design.

This identifies an ideal and concrete order principle on which to compose the settlement parts, a rigorous order principle but open to various expressive experiments. The "street /

Figure 7a. Struttura geometrica del progetto.

Figure 7b. Il modello / progetto.

park / square" boulevards are transversal public structures that cross the parallel strips and reach the sea, constituting meanings and unique landing points. The landing defines its new "lighthouses" important artifacts redefining the skyline of the new Bari waterfront: the Casa del Mare (aquarium, museum, nautical activities) Urban pool System, tourist and accommodation facilities. The experimentation is therefore guided by a process of rational,

controllable, rigorous knowledge in the theoretical sense, based on a continuous critical revision of the principles, methods and techniques. In this way, a precise choice is determined, among other possible ones, of a series of rules that base the research for the contemporary project on meanings and values such as measure, rule, hierarchy, beauty.

The academic clarification tends to show not so much a methodological quality, but rather an evident continuity and a clear belonging to a "school" that goes beyond the limits of the didactic occasion, opening up to a critical, operative and participated comparison on the themes of architecture and of the city. The theoretical nodes of the research also make the knowledge of history indispensable: heritage and necessary condition for the development of effective tools for valorisation, safeguarding and recovery.

The systematic study of the relationship between tradition and innovation, the typological, constructive and technical updating (in continuity with the characteristics of indigenous traditions) are the useful research tools to guide the knowledge process, also in the field of teaching. With respect to this theme, through the discipline of the project a thought develops that arises as an alternative to the epistemology of the "formless" which seems to distinguish the "environmentalist" theories of the "third landscape", a design reflection towards the critical-interpretative assumption of the phenomena of 'dissonance' and 'fragmentation', as potential compositional matrices to be finalized in search of a renewed order based on the combination of the city of nature.

Questa ricerca ha trovato diversi momenti significativi, nella collaborazione con Confindustria Bari, Ance Bari e soprattutto, nel lavoro di ricerca scientifica e didattica svolto all'interno del laboratorio di laurea "riqualificazione del tratto del "Lungomare SUD a Bari" Corso di Laurea Magistrale in Architettura Dipartimento Dicar del Politecnico di Bari a.a. 2017/2018.

Relatore: Prof.ssa Loredana Ficarelli Correlatori: prof.ssa Francesca Calace, prof. Francesco DeFilippis, prof.ssa Mariangela Turchiarulo
Tutor: Arch. Nicola Scardigno

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Laureandi: Alessandra Decarlo, Roberta Gravina, Mario Luigi Antonio Martello, Diomede Romano, Nicola Villani, Gianpiero Zaccaria

Note

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2. Analytical and abstract thinking allows the dissection of the object and the isolation of its constituent components. The architectural project is the result of a complex act, determined by an ideational and an ordering process. An imaginative activity refers to the ideational process which allows to elaborate the materials taken from reality; on the other hand, a logical activity refers to the ordering process, which allows its control and transmissibility.
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5. R. Panella, Identità e trasformazione in Piano Progetto Città, rivista semestrale del Dipartimento di Architettura e Urbanistica dell'Università degli Studi "G.D'Annunzio" Chieti, 1995 pag. 28
6. M. Tafuri, "Ludovico Quaroni e lo sviluppo dell'architettura moderna in Italia", Edizioni di Comunità, Milano,1964.
7. The main town plans of the city of Bari 1949/2018
1949 INA casa builds the first structured public construction works in the Japigia district
1952 The plots on the waterfront become buildable, numerous spaces dedicated to bathing are born, such as "*Lido Marzulli*"
1960 The Perotti waterfront area is subject to detailed plans rejected for too many volumes
1968 The stretch of waterfront is redesigned with a tourist vocation by implementing and rearranging the infrastructure system
1970 Elevated roads are built to overcome the railway as the Garibaldi bridge
1979 First subdivision plan for Perotti Imperatore Traiano tip.
1989 Second housing development plan presented by Andidero, Matarrese, Quistelli
1993 The plan is approved and construction begins
1997 The public prosecutor of Bari orders the seizure of the residential complex of Perotti points
1999 The confiscation of buildings under construction is ordered because they are illegal
2004 Seizure seals were placed in *Torre Quetta* on order of the Public Prosecutor's Office for "serious risk to public health"
2006 The buildings built in *Punta Perotti* are demolished
2008 The remediation of the *Torre Quetta* site ends
2015 The Cipe (inter-ministerial committee for economic planning) on January 28 approved the definitive project of the "Bari Sud railway junction"
2017 Construction of the new building of the Apulia Region and detailed plan for the meshes 21 and 22
2018 In the DPP an attempt is made to identify the formation of a coastal park and a new centrality in the Japigia district.

THEORY

Material intelligibility of urban spaces: matter and suspended forms of time

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Materials preserve the traces of their origin and become gems of culture. The perpetuation from natural state, to the future setting, unfolds meanings through methods, tradition, rituals of construction, and city particularities. The signification of its spatial construction in the period of new materialism came to embrace those conditions which attain an antithetic role in physical representation. The intangible values of space presented often in the exaltation of materials, where unfolded matter transferred and transfigured, builds a new sensibility and draw forms and limits of time. Designing these limits and transposing in material terms requires finding a rule to modulate the compatible parts/fragments and specify what resists/remains regardless the measures and differences. On the resulted superimposition, the collision of an urge of abstraction and the evocative remains define the intervals and the representation of multiplicity of time. By analyzing the contemporary constructive solutions that still advocate timeless presence and solidity through structure and material compatibility, is intended to understand the role of materials in the relationships represented by parts of urban structure, the longevity and inexhaustibility, the incompleteness of determined building and their interchangeability.

Thus, the study tends to individuate those limits imposed by relevant projects through material implication and define/construct the form of time intervals in the urban structures within which the building/structure achieves its grounded form.

Introduction

What is timeless in architecture today? Idea? Idea defeats time, overcomes the lapse of its material mien, and desiccates in its perpetuity. How lasting is long for the Idea to perpetuate? How indifferent is the actuality? The liberty of artistic invention and the obsession for the new. We constantly confer these questions and are inclined to demonstrate a bit of resistance, resistance to the novel! Indubitably, architecture would include all the possible ambiguity, with intention to expound how and where stands its physical presence and its duration, or in other words the collusion of time-matter.

Today we rise a fundamental question, if architecture still stands as one of the modalities of time and if matter still represents its primordial register of time in architecture, in a word- is architecture still the domain which perceives time?!

Greeks habilitated two modes of time; the time of mind, its eternal truth-Aion and the time of concrete, of presence that is embodied on matter, on constructed architecture-Kronos. The question returns-who perceives time? Matter, the one that constructs architecture is first presence[1]. Xavier Zubiri affirms that "matter is the principle of actuality of material reality"[2]

According to Paul Valéry "The matter exists only in the presence, matter exists only on the instant. This is essential. The instant is matter, only matter, everything else is spirit, and is as to say nothing".

The time of designed things and the time of nature. The sense of this pair becomes the base in which the work of architecture is subjected to an extraordinary intimacy between time and building. This tight knot, leads us to longevity-another long-discussed issue, after mid 50s of last century and particularly in the latest contemporary debates.

As matter, in a certain interval of time ceases to accomplish its physical commitment and becomes a poetic evidence. The interval in architecture represents a register of segments of material activity since its extraction from nature to its return as a ruin. We encounter the excavated reality in those segments and the limits they inlay over the carnal possessions. Returning to Idea and the materiality, we are back to a rudimentary act that consists in understanding how architecture suspends time either in its physical presence(phenomenologically) or its ontological deliberation, to its structural paradigm that traditionally associated with timelessness.

Thus, the work tries to interpret the forms of time through unfolding the matter of construction, whether embedded materially or immaterially. The attention lies in the evidence of specific moments that tempered and mutated the meaning of matter in function of certain cultural scents and its interpretation in the guise of emerged ideologies. As Steven Holl stresses 'To last, to endure is a primary challenge to architecture conceived today'[3], here is set that through analysis and comparison of structure and surface in a relatively recent works to find a potential overlap and the advocation of time and material transformation in two different geographic areas.

Time's metaphor

Gibellina museum

When natural matter acquires an artificial order, is charged with poetic sense. It evolves toward a geometric intent and manifests the idea physically for a certain period. When during this life cycle, the structure of building is neatly laced with 'coerced' parts which evoke higher orders, past ideas, we witness a time superimposition that is followed also in spatial experience as an animated parallax. This process lies somewhere in being and becoming and these intervals are themes constructed in the works of architecture. We can deliberately detect two main characters of time in the following examples: the time of present, of hours, an instant change that indulges anything carnal in a protean subject, and time multiplicity

1 Espuelas F., *Madre materia*, Christian Marinotti edizioni, Milano, 2011, p.14
2 ZUBIRI Xavier, *Espacio, Tiempo, Materia*, Allianza, Milano 1996, p.371
3 MINDRUP Matthew *The Material Imagination.Reveries on Architecture and Matter* (2015), p.87

solicited in actual absence of matter, conceived in immaterial that till recently sustained what is conceived as timelessness. Thus, what is duration? Where is incited? Francesco Venezia constructs forms of time, by careful adherence of materials, dimensions and their disposition into the elements of structure/surface. Gibellina museum, an example of whose architecture contemplates the multiplicity of time and seeks fair exposure of that what is conceived as a ruin(material with high cultural register) "architetture di spoglio" and Venezia asserts "nella contaminazione tra quanto c'è di indecifrabile e per sempre muto, e quanto vi è di disponibile ad assumere infinite forme di struttura si gioca la 'durata'stessa dell'edificio, il tempo che riusciamo a distendere tra il fossile e il vivente"[4]-an equivocal call and equality of ruination and new matter in act. The nature transformed with cure, as Siza would say.

The museum of Gibellina represents an intersection of abstraction and reminiscence/ empathy. A parallelepiped form that turns its presence in a museum itself. The space is enclosed by stone walls in request to dedication of place. Telluric architect excavates the volumes to define these walls, to mark the delimited space. The fragment of 15th century façade of palace survived from the antique city, is imported in a new configuration. Materials of different origins produce and evoke a suffusing vocation. The façade echoes the durability in architecture and the time of designed fragments that tend to confront the natural law.

The modality of treatment of found matter from nature or matter that already had a life in other construction, incites Venezia to install an Order, which is achieved by parts found and recomposed and indulged in new resonance of meanings. The survived fragment of the façade of Palazzo Di Lorenzo, from the earthquake in Gibellina that composes the form and in the surface of walls that seem to rise from the ground, interrupts this appearance with horizontal lines that probably can be read as a load bearing structure or decoration of surface.

The incomplete symmetry of reconstructed façade is precarious' due to the superimposition of images that characterize the surface and yield a movement and unclear sense where the frames of these images are convulsed by uncertainty and still maintain their individual magnitude in overall meaning.[5]

The ambiguity of museum's architecture is a result of will, tendency to construct a line/ register of resorted 'architectures', a will for planned transformation, which currently hosts the insecurity and suspended decisions. Intentionally, we find unfinished, interrupted parts of the construction of the museum left as expectancy, of accidents as in the case of interrupted pillars 'half wrapped in golden stone' extended by rusty brackets. From the images and representation, we extract the sense of things/themes. The space is created in the measure and scale of the fragment and to the matter inside the wall structures, Venezia imposes different condition on the execution, joint alternation, rhythm of mass and voids. The irregular wall, from the irregular crinkle of matter, fractions, interstices, joints. The detail is considered in the recall of memory between a plastic sensibility and constructive necessity. For these fragments which already had or were charged with certain sense and placement become a measure of forms that emphasize a certain dedication to time and interrogate and contaminate the architecture that receives them. A careful disposition (as Mies would say) of stone, brick, in the construction of architecture of F. Venezia brings new sensibility that congregates the parts in a new tension and drama. The structure is a house in the middle of other houses of Gibellina nuova. In this conglomerate and landscape, the colors and materials of construction acquire a certain sensuality. The altered horizontal yellow sandstone bush hammered and smooth lines. We know the architect more as an architect of a site, changing and adding, working on site. L'opus incertum of Gibellina museum clearly display the readiness of uncertain expectations and unpredictability regards the time and constructive feasibility. Architecture is represented from excavation, spoglio, basement, fragments, durability and inexhaustibility, the horizon as a theme of project, the sensuality of materials, the construction of the form of time. [6]

4 Venezia F, *Francesco Venezia : le idee e le occasioni* Electa, Milano, 2006
5 Ibidem

6 Idem.

Material metaphor

What we witness today is an interdisciplinary interest in the reassessment of materiality, corporeality and atmospheric drift of architecture. The immaterial, ideal geometric forms for long is correlated with timeless and abstraction while anything material is affiliated to the empathic, temporal. This brings us to the question to where the reality is revealed the best! Is reality of building incited in structure? Or surface?

If for Bötticher[7], the structure was primary, and this core represented the reality, the truth, the lasting while for Semper what we see is the reality and the surface prevails as architecture meaning, we convey another question; is structure timeless? Is appearance(surface) temporal? [8]

-The Phenomenological hue unveiled and largely influenced the architectural theories of 1970s. At this stage the material propensity regained its spot, and its experience would be essential on imagining architecture. The ethos of materiality and the recede of poetic imagination of architecture, characterize this renewed interest on understanding the architectural forms from emerging in a consequence of material pragmatic role in architectural form.

While architect is engaging in poetic reverie of architecture, seems necessary to think of material experience instantly, this consisting in what neuroscience sustains, cognitive processes that permit architect to perceive space are also the base of conceptual systems and invite the experience in a material imagination. We perceive and experience. "In the gap between material and architectural form, the propensity of an object that is held in the palm of the hand depends upon how well material corroborates with the architect's imagination of form."[9]

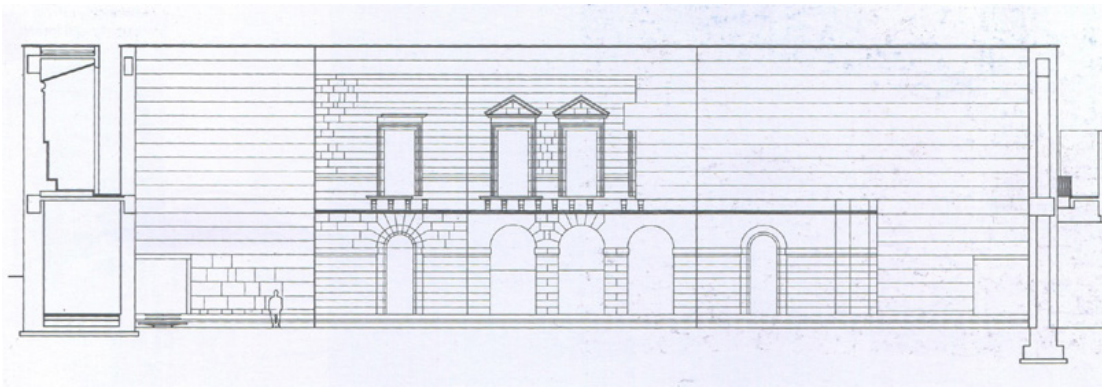
Figure 1. Gibellina museum; wall fragment from inner courtyard.

7 Boettischer K, *Die Tektonik der Hellenen Electa*, Berlin, 1874

8 Semper G, *Style: style in the technical and tectonic arts, "Stoffwechseltheorie' (theory of material transformation)*" Getty Publications LA, 2004

9 MINDRUP Matthew *The Material Imagination.Reveries on Architecture and Matter* (2015)

Figure 2. Gibellina museum; insertion of 15th century façade fragment.



As the concentration of argument is aligned in material conception -construction- every period of architecture has favored a certain type of materials or sophisticated new one conforms their ideological stand. Illuminist epoch has dissolved material characteristics to consider matter in its wholeness and concentrate on idea. Further, to some extent, a negation of material expressive qualities and decoration appears in the modern period as well, space and time have acquired another character,as that of homogeneity, the montage and modular materiality.

The study is concentrated in the works which reveal their time and spatial sense in the facture of materials. Timelessness is conceived in material metaphor. As different materials create different factures, the representation of architecture, comes as a recall, as an opportunity to matter to reinforce its significant role and authenticity of meaning. Zumthor's factures in his drawings for Therme Vals demonstrate how the constructive solutions are rooted in the resistance of material and not form. The configured composition with its fissures, is an open speculation-new building with the hidden aura distinguished in the Zumthor's work is felt with the presence of well-handled marriage of stone, water and shadows. A pure eulogy of matter as prime in its architectural conception. Epitome of material interrelation with the design thinking-this middle ground yield timelessness. Presence is a result of facture's relation with space, a moment of making visible the invisible, as Klee affirmed. Therme Vals because of excavation and extraction embody the commune spirit of quarry and architecture-artifice. The Idea sediment is clear reflection of Zumthor approach of stones in the buildings as a piece of quarry.[10] Zumthor seeks for reality since the designing phase, by leaving open patches, 'accidental cracks'-'intentional fissures' The way of indicating the consideration of material presence of the building since the initial phases, architects employ a certain methods since drawings, narrowing in this way the gap from what is intellectual and material. Facture represents a 'mode' that allows Zumthor to interconnect the construction of drawing and building.

As architecture finds its definition in the enclosed space, the spatial effect of materials is a crux for the followers of Semper's paradigm 'the spatial effect stands above everything'. Space along with materiality and function acquires another dimension in the theory of Semper who privileges the surface to which architecture is what we conceive from outside rather from inside named structure. Herzog de Meuron proceed with similar space and material concept, they work in architectural space through surface. Their inedited work with materials for each single project defines their architectural language.[11]

The dressing, material, surface today metaphorically fulfil any intention/function of the building, that is reveal or unveil the meaning/function. Fixed attributes of materials as a product of our believes, as glass is not anymore only transparent but also opaque, the concrete does not necessarily represent hardness. Herzog de Meuron work on surfaces and question material laws-similar to Semper consideration 'materials were never about stability'-

10 MINDRUP Matthew *The Material Imagination.Reveries on Architecture and Matter* (2015), p.87
11 Herzog& de Meuron.*1992-1996 The Complete Works, Birkhauser-Publishers for Architecture*,Basel 2000

deliberating surface to determine the material, as was never about natural character of material, something discordant to Zumthor whose intention is to work with natural materials leaving the conventional purpose and endowing them with authentic essence.

Extending the argument to urban scale, it conveys many levels of understanding the built structure and space. Materials that manifest the idea of place, as returning to Francesco Venezia in his discussion of third experience of stone, where the idea of transfer and cyclicity of material-stone, propel the equivocal ruination representing the growth and the history rot, cave and architecture, naturality and abstraction in an epistemological metaphor that unfolds the city.

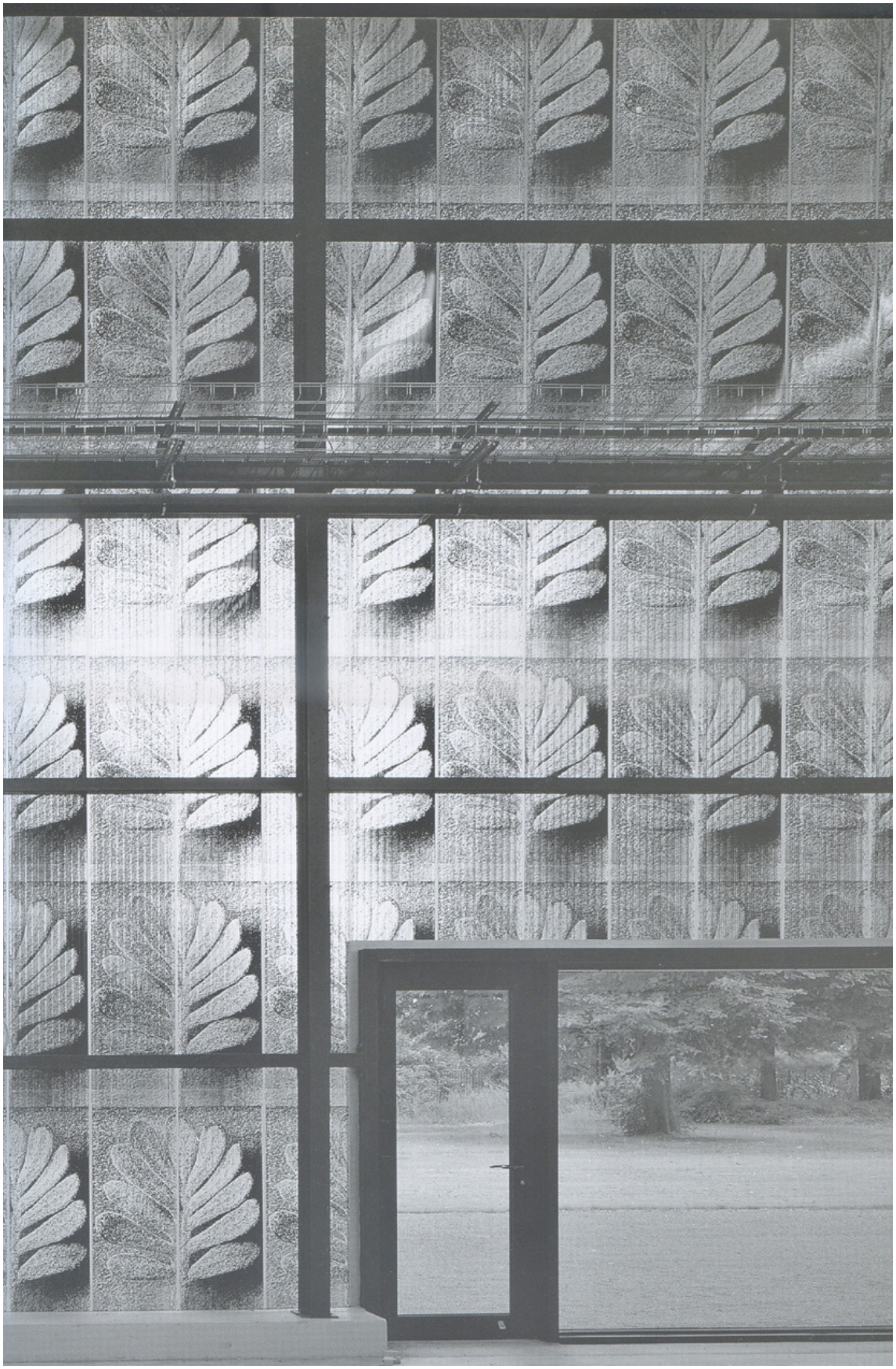
Conclusion

Materials have a certain inclination but are not limited in the material resistances and their potential expressions. The abovementioned examples discussed before, infuse the long-term division of structure and surface through a deliberation of material work/conception. Space along with materiality and function acquires another dimension. Venezia tries to incite a timeless sense in a continuous cyclicity of matter. Gibellina museum contemplates the multiplicity of time through transfer of fragment as a reading piece of history of the place, and with a transfer of material from a natural cycle. Zumthor's work, bares materials from their natural evocation and cultural charge and creates new genuine meaning and sensuality of material in a sublime engagement with light, time, place and function. While Herzog de Meuron work, constantly question the fixed attributes/laws of material, asserting that there is no natural character of material, and material is determined by surface.

Thus, a metonym of architectural presence is activated diversely and in all its parts is reality and representation, each side exhibits a certain order where matter as an abstract-constructive quality participates equivocally in the universal comprehension.

Figure 3. Therme Vals;interior walls of stone.

Figure 4. Ricola factory; walls with plant motivest by Karl barefield.



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Proto 'Plastic' Architecture. Before Reinforced Concrete

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This paper focuses on the origins of reinforced concrete architecture, just a little time before the reinforced concrete invention, that could be identified through the application of the typological reading method. Traditionally, this method established and generalized two large types of architectural 'characters' that define two different cultural worlds and to generally recognize two major types of architecture, linked to the material present in their belonging geographical areas: the masonry-plastic world and the wooden-elastic world. The 'materical' character (stone, wood) is coherently defined together with the 'mechanical' character (plastic, elastic) that characterizes it. With reinforced concrete, which contains both characters, the boundaries of this difference fade away: it represents the perfect union/fusion of two materials that, when considered individually, express diametrically opposed characters. And it is precisely in this point that these reflections here presented intend to insert: two materials that have been, on closer inspection, always organically collaborating, at different levels. This study will try to shed light on the 'plastic' aspect of this relationship, investigating the origins of architecture that, in my opinion, it is possible to define 'proto-plastic'. Architecture in compressed material, for example (pisè, adobe, tapial, constipated earth ...) expresses a direct antecedent of reinforced concrete. The Roman opus caementicium, on the other hand, proposes a perfect constructive fusion of several materials that manifests itself in the great spatial quality achieved. The reinforced masonry, in which the relationship between the finite number of the stone elements and the unifying tendency of the elastic wooden cage reach a high level of experimentation. Finally, the 'baraccata' architecture, in which the wooden elastic cage is not load-bearing but collaborates in the sealing of the stone load-bearing masonry. In all these cases we reach, at different scales and levels of organicity, a coincidence/convergence between construction and space.

Introduction

The topics of this paper represent a synthesis of a more complex and articulated matter that has its focus on the particular exploitation of the 'plastic' qualities of reinforced concrete. This paper tried to identify the antecedents able to preform, anticipate, suggest, and advocate the codification of reinforced concrete and the architecture built with this material. Physical and immaterial factors, that contributed to the formation of this new material, were identified and investigated in some previous construction experiences. Reinforced concrete inherited the organic aspects of the construction techniques that preceded it, reinterpreting and pouring them into modern and contemporary architecture, outlining and opening new horizons for architectural research.

Theory and Method

The following reflections are based on the assumption that artifice – the work of the human being – is the product of the primordial relationship between him and the contingent matter that he has learned to transform. An intimate and necessary relationship that allows him to survive on one hand, and to enjoy it from an aesthetic point of view on the other. A continuous relationship that is configured as a "process-in-progress": not a series of events, arranged one after the other, but a sequence of facts and successive transformations that cannot happen without the preceding ones.

This historical-critical approach invests architecture thanks to the huge studies of Saverio Muratori: the new historical conception drastically changes the way in which architecture criticism is conceived and builds an unusual and broad theoretical structure on which the typo-morphological and processual reading method is based. This method has allowed us to open new horizons of scientific research and to verify theoretical concepts in practice.

The development of this discipline takes place through a similar process: the new theoretical reflections are necessarily based on the previous ones, updating and refining meanings and concepts, proceeding towards ever new temporary and in-preparation syntheses. The reflections that are presented in this text, therefore, are grafted onto the previous corpus and seek to propose new critical points to the scientific community.

How? By referring to and by instrumentally using concepts and notions deriving from the discipline of construction science and technology, especially the behavior of materials and constructive elements under stress. The nature of the materials behavior produced, in the type-morphological study of architecture, an essential and fundamental critical contribution that allowed us to identify two cultural worlds: the wooden-elastic world and the masonry-plastic one.

Previous Studies and Research

The notions and concepts presented above have consolidated a series of successive reflections on a possible critical and oriented reading of the historical evolution of architecture. The theme around which these reflections are centered is the introduction of reinforced concrete in architecture, a phenomenon delineated by critics and then spread globally by the International Style: today generally accepted, this core of critical thought proposes the consolidation of the structural 'skeleton', composed of pillars and beams in reinforced concrete, as a fundamental element of the new modern architecture that is further conveyed by the authority of Lecorbusier establishing the famous "five points". A construction system which, subjected to a more complete organic analysis, is structurally load-bearing but not spatially closing and which derives from the coherent interpretation of the discrete system, codified by the precise use of wooden trunks forming serial structures, whose spatial closure is left to a second step and to another material. This process can be roughly localized in the so-called 'wooden-elastic' area (eg Northern Europe), while the 'masonry-plastic' area uses the elastic system inside the traditional masonry, which is both load-bearing and closing system at the same time. The terms 'elastic' and 'plastic' define the mechanical behavior of the material subjected to force actions, internal or external, while the terms 'wooden' and

'masonry' refer to the character of the material and to the material itself.

With the introduction of reinforced concrete in architecture this general dyadic terms distinction loses the second term: 'elastic' architecture will be the one conceived and constructed using the structural skeleton (beams and pillars) in reinforced concrete, while 'plastic' architecture, taking up the masonry character of the stone, includes all those constructions conceived and built in reinforced concrete septa, walls or bearing boxes. On this subject – in some ways still inedited and unexplored – I tried to give a more careful and in-deep definition in my doctoral research, trying to prepare a broad base of reflections, thoughts, concepts and systematizations ready to be discussed by the scientific community.

The plastic architecture (in reinforced concrete) presents organic characteristics in the unitary and coincidental composition of space and structure: the spatial hierarchy of a building is defined through the construction of reinforced concrete walls, solid, pushing, opaque, load-bearing and at the same time closing structure. Today it is possible to identify a large number of architectures that reach a good level of 'plasticity': partitions and supporting boxes, on one hand, large pushing shells on the other. What is missing however – but the process is in making – is a synthesis that unites and mixes these two great parts, reaching the maximum degree of organicity through the plastic use of reinforced concrete.

The same type of organic collaboration of the parts that constitute what we have called plastic architecture can be found in the mechanism that regulates the formation of 'plastic' cities. The plastic city is made of fabrics whose elements can be replaced, added or modified, without producing a new overall configuration of the city (while the elastic city is composed by urban fabrics whose elements can be replaced, added or changed, producing a new overall configuration of the city).

Proto Plastic Architecture

'Compressed' Architecture: Rammed Earth, Pisé, Adobe, Tapial

We come finally to investigate the topic discussed here, that is what could be defined as 'proto-plastic architecture'. We have seen how a certain type of formative process provided interesting results in the discipline of architecture, especially reinforced concrete architecture. A seemingly formless material that potentially incorporates more characters together. Now, however, we will try to relate four types of materials, and therefore four types of architecture that they produced, whose characters preceded and ideally suggested the organic synthesis obtained with reinforced concrete and with 'plastic' architecture.

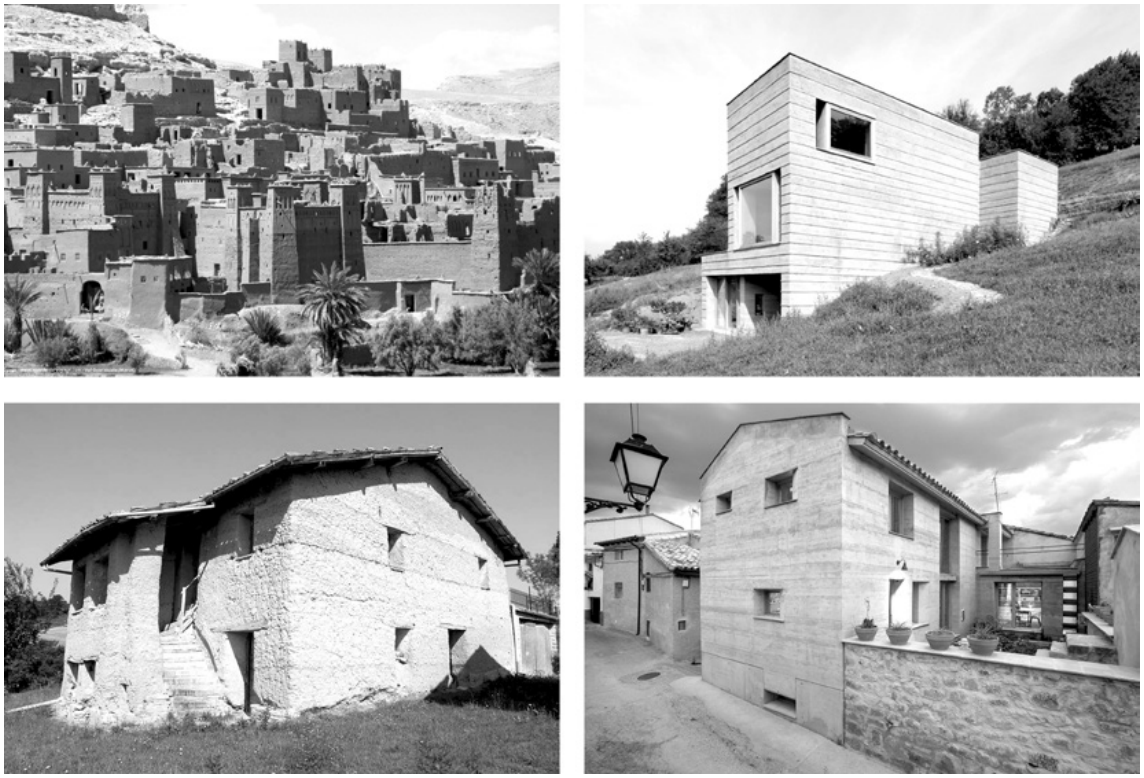
The material that contributes to form the plastic character of concrete is the earth. The soil, as a result of a millenary accumulation of earthly transformations, becomes the main supplier of raw materials available. Man recognized its attitude to transformation. Together with water and inert materials of various kinds, the earth produces a building material that is at the same time effective and fragile: the earthen buildings are in constant maintenance, in continuous care but respond in the best way to the needs of protection and comfort that has always characterized the human being.

From the architectural point of view, earth buildings presuppose an extremely organic design attitude, in which the space to be defined cannot be conceived without its construction. Proportion and size determine weights, heights, thicknesses, distances to which spatial hierarchies are in turn linked. The tectonics is evident in the coherent and clear difference between load-bearing parts and non-load-bearing parts: the walls of constipated earth define the environments of a building and carry light structures, usually made of wooden elements or bamboo, dividing the vertical spaces.

The use of this material can be found in different parts of the world where neither stone nor wood are predominantly present: earthen constructions of Sub-Saharan Africa, southern Morocco, some areas of China and South America, for example, owe their survival to the continuous action of man who renews wall surfaces, preserving intact their structural capacity.

Today we continue to build with clay using contemporary technologies, obtaining high quality architecture.

Figure 1. Compressed Architecture: rammed earth, pisé, adobe, tapial.



Opus Caementicium and Roman Architecture

When we talk about concrete, we refer to the technique of the cement work, inherited from the Hellenic peoples, then perfected and shared by the ancient Romans. Mortar, lime, aggregates, pozzolan, held together by water, are the elements that, reacting organically with each other, constitute a single new material, fluid, malleable, plastic. This mixture, deriving in most part from the transformation of the lithic and mineral material, could be poured directly into removable wooden formworks at the end of the construction operation or thrown in disposable formworks consisting of bricks of various shapes and sizes that very often were covered with marble slabs for the final expressiveness of architecture.

From the architectural point of view, in both cases the project of the structure coincides with the project of the spaces to be defined: the organic approach is born precisely from the need to define the different spatial hierarchies of a building – internal paths, serial spaces, nodal environments – through the structure that is load-bearing and closing. It is the structure itself that defines the space: a continuous, massive, opaque structure. Today there is a renewed interest in the plastic and masonry capacity of reinforced concrete, that is the ability to define spaces simultaneously and necessarily to the constructive choice to be made.

To better visualize this concept, it is possible to refer to some examples of Roman architecture, still visible and "functioning" both from a mechanical structural and spatial point of view. The first could be the large covered hall of the Trajan Market: this space is covered by the pushing structure of the great vault in concrete which unloads the forces on the lateral structures that define the serial spaces serving the full-height nodal space. In a progression of organicity, the second example may be the central space of the Octagonal Hall of the Neronian Domus Aurea: here is the dome, made with a complex constructive technique and refined cement, which unloads the forces on the lateral structures which open into serving spaces. Also, in this case the structure is inseparable from the spatial hierarchy. The last example, the most complex and refined, is given by the Pantheon, where

Figure 2. Opus Caementicium and Roman Architecture.

construction and architecture merge into a perfect organic unicum.

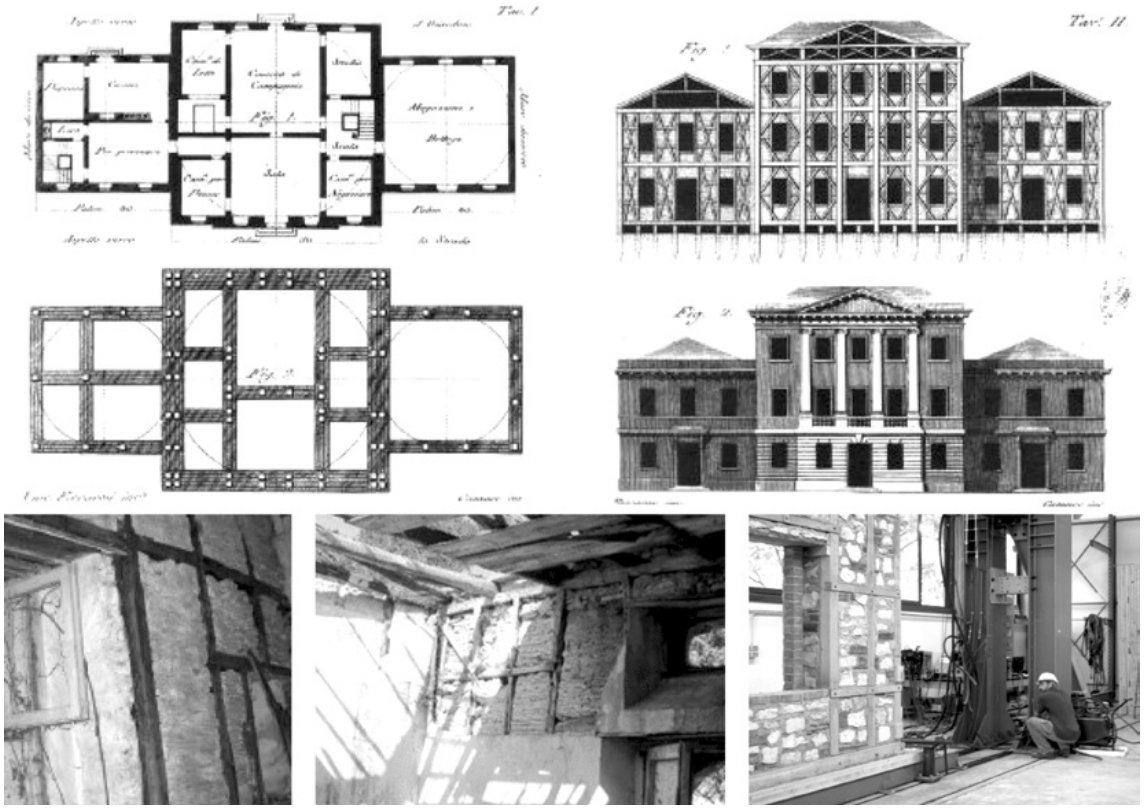
Today, numerous Roman buildings, now deprived of their primitive functions, continue to live constructively through the grafting and fusion of new buildings and new functions. Roman concrete, among the most durable and resistant, undergoes over the centuries plastic transformations that incorporate it into new structures. The concepts of the past and the future tend to disappear in the present. Only in Rome, buildings such as the Tablinium, the Theater of Marcellus, the Mausoleum of Hadrian or the Baths of Diocletian, was transformed from the functional point of view, but maintaining and more updating the construction, modifying it according to new spatial needs. The Tablinium becomes a palace; the substructures of the Theater of Marcellus host, during the Middle Ages, housing construction and constitute the structural bases on which, during the sixteenth century, Palazzo dei Savelli was built; the Mausoleum of Hadrian becomes the fortified residence of the Pope; and the Baths of Diocletian will be transformed into a church by Michelangelo.

It is evident and known how the ancient opus caementicium Roman technique influenced the subsequent research on the recovery and updating of the reinforced concrete modern technique. The organic thought, developed during the Roman period, reflected today in the plastic architecture built in reinforced concrete and constitutes a real cultural heritage that settled in the deepest part of the Mediterranean collective constructive conscience. The active and collaborative presence of several materials and the wise use of doses and quantities of different materials used in those complex pushing structures make this technique new and fertile related to new possible experiments.

'Baraccata' Architecture and Wooden Reinforcement

A brilliant organic mechanism is the one developed by the first anti-seismic code in the world, the Bourbons Code. To sum up, it is a constructive system which, following the catastrophic events that marked Calabria region, constituted a fundamental, theoretical and practical basis for the subsequent development of anti-seismic science. The Bourbon

Figure 3. 'Baraccata' Architecture and wooden reinforcement.



technical engineers, involved in the nascent neoclassical culture, rediscovered and applied the Vitruvian rules to the ancient local constructive habits of Calabria, a land rich in wood, they rewrote in an updated way. Through the support of the first results that the science of construction in the same years began to give, the rules of structural collaboration of different building systems.

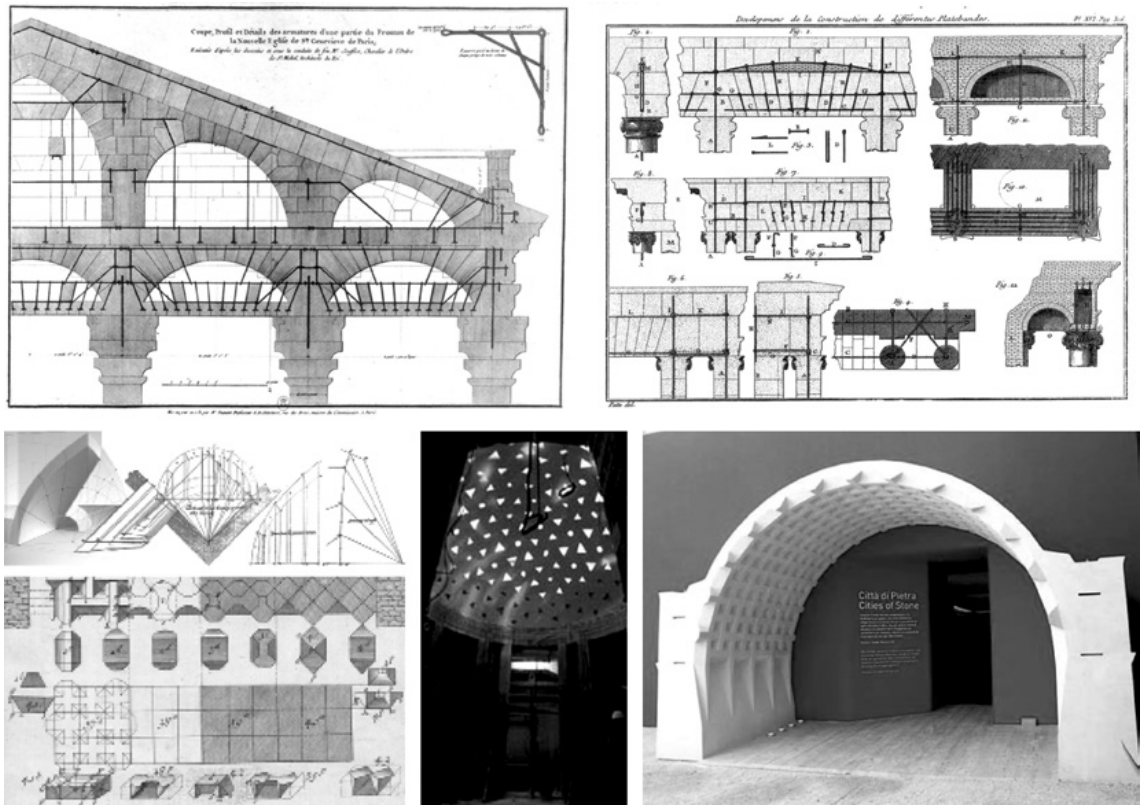
The Bourbon anti-seismic code presented two types of structures: the first included, in the reconstruction of semi-destroyed buildings from scratch, the setting of a double framed bearing structure, composed by beams and pillars, closed by stone masonry; the second included the insertion of a single wooden frame inside the masonry, which retained its supporting function. In the second case the wooden structure had the function to reinforce the masonry and to collaborate with it to the resistance to earthquakes. From an architectural point of view, the space is always conceived together with the construction of load-bearing walls, once again reaching and showing the Mediterranean organic design thinking. In this case it includes also the possibility to resist the efforts due to seismic events.

In the built reality, in most cases the wooden reinforcement was employed by intervening on the masonry of the buildings still standing. A clear example is the Episcopal Palace of Mileto which presents the wooden elements connected together forming the reinforcement, inserted in the internal part of the thick load-bearing masonry, which collaborates to the resistance to horizontal forces. This palace is still standing empirically demonstrating the effectiveness of the system.

More recently, tests carried out on a model made in scale, in the Ivalsa laboratory in Trento, prove the effectiveness of the Bourbon anti-seismic system. These tests produced objective numerical data that confirm the effectiveness of the organic collaboration of several different structures, the masonry and the elastic structure. It is interesting to note that the model reproduces the constructive system with a single frame inserted in the masonry, not supporting but collaborating.

Why is it important to include the Bourbon system in this discussion? In my opinion, it is

Figure 4. Reinforced stone and stereotomy.



possible to identify, also in this case, traces of an organic approach to construction that can be defined proto-plastic. An approach based on a logical and technical assumption, responding to the contingent needs determined by the earthquake, which incorporates spontaneous aspects that can be framed within a procedural sequence related to the formation of the cultural substratum that maintained – preserving it – the plastic and masonry character of reinforced concrete that represents the technical and technological synthesis of this process.

In this case in particular, the relationship of collaboration – not of subordination – between the two structures is emphasized: the masonry, which performs the structurally supporting function and the closing space function at the same time, receives the weights and the compression efforts. The wooden structure completes the masonry function opposing diagonal and horizontal efforts.

The elastic structure is incorporated in the masonry but not completely stifled in it: the overall plastic character of the structure could be, in my opinion, a precursor of an organic approach to construction, composition, spatial wall design.

Reinforced Stone and Stereotomy

The last factors that could be included among those preceding the development of modern-design reinforced concrete are the stereotomy discipline and the reinforced stone: building systems that transformed themselves into organic elements, combining the architectural sensibility with the construction technology.

From an architectural point of view, it is important to underline the organic nature with which the collaboration between elements constitutes an all-involved and tense structure, where the forces, guided by gravity, flow towards the ground. The perfect cut of the stone elements, through the stereotomy technique, presupposes, in the mind of the craftsman, an organic, comprehensive, unifying attitude of the space the elements will build. In the same

way, the reinforced stone introduces iron into the building constructive system, increasing its organic character and, at the same time, reaching a technological update of a different approach, more serial and elastic, which has its apex in the templar architecture of Classical Greece.

The cutting of the stone elements for their absolute adherence is improved, taking innovative technological elements from the development of descriptive geometry discipline, during the sixteenth century in France and later in Spain, but finds its roots in much more remote eras. A clear example is located in Peru and is part of the refined system of building equipment of the Inca people. In France the main experimenter and scholar of this technique is Philibert de L'Orme, who builds numerous buildings using this technique, based on Gaspar Monge's studies on orthogonal projections. Later, Antonio Rovira i Rabassa in Spain will implement the stereotomic technique writing and spreading a detailed technical manual.

It is possible, anyway, to define the features of a parallel story on the relationship between the supporting stone and the types of reinforcement for the contrast/elimination of the diagonal/horizontal forces: an example is the string used during Renaissance, a linear iron element inserted at the back of the vaults to resume and cancel the thrusting forces of the vaults towards the outside. The portico of the Innocents in Florence shows the organic nature, the massiveness, the power of the pushing vaults that collaborate, share and resolve the slowness of the columnar supports of the portico: this thanks to the use of the iron string element that cancels the external thrusts and brings them back to the back wall. In my opinion, this is the beginning of that collaboration with the only difference that the iron structure is outside the masonry structure. What will take place later, for example in the Parisian Pantheon, is the introduction of the tense structure inside the compressed masonry, reaching a high degree of collaboration between the two materials.

In contemporary architecture it is possible to identify an actual update of the stereotomic technique which incorporates and exploits the parametric tools in the design definition of the anthropic space.

The reinforced stone has never had an updating process yet and is awaiting for new experimentation: today, unfortunately, its use is not extended and it essentially plays roles linked to purely technical planning, failing to intervene organically in the contemporary design process if not only at a technical level.

Both the technological systems are important for the purposes of the critical reasoning discussed in this paper for different reasons.

The proximity of the stereotomic system to reinforced concrete could be identified in the perfect continuity of the technical sections, in the adherence of each single point with the contiguous one and in the formal and constructive adaptation of each single component to the composition of a higher scale. Each segment of a stereotomic structure takes a different form depending on the role and position in which it stands, and each face of the single element changes in relation to the contiguous one and to the general direction of the forces conveyed to the ground. The substantial difference between the reinforced concrete structure and the stereotomic structure is evidently the number of their parts: the concrete is a 'liquid stone' and its parts cannot be identified because they are integrated, infinitesimal, while in the stereotomic system it is possible to identify a finite number of elements that compose a structure. In my opinion, the unitary sensitivity of the organic stereotomic approach and the reinforced stone system place, in my opinion, these technologies among the processual antecedents that contribute to the formation of the new material.

Regarding the use and arrangement of the iron bars, the reinforced stone proposes basically the same configuration that characterizes reinforced concrete beams. Here the constructive sensitivity concentrates on the identification and elimination of traction forces within a pushing masonry structure: the coexistence and the organic collaboration of these two materials allows, in my opinion, to insert this construction system in that 'proto' formative phase preceding the reinforced concrete final codification. The arrangement of the iron armor inside stone lintels heralds the subsequent development and 'softens' what is now considered a break in the history of architecture.

Conclusion

In conclusion, we can say that, within the technical-constructive and architectural synthesis represented by reinforced concrete, it is possible to identify characters deriving from the sedimentation of building habits typical of the masonry cultural areas, such as the Mediterranean one. It is possible, therefore, to outline and propose a sort of protohistory of reinforced concrete, identifying among the different construction techniques of mineral and lithic materials, sometimes incorporating elastic and wooden materials, four previous formative experiences discussed in this paper. In these formative experiences are present in nuce not only the plastic characteristics of the material itself but also the organic character of the architecture it produces: reinforced concrete updates and merges these characters into units, presenting, more and more frequently, 'plastic' architectures reproposing the nexus of necessity between construction and spatial hierarchy. Knowing the formative phases of reinforced concrete – its proto-history – means being able to identify the process of assimilation and interpretation of the previous constructive culture and project it onto new plans for architectural design research.

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Tectonics of the "essential shelter" in the escola paulista. The "diaphragm-ceiling" and the "weft-ceiling" in the constructive logic of reinforced concrete

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This paper investigates the elementary statement of the "essential shelter" as fundamental archetype of construction during the 20th century. In particular the paper focus on the escola paulista design approach respect to this issue, which tested the constructive logic of the reinforced concrete in order to transfigure in a new material, this idea of the essential "shelter". This is an aim very difficult to achieve because the concrete has not a well-defined identity but many facets. This implies that the designer has to prefigure the process of construction and the building site before proposing a shape of the building. It is a sort of structural design that deals with the art to mold the material in elements, organism and systems that have an expressive sense. The analysis starts from two structural categories (horizontal beam-pillars system on one-way or two-ways) to which corresponds a specific spatial character about the construction of the concrete shelter. Hence, one investigates the morphological evolution of the essential shelter from a domestic scale to the urban scale. If the shelter is, according to Giedion, "the main topic of the Modern architectural development" the paper identifies in two design of the escola paulista a morphological contribution to the issue of reinforced concrete "essential shelter". In this respect, Francisco Petracco e Pedro Paulo de Melo Saraiva (1964) built the Clube XV in Santos, which adopted the structural layout corresponding to a "thrilitic system", with the figurative idea of the "weft-ceiling". Otherwise, the FAU building in Sao Paulo by Joao Baptista Vilanova Artigas referred to the idea of the "trabeated roof", in which the figurative purpose is to build a "diaphragm-ceiling". Through a comparative analysis, the paper identifies these two case studies, focusing on the technical, figurative, spatial and urban features.

Introduzione

Il tema dell'espressività della tecnica costruttiva del cemento armato, individuabile nel rapporto tra forma tecnica e forma architettonica è uno dei nuclei problematici del Moderno. Il cemento infatti, "non ha un'identità definita, ma numerosi volti, che rispecchiano i mutevoli obiettivi dei progettisti e dei costruttori che lo utilizzano. È a causa di questa capacità di variazione e di cambiamento che è riuscito ad affermarsi come materiale più emblematico del XX secolo" (Picon 2016, 11). Il tema del "riparo essenziale", inteso come l'archetipica relazione costruttiva tra elemento verticale portante e elemento orizzontale portato, estremizza in qualche maniera questo rapporto, poiché sottende un processo di riduzione formale (Doimo,73) che assottiglia la distanza tra forma tecnica ed espressività architettonica. In generale quindi, ci troviamo nel caso in cui la composizione, sembra tornare al suo significato originario, parafrasando il Dictionnaire di Quatremére de Quincy: "*[la composition] consiste dans l'action d'embrasser non seulement l'idée générale, mais tous ses développements, tant dans la recherche de leur détails, de leurs convenance, de leurs rapports avec le tout, que dans les moyens qui doivent assurer l'exécution du tout et de ses parties*". Nel suo prefigurare la forma costruita, il processo compositivo ne simula il meccanismo di costruzione, rendendo necessario il paradigma operativo definibile come "composizione strutturale". Ma se in architettura la struttura è l'arte di conformare la materia in elementi, organismi e sistemi in senso espressivo, sembra avere qualche significato la conoscenza delle possibilità figurative della logica di impiego di un materiale. In questo senso, il progetto contemporaneo della forma in cemento armato, si muove su un orizzonte che ammette due polarità figurative relative alla logica costruttiva definibili come "strutture ossee" e "strutture concrete". Senza entrare nel merito di un giudizio di valore comparativo sull'appropriatezza di questi due prototipi espressivi, si proverà a sostenere in questo saggio il valore della forma del riparo nella specifica esperienza sudamericana della scuola paulista e di come questo paradigma spazio-strutturale trasformi i casi studio considerati in organismi architettonici capaci di creare spazio pubblico, al servizio della città.

L'idea di riparo nella definizione dell'organismo architettonico. Paradigmi interpretativi

Per 'riparo essenziale' si intende una idea di struttura architettonica che, per mezzo di un tetto e di un certo numero di sostegni, identifica in un luogo aperto o chiuso, ovvero una zona d'ombra. L'archetipo del riparo essenziale assume nello stato dell'arte un orizzonte metaforico, svelando il modo in cui il senso della costruzione, nel suo arcaismo, acquisisce il valore di universalità. La prima metafora riconosce una morfogenesi dell'archetipo nell'idea di spazio domestico, nello specifico della capanna, attraverso le figure di Marc-Antoine Laugier e Gottfried Semper. Per il primo autore, come sottolineato da Doimo, la capanna "è un riparo, un portico, originariamente ligneo, costituito da colonne, trabeazione e tetto, al quale si aggiungono solo in seguito le pareti murarie di chiusura laterale". (Doimo 2009, 57) Per Semper invece, l'idea della capanna è riconosciuta anch'essa nella logica strutturale del tetto a spioventi, ma con il *distinguo* tra la natura tettonica dell'intelaiatura a scheletro e quella tessile del suo rivestimento. Queste due interpretazioni in effetti sembrano concordare su un'origine domestica dell'idea di riparo come capanna primitiva o come tempio (e quindi *oikos*). In questo senso il riparo assume un valore eminentemente simbolico dove cioè l'atto primordiale della costruzione e la messa in rappresentazione della relazione irriducibile tra gli elementi strutturali, sono garanti del carattere di uno spazio.

Un secondo paradigma interpretativo proposto da Marc Dubois riconosce all'idea di riparo un valore rituale ed oggettuale nell'archetipo del tavolo: "l'uomo guarda ancora oggi con riverente timore ai dolmen preistorici, solidi cumuli di roccia, che nella loro configurazione, rimandano al tavolo archetipo. E per quanto complesse siano le varie interpretazioni che si possono dare di Stonehenge, ad affascinare l'immaginazione è proprio la forza della struttura elementare dei monoliti orizzontali e verticali. […] La sua struttura più essenziale è in relazione con il significato primario della dimora, un posto dove trovare riparo". (Dubois 1998, 112). Dubois argomenta quindi in chiave antropometrica, le possibilità inter-scalare offerte dall'idea del grande piano orizzontale, proponendo un'analogia figurativa tra il tavolo e

il progetto per un edificio a Rugen di Tessenow, la ville Savoye di Le Corbusier, la Concert Hall di Mies. L'archetipo del tavolo è ripreso da Peter Collins nel precisare le ragioni della forma delle colonne di Notre Dame du Raincy di Auguste Perret: "proprio come le gambe di un tavolo, che derivano la loro stabilità dalla rigidità della giunzione superiore, ed erano ritenute per tradizione più eleganti quando si rastremavano verso il basso, così le colonne in calcestruzzo avrebbero potuto essere conformate in modo analogo; argomentazione questa particolarmente valida quando le colonne non facevano parte di un'intelaiatura continua, ma erano[…] alte solo un piano". (Collins, 1965)

Un terzo paradigma interpretativo individua nel baldacchino una possibile metafora dell'idea di riparo. Pur senza entrare nel merito del suo valore archetipico, Marco Biraghi scrive: "Baldacchino deriva da *Baldac*, o Baldacco, che in origine indicava una stoffa proveniente da Baghdad, uno dei principali centri di produzione della seta e di altri tessuti preziosi del mondo antico. Ed era appunto un pezzo di stoffa quadrato, sostenuto da quattro aste di legno, a costituire la forma originaria del baldacchino. A che cosa questo servisse è abbastanza evidente: si trattava di un riparo, qualcosa come una tenda trasportabile sotto la quale avere un provvisorio ricovero. Il baldacchino, dunque, era un soffitto portatile, una protezione più vasta di un ombrello e soprattutto dotata di un ben maggiore valore simbolico. Chi stava sotto un baldacchino aveva e insieme assumeva una speciale dignità e importanza" (Biraghi,2016). Il senso del baldacchino è quindi sia quello di proteggere, ma soprattutto quella di dotare un luogo di un segnacolo, di una "segnatura semantica" attraverso l'azione del coprire. In questo senso l'idea del riparo assume un valore più urbano, come dimostrato nel progetto di Hilmer & Sattler und Albrech per la copertura della stazione della metropolitana di Potsdamer Platz a Berlino, dove un baldacchino in acciaio protegge le scale mobili che consentono l'accesso sotterraneo alla stazione e al tempo stesso ne segnala la presenza. Un secondo focus offerto dalla metafora del riparo come baldacchino si evince dalle osservazioni di Arnaldo Bruschi sui due cibori di Arnolfo di Cambio a San Paolo fuori le Mura e Santa Cecilia: "In ambedue il ciborio è pensato tridimensionalmente come un "baldacchino" o meglio come una ideale campata quadrata a crociera; cioè come il modulo spaziale elementare della tradizione europea romanico-gotica. […] Lo schema del partito adottato si configura di per sé un sintagma, un sistema compiuto e serrato di elementi, nessuno dei quali è dagli altri visivamente indipendente né mutabile se non mutando sostanzialmente l'insieme. […] Arnolfo tende cioè a stabilire un disegno architettonico, idealmente coerente con le esigenze costruttive, ma prima di tutto valido in se stesso, autonomo e invariabile rispetto alle dimensioni fisiche" (Bruschi, 1998). Il baldacchino quindi garantisce un'espressività dell'idea di riparo descrivendo in chiave costruttiva e al tempo stesso simbolica il sintagma della Forma, ovvero le relazioni irriducibili tra gli elementi trave-pilastro-impalcato, la loro gerarchia topologica, il loro costituirsi come "unità autopoietiche" (Soler, 2016, 87) capaci di esprimere attraverso l'idea tettonica del montaggio l'unità dell'organismo architettonico.

Gerarchie topologiche degli elementi strutturali nella definizione del tetto piano. Forme di struttura e strutture di forma

Le caratteristiche generali delle gerarchie strutturali, con particolare riguardo ai sistemi strutturali orizzontali in oggetto del saggio, sono suscettibili di un valore topologico dato dagli elementi di cui sono composti: "è utile definire gli elementi secondo la posizione che occupano all'interno del sistema gerarchico. Tipicamente è la posizione degli elementi al più basso livello della gerarchia che definisce le posizioni necessarie per i supporti verticali. Se inizialmente viene selezionato il sistema dei supporti verticali, il loro tipo e la loro geometria suggeriscono informazioni relative all'appropriato sistema strutturale orizzontale da utilizzare e la sua migliore organizzazione gerarchica. Di solito, nessuno dei due sistemi definisce il progetto dell'altro, ma vengono progettati assieme in modo interattivo." (Schoedek, 448) L'archetipo del riparo essenziale e il suo statuto elementare è costituito secondo una definizione propriamente strutturale da un sistema a due vie, che considera quindi un'orditura primaria ed una secondaria di travi che insistono su una teoria di pilastri. All'interno di questo sistema strutturale elementare è possibile riconoscere due categorie topologico-strutturali: il

sistema orizzontale a due livelli, costituito da pilastri ai quali sono sovrapposti i collettori primari costituiti dalle travi; il sistema orizzontale a tre livelli, costituito da pilastri, collettori primari ovvero le travi di bordo e collettori secondari, rappresentati invece da una serie collettori secondari subordinato al primo ordine di orizzontamenti.

Si può sostenere che a queste due categorie strutturali corrispondano due diverse declinazioni del tema della costruzione del riparo che fanno a capo a due differenti principi figurativi. Il primo individua il suo archetipo nel sistema trilitico primitivo del dolmen, dove ad ogni trave (pietra orizzontale) corrispondono due pilastri, (pietre verticali). Il tetto viene costruito quindi attraverso l'iterazione, in una sequenza paratattica, della figura del trilite. Questa prima opzione può corrispondere nella trasposizione in cemento armato a due tipi di figure strutturali: quella che per "mimetismo" strutturale adotta l'idea di montaggio lapideo scomponibile in elementi, e quella del telaio che fa corrispondere alle proprietà monolitiche del calcestruzzo la figura del portale o del telaio, ovvero di un *continuum* strutturale tra elemento verticale ed elemento orizzontale.

La seconda categoria strutturale del sistema orizzontale a tre livelli rimanda a un'idea tettonica del riparo che contempla un maggiore livello di complessità, rappresentato da un processo di montaggio che si dipana in tre fasi di stratificazione degli elementi, scindendo il grande piano orizzontale in una doppia orditura di travi. Si crea quindi una distinzione topologica nella quale le travi che definiscono il perimetro del tetto assumono il più alto grado gerarchico nella disposizione mentre quelle che attraversano lo spazio della campata strutturale assumono un ruolo subordinato. E' questa configurazione strutturale che corrisponde all'idea del tetto trabeato, il tetto proprio del tempio dorico, in cui la trave primaria che definisce il perimetro corrisponde alla trabeazione, la trave secondaria al triglifo. Nella trasposizione in cemento armato notiamo due differenti ricadute figurative: nella prima, quella "mimetica" il sistema perde questa stratificazione topologica rappresentata dal binomio trabeazione/ triglifo, poiché i collettori primari (travi di bordo) si trovano in una condizione complanare rispetto a quelli secondari (travetti); nella seconda, l'infittimento delle travi secondarie, l'equivalenza gerarchica rispetto a quelle primarie e la caratteristica di continuità monolitica genera la figura del graticcio cassettonato, del tetto come diaframma.

Attorno a questa doppia idea tettonica del riparo essenziale, nel Moderno, e in particolare nel passaggio alla tecnica costruttiva in cemento armato, si assiste alla crescente tendenza che porta a concepire il grande tetto piano come l'elemento dominante della composizione dell'organismo architettonico in una dimensione urbana. La possibilità che proprio questa tecnica costruttiva possa aver sollecitato tale evoluzione morfologica è suggerita dal Collins, quando parla di uno dei pionieri dello sviluppo elastico del calcestruzzo armato, François Coignet: "e già egli intravide le ampie possibilità di ciò che era destinato a diventare un elemento fondamentale nell'estetica del calcestruzzo armato: il tetto piano. Un vantaggio completamente nuovo del calcestruzzo, veramente senza precedenti, è che la copertura di un teatro potrebbe diventare una vera e propria piazza pubblica." (Collins 1965, 16-17)

L'idea del riparo essenziale come elemento generatore di spazio urbano trova una sua forma compiuta nel concetto di *abri souverain* di Auguste Perret. "Variando il proporzionamento dei sostegni, il ritmo della loro successione e il rapporto tra sostegni, copertura e parete, si determina il carattere del recinto: l'esterno può fluire al di sotto della copertura, il recinto può lasciar trasparire l'interno. Il ruolo gerarchico affidato alla copertura è espresso dalle forme della costruzione: tutte le parti dell'edificio, necessario all'uso a cui è destinato, le sono letteralmente sottoposte". (Moccia, 2012, 32) L'architetto francese mostra quindi la possibilità di convivenza per il progetto moderno di due caratteri dell'archetipo del riparo: il primo si sviluppa sull'asse sintagmatico della relazione tra gli elementi strutturali che costituiscono il riparo essenziale, il secondo sull'asse sistematico dell'organismo architettonico e della relazione interno-esterno. Un'idea che tiene insieme spazio e costruzione in un legame di interdipendenza.

L'archetipo del riparo nella scuola paulista

Sul potente archetipo del riparo essenziale si innesta la riflessione dell'*Escola paulista* a

partire dal secondo dopoguerra. Un vasto repertorio di opere costruite in questo periodo è effettivamente incentrato sulla semantica dello spazio pubblico individuato da un'unica copertura orizzontale, che attraverso la definizione di un grande piano d'ombra definisce il carattere di un luogo. L'idea del riparo sovrano torna in modo prepotente nell'analogia con la relazione stabilita da Perret tra la condizione permanente, costituita da una struttura garante del carattere e dell'espressività dell'edificio e una condizione transitoria, determinata dal programma che la forma deve contemplare. In questo senso, una costante che accomuna tutti i progetti della scuola paulista è l'idea che la grande copertura possa assorbire qualsiasi configurazione interna, sia essa una scuola, un museo, una casa. Il tetto non è più il piano astratto tipico dell' *international style*, ma acquisisce spessore e con esso il carattere e la natura tettonica. Questo approccio alla costruzione della scuola paulista, riconosce in generale, il principio della definizione simultanea della struttura spaziale e della struttura resistente dell'edificio (Mahfuz,2005). Proprio in virtù di questa stretta coincidenza tra struttura e spazio, che propone secondo "proporzioni pre-colombiane" (Frampton, 2010) l'archetipo del riparo essenziale, è possibile tentare da un lato comprendere in che modo la relazione tettonica tra gli elementi sintetizzati nel dispositivo trave-pilastro incidono sul carattere dello spazio, dall'altro le figure strutturali che concorrono all'espressività dell'organismo strutturale, le quali derivano dalla composizione di questi stessi elementi. Con riferimento al paragrafo precedente, si intende proporre in questo saggio l'analisi di due opere che adottano le due categorie strutturali presentate, (sistema orizzontale a due livelli e sistema orizzontale a tre livelli), esplorandone le possibilità tecniche, figurative, spaziali e urbane.

Il tetto come trama. Il Clube XV a Santos di Francisco Petracco e Pedro Paulo de Melo Saraiva (1964)

Il clube XV degli architetti Francisco Petracco e Pedro Paulo de Melo Saraiva, realizzato a Santos nel 1964, si inserisce nella ricerca che la scuola paulista porta avanti sull'idea del riparo e sulle sue possibilità di definizione dell'organismo architettonico. Si tratta di un circolo sportivo e ricreativo in prossimità della litoranea oceanica, in cui il programma prevede la compresenza di spazi collettivi e ricreativi e luoghi attrezzati per lo sport. Dalla relazione di progetto, si legge come l'obiettivo dei progettisti è "buscou-se uma solução que, na forma maior, definisse os espaços com generosidade, apresentando ao mesmo tempo proporções que lhe conferissem caráter e dignidade".

La soluzione strutturale prevista, adotta come unità minima un portale in cemento armato costituito da una trave con luce da 33 metri, bilanciata da due sbalzi di 11 metri. Tale trave presenta un'altezza che oscilla tra i 4 e i 6 metri e appoggia su due pilastri rastremati con spessore di 30 centimetri. Questa soluzione oggettivamente impegnativa è giustificata dalla necessità di "distribuire la minore concentrazione di carico nelle fondazioni", proprio perché la natura del suolo, nel lotto considerato, è sabbiosa e non si presta pertanto all'impiego di fondazioni continue. Lo schema generale quindi prevede la scelta di una "struttura concentrata", che prevede "il progetto di pochi elementi molto grandi adattati a sopportare i carichi" (Schoedek 2008, 460). Osservando il prospetto del portale che costituisce l'unità minima strutturale, è possibile notare inoltre come la trave presenti sezione variabile, assecondando un'operazione di riduzione della quantità di materiale impiegato lì dove il momento flettente risulta massimo. In questo caso la costruzione del tetto si basa sulla reiterazione paratattica dello schema trilitico, introducendo un intervallo ogni due metri. Da un punto di vista archetipico si tratta di una sorta di trasposizione in cemento armato dell'idea di dolmen che invera l'arcaica e primitiva relazione di una grande pietra orizzontale poggiata su due grandi pietre orizzontali.

La reiterazione del prototipo strutturale trilitico costituisce pertanto la prima azione compositivo-costruttiva che determina il carattere dell'organismo architettonico attraverso la figura del grande tetto. Quest'idea paratattica di ripetizione della figura del "dolmen" presenta inoltre una significatività rispetto alla proporzione degli elementi della campata strutturale e dalla conseguente scelta del verso secondo il quale gli elementi vengono disposti. Si configurano infatti elementi estremamente assottigliati e tesi, delle lame di spessore esiguo (circa 30 centimetri) rispetto alle dimensioni generose della lunghezza e larghezza.

L'espediente formale e tecnico al tempo stesso determina un'idea tessile di tetto come trama, dove le figure delle grandi travi costituiscono da un punto di vista della gerarchia topologica degli elementi le linee essenziali che orientano lo spazio. Come in un telaio da cucitura, la trama ricavata dalla ripetizione della campata strutturale tesse orizzontalmente l'edificio, mentre l'ordito è costituito da una serie di solai trasversali, che piegandosi ne determinano la verticalità. Tali solai funzionano anche da elementi di controvento che compensano l'eccezionale sottigliezza dello spessore della struttura principale.

Il valore urbano di questo grande tetto tessile è garantito, per contrappunto orizzontale, da un grande basamento che ricalca il perimetro del lotto di progetto. È interessante la relazione tra questi due grandi elementi della composizione, entrambi a carattere orizzontale, innanzitutto da un punto di vista figurativo: il basamento di carattere plastico e introverso, il tetto costruito per discontinuità elastica ed estroverso. Tutto l'edificio si riduce nel dualismo tra questi due elementi. Nella triade tettonica attacco al suolo, elevato, attacco al cielo è proprio l'elevato ad essere figurativamente eliminato in quanto il basamento si innesta, in sezione, inglobando quasi la totalità dell'altezza dei pilastri. Il proporzionamento delle altezze dei due elementi orizzontali prevede un rapporto copertura-basamento di 2:1, determinando gerarchicamente il tetto come il vero luogo abitato. Abitare il tetto dunque, muoversi attraverso la fitta trama delle travi, stare sul dorso e sotto il ventre del grande riparo.

Il tetto come diaframma. La Facoltà di Architettura a San Paolo di Joao Baptista Vilanova Artigas (1961)

La sede della facoltà di architettura di San Paolo rappresenta oggi un'idea paradigmatica di intendere, attraverso l'architettura, un preciso programma pedagogico dove l'edificio stesso, nel suo carattere monumentale, si rivela come primo elemento educatore (Biraghi e Pierini, 2016). La forte necessità rappresentativa è quindi il primo dato attorno al quale si snoda il processo compositivo, che Artigas sceglie di collocare all'interno di una logica nella quale la ricerca dell'espressività e del carattere coincidono con una riflessione sul senso tettonico della forma. È del resto lo stesso Artigas, quando si interroga sulla sua opera, a dichiarare di aver immaginato una struttura che ha il tempio classico come riferimento archetipico. La soluzione strutturale prevede dunque la definizione di tre ordini: procedendo dall'esterno verso l'interno, il primo è quello che costruisce la peristasi dell'edificio, il secondo sopporta l'articolazione dei solai che si stratificano internamente, il terzo definisce il riparo vero e proprio.

Il primo ordine è definito da quattro travi-parete che poggiano su un peristilio di (2x5 colonne) L'altezza consistente delle travi-lastre (di 8m sui primi tre lati e di 6m sull'ultimo) confrontata con quella pressoché equivalente dei sostegni, determina la necessità di introdurre nella mezzeria del pilastro a base troncopiramidale un costolone trapezoidale. Tale costolone allarga la base del pilastro che in sommità si riduce notevolmente contrastando l'instabilità al carico di punta generato dal considerevole sforzo di compressione portato dalla mole delle travi. Da un punto di vista figurativo si ottiene una colonna in forma di clessidra che nega la presenza di un fusto ma che è invece costituita dalla convergenza in mezzeria del costolone, (figurativamente un capitello), e della base troncopiramidale del pilastro. Le travi invece corrispondono a un'idea di trabeazione ciclopica, che mette in rappresentazione, attraverso la definizione del perimetro dell'edificio, l'occultamento del grande riparo interno. Il secondo ordine è costituito da *pilotis*, di ordine minore che intercettano le travi piatte dei solai nervati, allineandosi alle due maglie strutturali degli ordini maggiori. Si costituisce così una sorta di sistema strutturale- intervallo che dimezza la luce lungo la quale sono tesi i grandi invasi perimetrali, sfruttando l'idea del telaio come principale esito figurativo. Il terzo ordine si incarica invece di portare il tetto, costruito come un grande cassettonato sostenuto da due file di otto colonne cilindriche. Il riparo si costituisce come una struttura a graticcio caratterizzato da un legame di equivalenza dimensionale tra i due versi delle travi, le quali presentano una sezione a "I", per rispondere agli sforzi di torsione, sulla quale si innestano due ali a "V" che invece creano un invaso di luce a spessore troncopiramidale. Kenneth Frampton definisce questa copertura come un "diaframma"

strutturale "in cui le travi e i pilastri in cemento che supportano il tetto, sono trattati come se fossero monolitici" (Frampton, 2010, 4) La gerarchia di questi tre ordini riflette il senso spazio-strutturale dell'*abri souverain* immaginato da Auguste Perret per il *Musèe des Travaux publics,* dove l'architetto francese fa corrispondere all'ordine che porta il grande tetto, per "ritmo di contrappunto" (Collins, 255) le membrature strutturali gerarchicamente subordinate e quindi di altezza minore, al di sopra delle quali vengono tessuti i solai intermedi. Da un punto di vista spaziale questa operazione compositiva offre la possibilità, tanto in Perret quanto in Artigas, di poter abitare il "ventre del tetto", in una continuità visiva pressoché totale. Ma se in Perret, l'ordine del riparo sovrano definisce il perimetro del corpo di fabbrica, regolando attraverso una *facies* monumentale il rapporto interno/esterno, in Artigas l'" ordine gigante" è introiettato verso il centro e ne scandisce il grande atrio a tutt'altezza. Il perimetro esterno dell'edificio è invece passante, punteggiato soltanto dalla esile peristasi della trabeazione. Ne risulta quindi che a sistemi strutturali concettualmente indipendenti, corrispondono gradi di attraversamento dello spazio diversi: la peristasi che definisce un luogo di deambulazione esterno su cui si affaccia il piano superiore, l'ordine "minuto" che porta le aule e i laboratori dove la spazialità è più compressa e stratificata, l'ordine "gigante" del tetto dove lo spazio drasticamente si decomprime nella grande piazza interna e orienta in verticale le sotto unità spazio-strutturali. La sede della FAU dimostra dunque la possibilità di creare, attraverso un'idea generosa di architettura, un edificio "poroso", che ammette cioè un'ambiguità tra introversione ed estroversione dell'organismo architettonico. Questa ambiguità risponde a una natura tutt'altro che organica, ma che ricerca il suo senso nella "quiete inerziale" della relazione tra le parti identificate dai tre diversi sistemi strutturali.

Conclusioni

I due progetti presentati tendono quindi a costituirsi come paradigmatici attorno al tema dell'" costruire il tetto", traducendo in forma costruita un preciso schema strutturale. C'è in questo dato un significato universale, che ritroviamo nella bellezza delle piramidi che risiede, per Mendes da Rocha, nella coincidenza con il meccanismo stesso che le costruisce, ovvero la progressiva rinuncia alla materia man mano che si elevano al cielo (Gandolfi, 2016, 37). È un dato che rende evidente come sia impossibile pensare alla Forma al di fuori della sua costruzione, intesa come sublimazione della tecnica. In questo processo conoscitivo, che porta alla coincidenza tra idea e costruzione, Nervi rileva come si tenda al raggiungimento di una soluzione-tipo che risponde con estrema precisione alle leggi immutabili della fisica, man mano che cresce l'importanza statica di un'architettura. (Nervi 1951,145) I casi presentati aderiscono certamente a questa idea di "soluzione-tipo" ma mostrano come questo equilibrio sia tutt'altro che definitivo. Esso offre piuttosto una inequivocabile direzione espressa dall'intreccio tra due mani: quella della forma e quella della struttura, dell'espressione e del significato, dando vita alla bellezza della cosa costruita.

Figure 1. Artigas 1.

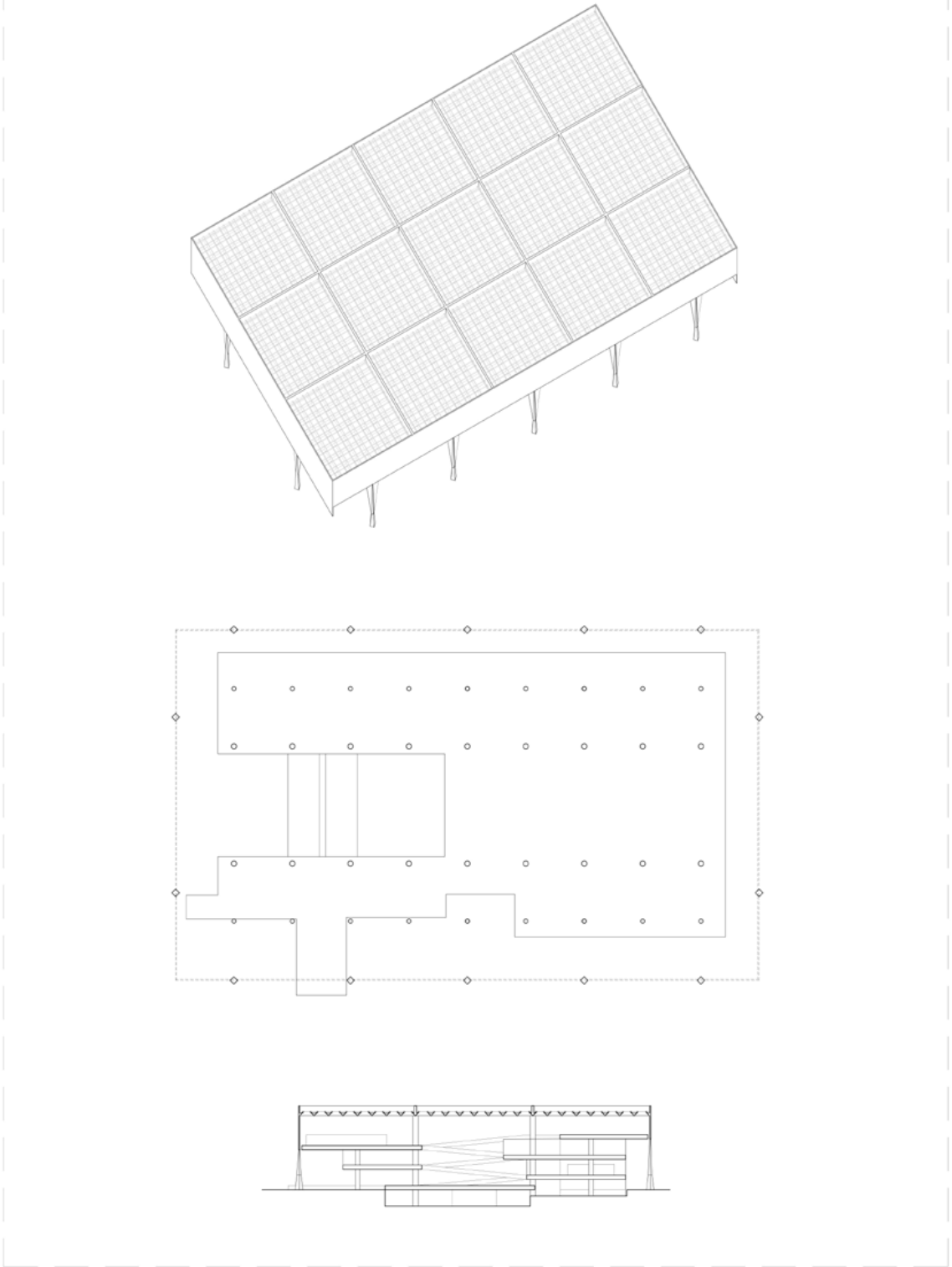


Figure 2. Esploso Artigas.

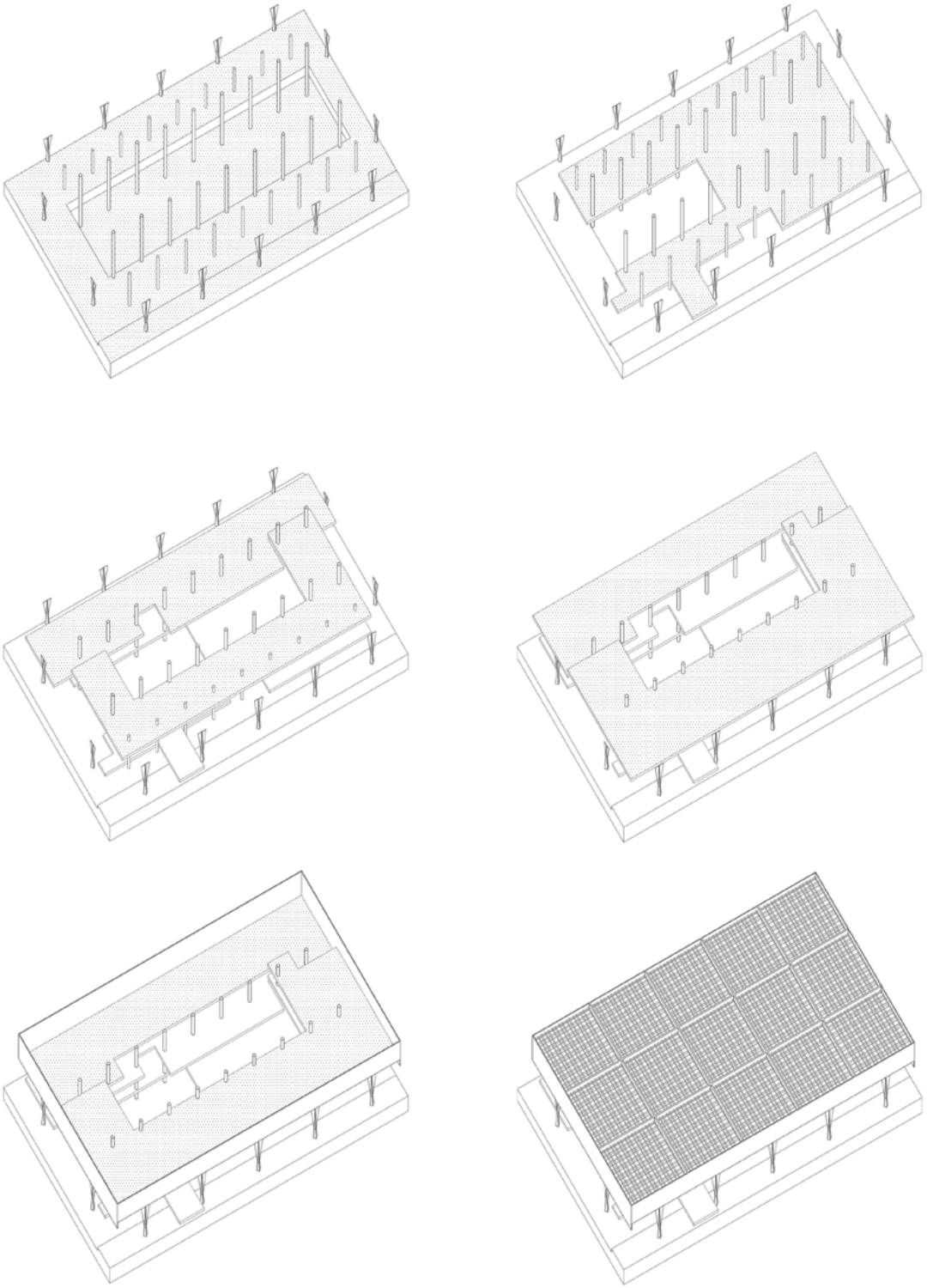


Figure 3. Esploso Petracco.

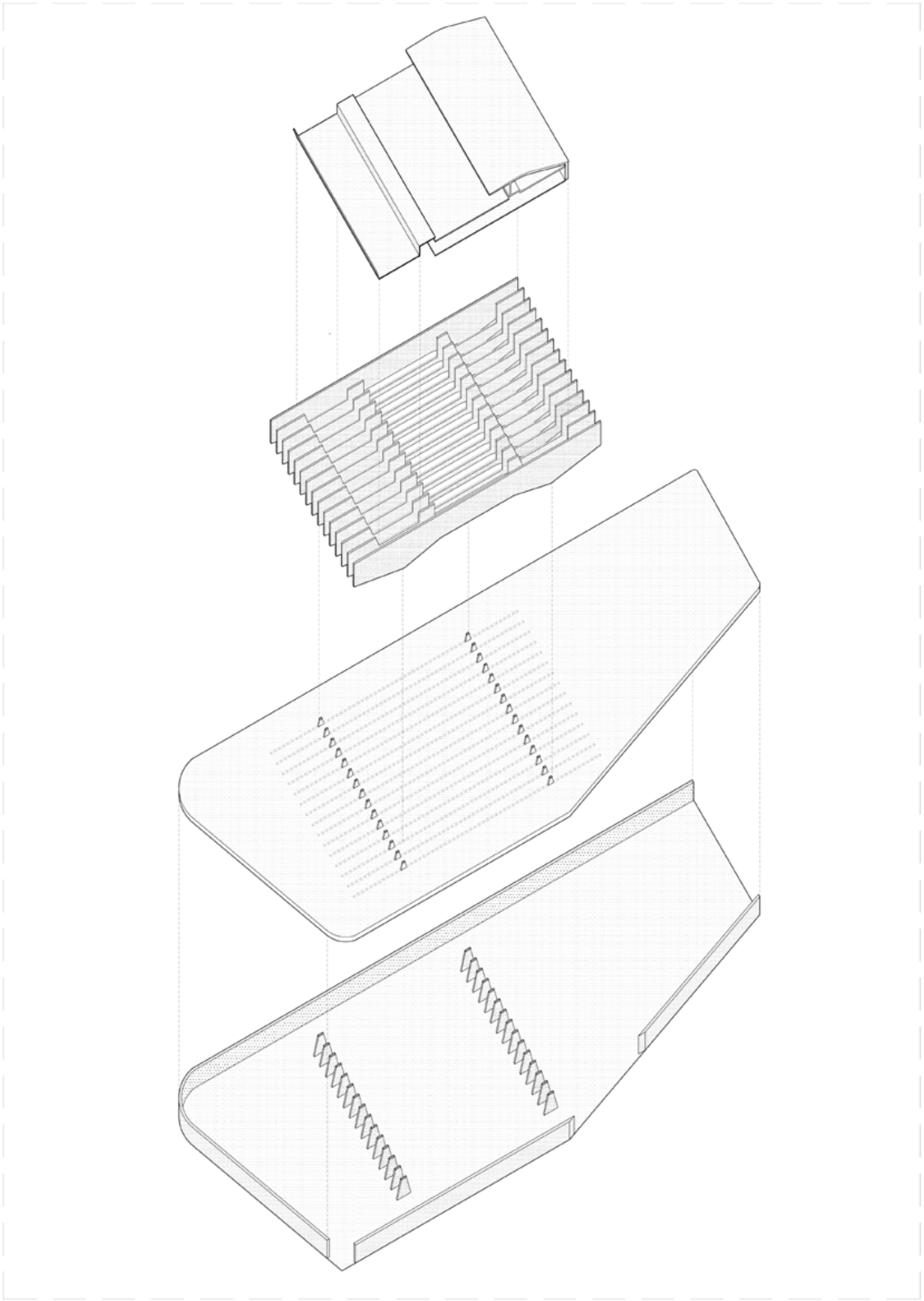
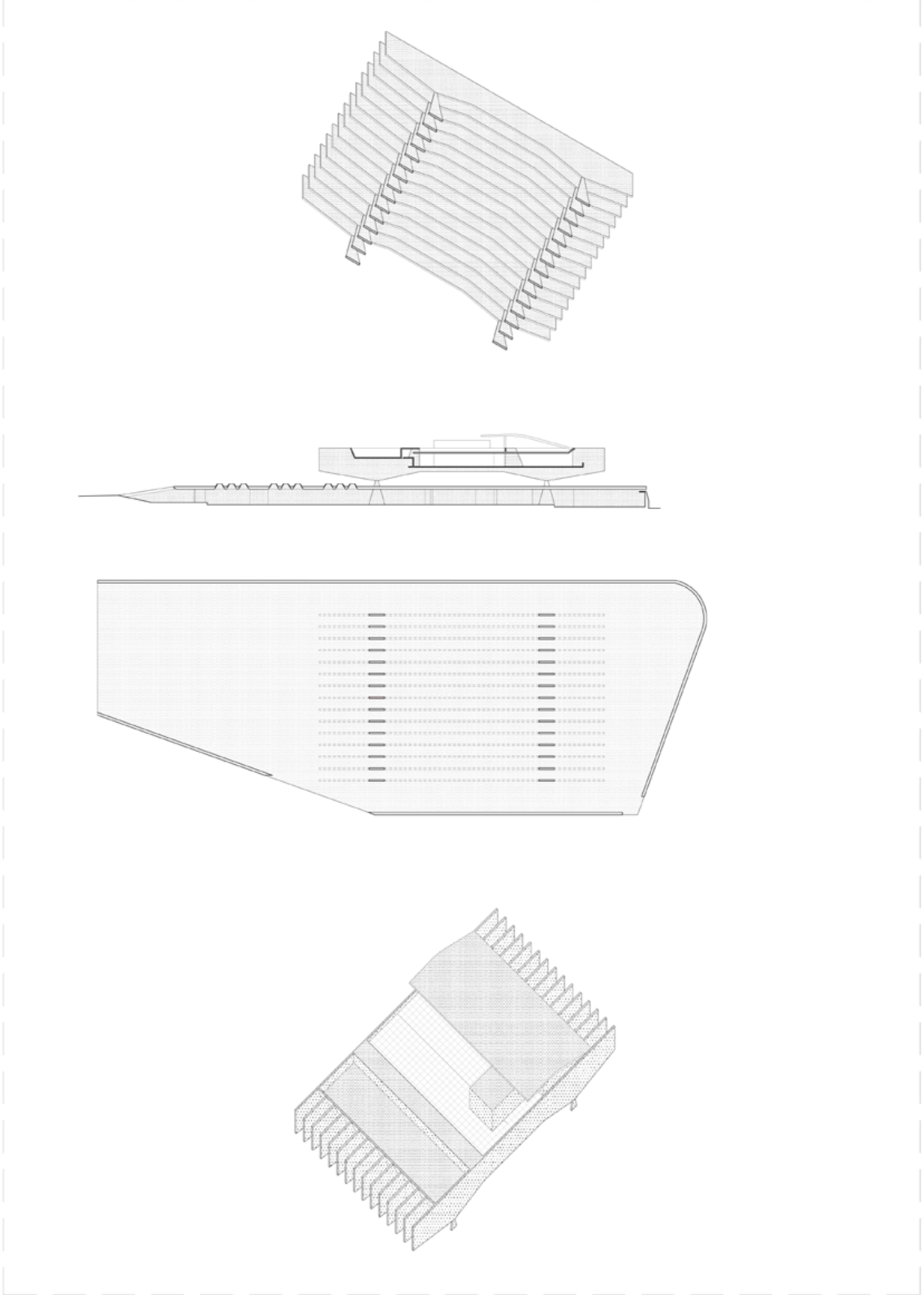


Figure 4. Esploso Petracco 2.



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Design Research for a New School of Health Professions at NYIT, Old Westbury, Long Island, New York

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Keywords: *Didactic, Architectural Design, Double Curvature, Stereotomy, School Building*

The paper is a report of a research started in the development and supervision of a thesis and developed in the academic year 2017-2018 within the School of Architecture and Design of the NYIT. The research project is focused on the relationship between "design and health" and in particular on the project of the New School of Health Professions within the University Campus of the New York Institute of Technology located in the Incorporated villages of Brookville and Old Westbury, Long Island, New York. In 1965, NYIT established the Old Westbury Campus. The NYIT Old Westbury Campus is the site of several former North Shore/Gold Coast estates. The new building, within the University Campus subject to the constraint of the "Georgian Style", is a building that breaks with tradition and represents research into innovative shapes and materials. The project questions the relationship between architecture and nature and in particular between existing buildings on the campus and naturalistic conditions on the border.

The project reflects and creates new solutions for a contemporary building expressly designed for health and educational and didactics for health professions. The construction technology offers new innovative applications for traditional materials, in particular the building is completely covered with granite panels (reinforced with glass fiber) thin double-curved to have no solution of continuity to the external building envelope.

Introduction

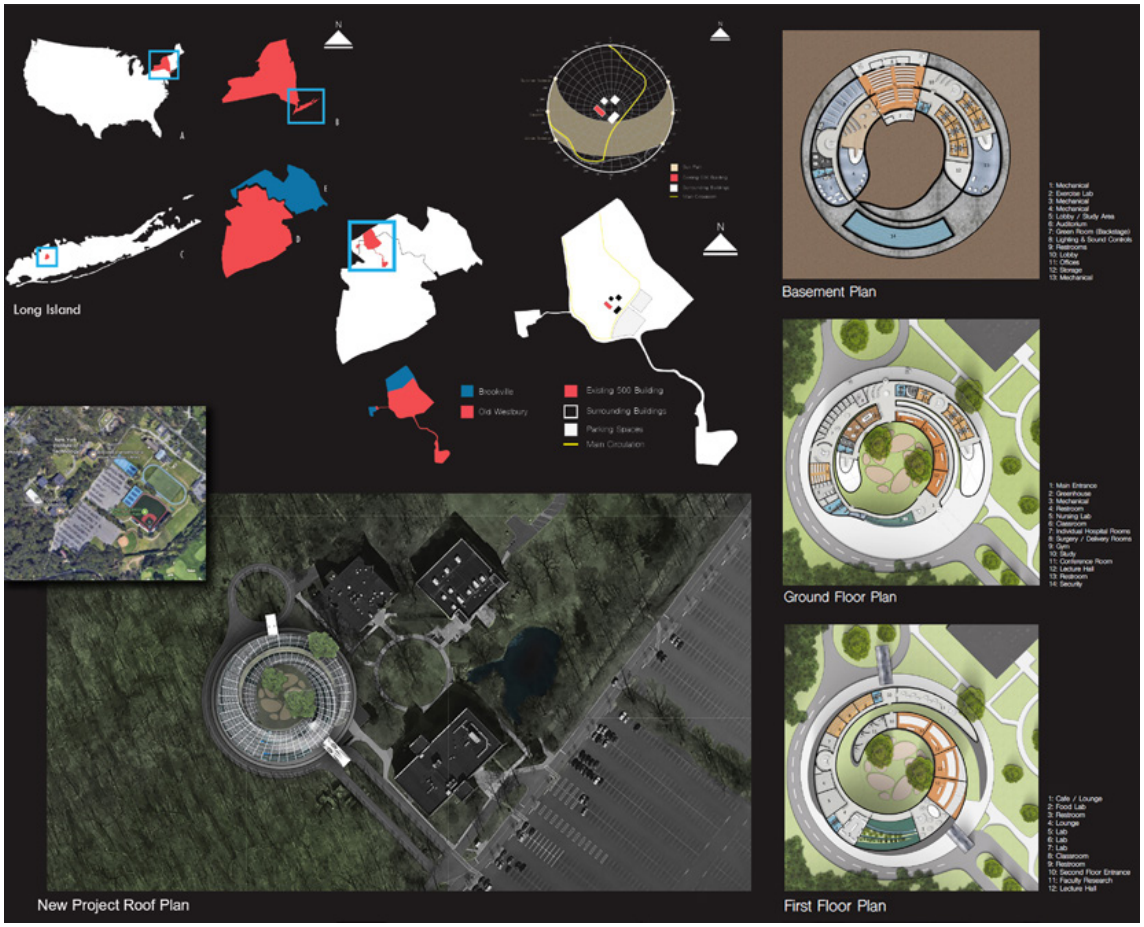
The paper is a report of a didactic research, written by the students and the professor , started in the development and supervision of a thesis and developed in the academic year 2017-2018 within the New York Institute of Technology's School of Architecture and Design. The research for the project focused on the relationship between "design and health". The New York Institute of Technology's campus is located in the incorporated villages of Brookville and Old Westbury, Long Island, New York. In 1965, NYIT established the Old Westbury Campus on the site of several former North Shore/Gold Coast estates. The new building proposal is subject to the constraint of the traditional "Georgian Style", as required by the villages. It breaks this tradition and represents research into innovative shapes and materials. The project questions the relationship between architecture and nature and in particular the spaces between existing buildings on the campus and the naturalistic conditions on the border. The project reflects and creates new solutions for a contemporary building expressly designed for health, education and didactics for the health professions. The construction technology offers new innovative applications for traditional materials, in particular the building is covered with thin double-curved granite panels (reinforced with glass fiber) to have no solution of continuity to the external building envelope.

Methodology

For the first time in its history, the NYIT School of Architecture provided a thesis option for students to develop a project with the potential of executing it in reality. The idea being that architecture students take on the project which started as a casual conversation between Sheldon Fields, Ph.D., RN, FAAN, dean of NYIT School of Health Professions, and Maria R. Perbellini, M. Arch., dean of NYIT School of Architecture and Design, over lunch. Re-envisioning the building has been one of Fields' main goals since he joined NYIT in 2017; it's become a focal point of the university's strategic plan under NYIT President Hank Foley, Ph.D. Thus the School of Architecture and Design, in collaboration with the School of Health Professions, offered to graduating thesis students the possibility to take on a unique opportunity in framing, from many points of view, the question of how a new School of Health Professions can be best developed for NYIT at the Old Westbury Campus. The goal being to shed light holistically on all aspects of such an endeavor and to deepen the design research where necessary.

Students formed specified research groups for different areas of design and health and along with the progression of the class split off individually to study topics of interest. The site of the project is where the campus' 500 Building currently resides. The 500 building is one of four buildings dedicated specifically to the study of health professions. Parking for the building is shared in a large lot off of the campus' main road. Built in 1966, this traditional brick masonry building is one story with 18,000 square feet. The buildings program is comprised mostly of offices and classrooms on either side of a bisecting corridor. This design is one standard as a "lecture style" building demonstrated in the similar design of multiple buildings located across the campus. This standardization lacks the consideration for the teaching methods and program requirements of the interdisciplinary health professions schools. This design also has limited access to natural lighting with the central corridor having little to none at all. The new building proposals were not only to create an identity for New York Institute of Technology, but also to include spaces designed specifically for the needs of the health professions school and to create harmony with the natural and anthropic surrounding space. The basic symmetrical building design neglects the function of the interior rooms by plugging the program in without having the rooms influence one another and the building form. Pieces of program, such as simulation labs, are squished into the same space provided for a generic writing course lecture hall. There is not nearly enough space or accomodation for the different equipment needed for each program. The School of Health Professions at New York Institute of Technology provided a program requirement list to the students in the thesis sections working on design proposals for the new building in the form of questionnaire answers. The questionnaire consists of questions regarding the types of classrooms, lecture

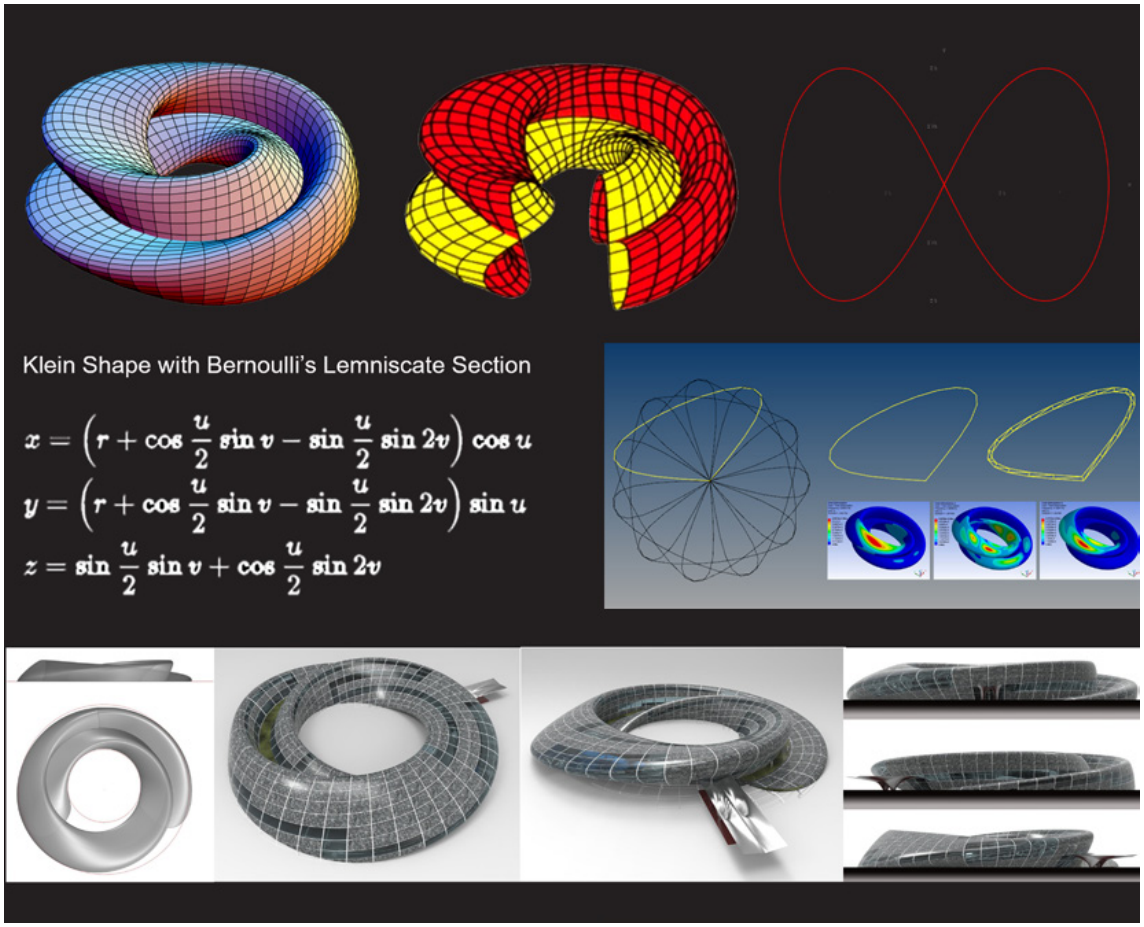
Figure 1. Aerial view of site and functional plans showing the proposed building form in relation to the parking lot, woodland, and existing Health Professions Buildings.



halls, offices, and storage spaces that would be required for each Health Profession major. Other questions involved the types of equipment required, how many students were in each program, what the usage of each space was in correlation to the time of day, and what the 'ideal' space for each piece of program would be. The answers were provided by the administration of each majors department. The program requirements provided for the different curriculums included specific laboratories, practice spaces, multi-purpose spaces, different sized lecture halls, and storage spaces for the different majors educational equipment.

Using the required square footage derived from the New York State Department of Education capacity requirements combined with the required program from the NYIT Department of Interdisciplinary Health Science, the class was able to develop the proposed possible program square footage minimum and maximum requirements (NYSED, 2001). With this information, the class determined that the required program needed for the New School of Health Professions is slightly more than double the size of the current site boundary. These predicting calculations were not including the square footage of circulation, mechanical, or other service spaces. With this information, the class has concluded that if the site boundaries are respected, as required by the village of Old Westbury, the building must be at least 3 stories tall in respect to the surrounding buildings (Regulations, 2018). The campus itself falls under two incorporated villages for zoning; The village of Old Westbury and the village of Brookville (Regulations, 2018). The specific site, however, is completely under the jurisdiction of the Village of Old Westbury. Established in 1924, The Village of Old Westbury is known for their strict rules of new construction; more specifically in this zone, their requirement for "Georgian Style" architecture. The Georgian Style uses many of the hallmarks of renaissance design

Figure 2. Klein Shape, mathematical definition and Bernoulli's Lemniscate section for the geometrical definition of New School of Health Professions Building.



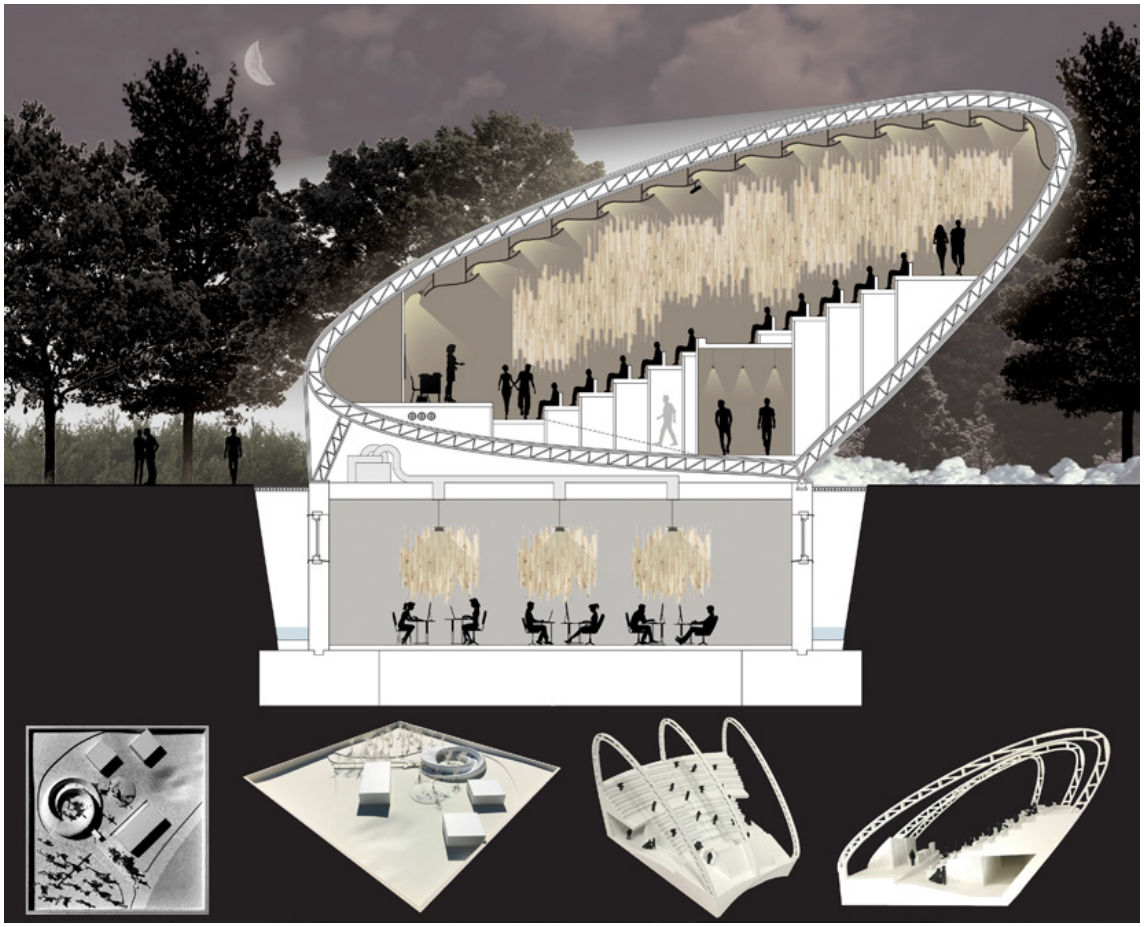
such as symmetry with building masses, doors, and window placements. Georgian buildings are often constructed out of wood with a brick exterior (Tardiff, 2016). Sometimes stone or stucco is applied to the exterior shell (Tardiff, 2016). With an established village such as Old Westbury, tradition is very important. However, with the incorporation of new technology there can be a strong compromise.

The paper presents only one of the three projects developed by the students during the entire 2017-2018 school year. The project was developed with the professor Giuseppe Fallacara and the thesis class composed of seven students: Louis Bruni, Carlos Chica, Arkadiusz Chrobak, Nicole Fatone, James Giustiniani, Santiago Molina and Vanessa Rocha. In class team work was simulated as a professional architecture studio in order to simulate a real work activity. The project is significant both from the didactic-speculative and technical-professional point of view, and presents many innovations in research and architectural experimentation. The project is a specific geometric shape, half Klein Shape, imagined as a granite shell inserted in to the surrounding nature.

By using a mathematically created form, the Klein shape, provided by Professor Fallacara, the students worked on one such proposal that included all the different elements of program required by the School of Health Professions and that broke the typical Georgian style building through its form and construction methodology. "The best known and important physical objects in topology are the so-called: Möbius strip and Klein Bottle: both due to nineteenth century mathematics.

They represent all the characteristics of topological surfaces as absolutely continuous surfaces, without any interruption, coming from transformation and deformation processes of a flat starting surface" (Fallacara, 2006). Due to its relatively abstract shape, the buildings'

Figure 3. Section and 3D printed models showing the cross section of the Klein Shape, the maximized acoustical design, and the placement of nature in the interior courtyard.



proposal goes against the typical lecture buildings on campus, and sends the message of a new approach to the campus' urban fabric and the approach to designing different educational facilities.

The class consolidated and economized the program to fit the form of the proposal. In the proposal, there are four different types of classrooms: labs, classrooms, lecture halls, and simulation spaces. All of the spaces were designed to be interdisciplinary and to provide storage for the different required equipment, as requested in the questionnaires. The program is organized to maximize natural light in spaces such as classrooms and specific labs. Around each of the three main vertical circulation cores is access to facilities and student storage, study, and lounge areas. In the basement there are mechanical spaces directly servicing the spaces above. In addition to the mechanical spaces the basement houses a large scale auditorium for campus events, a cistern to store rainwater that would otherwise flood the building, and some faculty offices. On the main level are the remainder of the faculty offices and the access to the lecture halls, simulation labs, locker rooms, and greenhouse that runs off of a hydroponic system using the water stored in the cistern.

The greenhouse and cistern allow for an environmentally conscious collection and use of the storm waters and snow that plague Long Island throughout the year. The function of the greenhouse programmatically is to encourage students to learn how to grow and maintain produce. There is a kitchen lab for the students to use in relation to the greenhouse. On the second level are the remainder of the classrooms and labs, the cafe, and faculty research. This new building breaks the existing typologies of the campus and also provides the specific spaces the school needs. The spaces are more program specific and accomodate for the overlapping majors that already exist in the school.

Not only was attention paid to the need for spaces to accommodate the different program requirements and sustainability practices, but the class conducted research on the quality of interior spaces through color and materiality. The existing education building's interior was painted solely off-white in every room with the same colored linoleum tiles, only the bathrooms had a change in the tiles and wall cladding.

Research done by the students found that colors perceived on an object can be affected by reflection of objects of different colors (Doty, 2017). The use of colored light also affects the perceived color of an object (Giesel and Gegenfurtner, 2010).

Yellow light sources changes the color perception the least, and red light sources change the color perception the most (Giesel and Gegenfurtner, 2010). A person's feelings in reaction to a color are often deeply personal and rooted in their own experience or culture (Mahnke, 2012 and Nassau, 2018). It is important to pay attention to the use of different temperatures of lighting when lighting interiors due to the effects it has on people's concentration and relaxation (Park, Ha, Ryu, Kim, Jung, 2013). Colors can be used to evoke certain emotions or moods (Mahnke, 2012). According to authors Bosch, Cama, Edelstein, and Malkin in the report 5 Design Considerations When Selecting Color for Healthcare Facilities, a study including 68 patients as subjects resulted in a "preference for lighter hues" in the rooms' over all design (Bosch, Cama, Edelstein, Malkin 2018). The report then continued on to discuss the different uses of color in regards to different types of Healthcare Facilities occupants. They discussed the importance of creating comforting spaces for those undergoing the stress of working at, staying in, and visiting those in a Healthcare Facility; "Neutral palettes with soft natural tones work best for patient rooms and can have aid in calming patients and their family members.... palettes with strongly contrasting colors in these spaces are known to cause strain for occupants" (Bosch, Cama, Edelstein, Malkin 2018). The authors discuss that the use of an opposite pallet consisting of stronger and brighter colors would bring comfort to the employees of the healthcare facility (Bosch, Cama, Edelstein, Malkin 2018)."Brightly lit rooms with stronger color palettes can help those needing a quick break to stay fresh and lively. Darker, subtler break rooms with softer lighting are preferred by many workers looking to rest for longer periods of time."(Bosch, Cama, Edelstein, Malkin 2018). The importance of the coloring in operating rooms was also mentioned. This information is important, by providing similar color palettes in simulation laboratories and other professionally specific classrooms to those used in postgraduate facilities, the students will leave with an association of the spaces. The report mentions the techniques of using blues and greens in operating rooms instead of white to counteract the after images produced from staring at red blood for extended periods of time during procedures (Bosch, Cama, Edelstein, Malkin 2018). "With white walls, surgeons would constantly see blue-green spots when looking away from the operating table" (Bosch, Cama, Edelstein, Malkin 2018). At the conclusion of the report 5 Design Considerations When Selecting Color for Healthcare Facilities, Bosch, Cama, Edelstein, and Malkin, state that although there is no scientific evidence to back up the ideas behind color psychology the "Natural colors, such as green, blue, or brown, are seen as calming…" (Bosch, Cama, Edelstein, Malkin 2018) and that "Red, while a stimulating color especially for creative types, is often avoided in facilities that treat neurological conditions or patients suffering from ailments such as post-traumatic stress disorder." (Bosch, Cama, Edelstein, Malkin 2018). As an alternative to painting, the use of exposed wood as cladding on an interior surface has been proven to reduce a person's stress levels and heart rate (Chua, 2015). The presence of wood finishes in an interior space replicate the phenomenon, psychologically, of being outdoors, thus providing positive benefits (Chua, 2015). Round surfaces appear less "threatening" (Jaffe 2013) and thus are more comforting than rectilinear enclosures. As mentioned previously, the skin of the design proposal is composed of double curvature panels of granite and glazing. The stone is intended to blend in with the natural environment. The different departments expressed a wish for there to be calming and focus-enhancing colors used in the different parts of the building. Using the previously mentioned research, the students decided that high energy spaces will be complemented with cooler lighting and colors, such as blue, to minimize stress (Bosch, Cama, Edelstein, Malkin 2018). Warm colored lighting and cool colored walls will be used for a relaxed feel throughout the building.

It was also requested that there be as much natural lighting as possible due to the boost it

gives to work performance and overall attitude (Uncapher, 2016). Any artificial lighting used will be placed and toned so as to give the illusion of being natural.

Forming process

The design proposal ignored the Village's request of keeping within the footprint, by expanding out into the surrounding woods, and ignoring the requirements for a Georgian Style building. This was done with the intentions of opening their eyes to something new-something fresh to add to the ever-growing, ever -changing NYIT campus. Something that could be used to define the identity of the school of health professions. The building is 41 feet high, with a total diameter of 325 square feet. The space taken from the forest beyond the boundaries with the new footprint, is made up for with the large central courtyard provided by the use of the Klein shape. The courtyard houses a place where students can experience the outdoors while also feeling protected by the building surrounding it. The central courtyard carries the nature outside the building to the inside. The relation to the buildings surrounding the site will thus be maintained and strengthened. Courtyards have been used for multiple typologies all over the world, "From monastic buildings of the middle ages….to grand quadrangles such as those of the Louvre in Paris or Somerset House in London, the courtyard is both a practical design and also an aesthetic institution that mutates and reflects the character of the age" (Nelson, 2014).

Using the 3D software program, Rhinoceros, Professor Fallacara was able to provide the class with a functional, organic shape. The use of form generating technologies such as Rhinoceros are revolutionizing the architectural field. In the second half of their thesis year, Professor Fallacara hosted a Stereotomy Workshop where the students learned from Zaha Hadid Code architects and AKT II engineers how to find optimized structural forms using different amounts of material through code for the programs Maya and Grasshopper. This ability to generate forms mathematically drove the design for the building proposal along with Professor Fallacara's practice of Stereotomy. This practice incorporates wasting less material by thinly slicing stone and forming it to create either panels for double curvature systems or pieces that can lock together, as seen in Fallacara's pavilion designs (Leardi, 2018). This practice of Stereotomy allows for the synthesizing of different materials with the stone to create unique forms like the panels for the New School of Health Professions proposals' Klein shape. The majority of the building is composed of granite enhanced by carbon fiber or fiberglass depending on the transparency needed. The granite panels are created through a vacuum sealing technology that fits the slices of granite to molds (Fallacara and Barberio, 2016). These double stone curvature panels provide a strong and natural form that is easily assembled by magnets. To increase the sustainability of this innovative practice of use with traditional materials, the machines cutting and shaping the stones can be powered by renewable energy sources. Similarly to the practice of using renewable energy sources to power the kilns for the production of concrete, the sustainability of the practice comes not only from the reduction of waste of material, but also from the reduction of emissions caused in the production process. Working with the same 3D modeling tools with Fallacara, Rhinoceros combined with Grasshopper, the students were able to generate a mathematically stable algorithm of openings in the building form as potential options for increased transparency and windows in the skin. The windows used throughout the building are a new technology designed by Professor Fallacara that will provide shading based on the solar heat gain. The brighter the sun, the higher the temperature and the closer the panes of glass will become, thus causing a dark liquid to rise through the gap to temper the sun's rays.

The structure of the building is composed of steel trusses. The shape is the same throughout, but slightly rotated. Although the building seems complex, it is actually economical due to the structural members having the same modular pieces. The shape of the cross section is maximized for acoustic ability in the lecture halls. The hallways to access these double height lecture halls are buried underneath the raised seating to minimize outside disturbances to ongoing lectures and include ADA accessible ramps to the rooms.

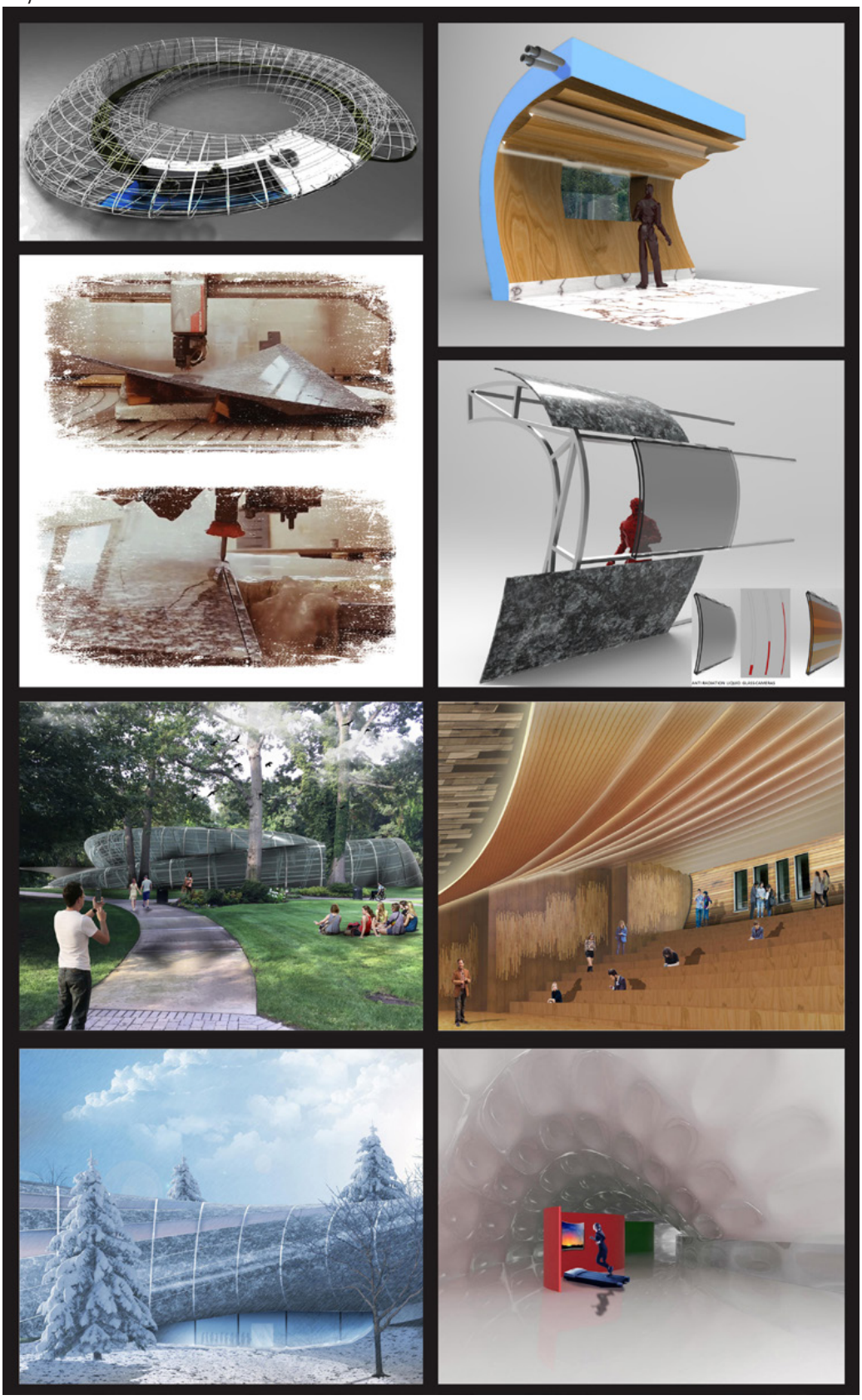
Inside the building there are spaces provided for the students to relax and reflect while exercising or studying. The Klein shape of the buildings form allows for the greenhouse to be

a beautiful double heighted space with a walkway passing through on the second level, breaking up the monotony of the hallway. Not only does the greenhouse provide cooling aspects for the building through evaporation due to its hydroponic system, but it also provides heat. The glazing encased section of the building traps solar heat that is then cycled through to the rest of the building when needed. Heat and energy will be provided to the building through renewable sources such as the greenhouse, implemented geothermal units, and photovoltaic panels. The class proposed flexible photovoltaic panels to be used to fit the dynamic form integrated with the granite panels. In a natural disaster, if the elements of the greenhouse are destroyed, it would cost the least to fix compared to any other part of the building. Glass and foliage can simply be replaced without costing the school a large sum of money.

Conclusion

The project proposal was selected for the exhibition, curated by Giuseppe Fallacara and Dustin White, displayed in New York at Par Excellence NYC (from April 20th to April 29th, 2018) as a part of the event "Stereotomy 2.0 and Digital Construction Tools" held in New York from April 16th to April 29th, 2018 at New York Institute of Technology's School of Architecture and Design. The project was presented by means of a graphic board, scale models printed using 3D Printers and, for this occasion, the company Generelli SA of Rivera (CH) realized a full scale thin cladding panel of granite and carbon fiber. We are very grateful to the Swiss company for making the prototype of the school's skin cladding, as a component of the main aesthetic character of the new building. The proposal for the New School of Health Professions is an attempt to incorporate a new level of thinking into changing the urban fabric of a higher education campus. Through its consideration of tailoring spaces in design specifically for the needs of the education practiced within its enclosure, its different environmental systems, and innovative form and construction techniques, the proposal was happily received by the School of Health Professions and the research conducted in its creation will help in the eventual construction of a new building for the campus.

Figure 4. Skeleton structure and: exterior double curvature granite cladding , and interior curved plywood (up). Interior and exterior perspectives of the building proposal as seen approaching from the existing 'Health Professions Quad' and specific interiors spaces (down)..



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A matter of voids: A phenomenological survey of the Neapolitan Palazzo

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The proposed paper focuses on the individuation of a possible methodology of reading historical architecture in the ancient city of Naples. This approach tend to define a new tool for the contemporary project starting from a deeper knowledge of the body of the ancient city.

The object of our study is the Neapolitan Palazzo. From the comprehension of this particular phenomenon, we tried to define a general rule that could provide a broader overview on the dense and complex centre of Naples, which represents a privileged place to understand how historical architecture still has a deep influence on todays urban conditions. Its deeply stratified tissue, structured on the ancient greek-roman grid, keep being a witness of the ever-changing uses, habits and behaviour of the people who live those spaces. The Neapolitan Palazzo usually a compact building with a central court that grafts itself in the urban system condenses spatial qualities that are emblematical of our contemporary condition, such as resilience, self-organization and informal adaptation; a clear example of their capability to outlast centuries and keep being adequate for human life. Our study based on a new phenomenological approach aims at the recomposition of different data collected during several in situ surveys of a series of Palazzi, observing their atmospheric qualities. The research method consists of three main steps: the photographic reconstruction, the architectural redraw and the critical schematization through physical models. Three examples will be presented: Palazzo di Ludovico di Bux, Palazzo di Nerone, Palazzo Mosca.

Learning to see the ancient city

The knowing of the city can happen in different ways and for different purposes. One of these could be an analytical approach, which requires an accurate knowledge of places through the reading of physical and typological data that often includes a theoretical expertise of the city, like the one proposed by the urban studies of the mid-twentieth century in Italy. This approach is significant to learn and understand cities, their urban structure and the physical condition that caused its form. The reading of the inhabited space, which originated from the social and anthropological condition, either stands opposite or works with the analytical approach since it helps conveying the aspects connected to the way of living and inhabiting the city. There are many variations between these two very different methodologies: the city is then read through multiple layers (political, economic, social, formal, architectural and urban) which address issues responding to specific themes often repeated in new design strategies. In our studying experience of the ancient centre of Naples, the physical consistency of the city is the real field of investigation and research.

For us, knowing the city means exploring its physical essence trying to catch every aspect it underlies, from the sensations it inspires to the visible forms that contain all the meanings in its inherent matter. Theoretical works and drawings of these urban and architectural elements arise from the combination of both a physical and an immaterial analysis, allowing not only the knowledge of reality but also an interpretation of it. The observation of the city is then not limited to a typological plan study, which often turns out to be too abstract towards the perceptible reality, but tries to integrate a sensitive and emotional analysis. Starting from the things that physically build the city, this approach captures the connections between architecture and life in urban space: the particular condition of urbanity that is typical of historic cities.

The ancient centre of Naples is a complex as much as simple structure. The Greco-Roman foundation outlines a recurrent orthogonal plan that consists of streets (*cardi* and *decumani*) and city blocks (*insulae*). The recognizable simplicity of the plan is opposed to an orographic, natural, cultural and social complexity that results in a convoluted and resistant architectural stratification. The continuous growth of the city has also determined the characterization of Naples as a dense city. This concept is explicated not only through the proximity and the overlapping of buildings, but also in the meaning that all these slow modifications have assumed over time for the city.

Therefore, this essay proposes a method of observation that starts from an accurate perceptive and interpretative analysis of the elements that make up the built part of the city and tries to bring out those spatial and sensitive data that are contained in the materiality of things. In this approach, space is not considered as a void resulting from a predetermined form, but rather as a meaningful place, pioneer and fundamental structure of our built environment.

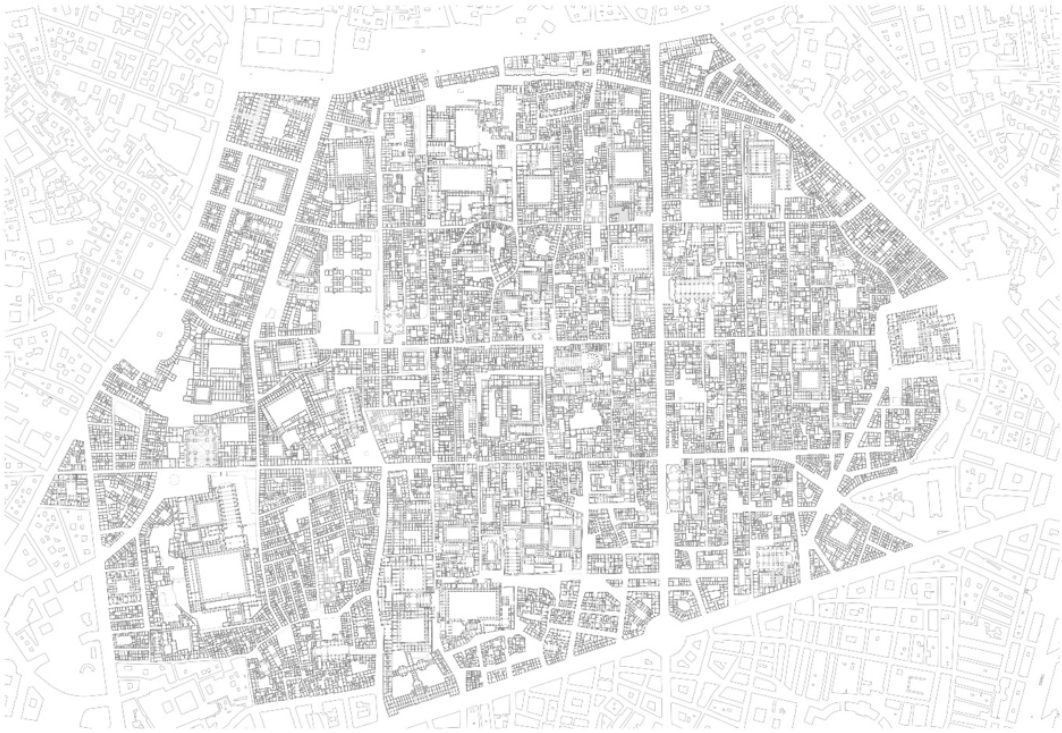
Our observation focuses on the complexity that constitutes the ancient centre of Naples, a place where churches and houses, extraordinary monuments and ordinary architecture coexist. We would like to concentrate upon the unexpected composition of spaces generating architectural events, upon the shape of the empty space of the bright courtyards and the shady entrance halls, upon the articulation of volumes that link together cadastral properties and urban *insulae*, upon the variable thickness of walls that mark the limit between inside and outside. All of those things never taken for granted, but always varying accordin the specific conditions.

We trained our gaze to look at the abstraction gradient of the city forms and at the same time at their reality. A complex concept that looks at the purity and natural deformation of time that affects and alters those typological views that little have to do with the reality of Naples. Rules, measures, dimensions, spaces, shapes and materials are the basis of a necessary handbook for the contemporary praxis that looks at the city as a container of knowledge to be explored and experienced again and again.

From the urban cell to the stratified *palazzo*

The object of our study is the Neapolitan Palazzo. From the comprehension of this particular

Figure 1.



phenomenon, we tried to define a general rule that could provide a broader overview on the dense and complex centre of Naples, which represents a privileged place to understand how historical architecture still has a deep influence on today's urban conditions. Its deeply stratified tissue, structured on the ancient Greco-Roman grid, keeps being a witness of the ever-changing uses, habits and behaviour of the people who live those spaces. The Neapolitan Palazzo – generally a compact building with a central court that grafts itself in the urban system – condenses spatial qualities that are emblematic of our contemporary condition, such as resilience, self-organization and informal adaptation; a clear example of their capability to outlast centuries and keep being suitable for human life. It represents the basic unit with which the ancient city was built and stratified within the Greco-Roman grid system. Founded in the sixth century BC, the foundation core is structured on three major axes, the *plateai – decumani*, directed in the east-west direction, respectively via dell'Anticaglia, via dei Tribunali and via San Biagio dei Librai, intersected by a series of *stenopoi – cardi* in the north – south direction. The space resulting from this strict organization defines an insula, an urban block of recurring dimensions; in fact, the long side (north – south) is about five times the shorter (east – west). This proportion directly derives from the Roman measures of the *actus* (37 x 185 m). Since its foundation, the ancient city has remained almost unchanged in its original urban imprint.

While preserving these traces, the transformation of the roman *domus* into *palazzos* has not been abruptly¬ given. In fact, the historic centre has been stratifying through successive processes of contamination, overlap, juxtaposition or concretion in the rhythm of different historical times and cultures. This gradual process, not homogeneous or uniform at all, has led to the transformation of the isolated, compact, continuous block of the R¬enaissance city then evolved in the eighteenth century where 'the fabric of the domus widens, opens and thickens, to contain the new architecture of the Neapolitan *palazzo*' (Savarese, 2002). In the eighteenth century the ancient urban mass, once compact, begins an unstoppable process of reduction and those buildings – through becoming increasingly porous bodies – gave the illusion of being able to be visually crossed; with these transformations the original insula can be sought longitudinally without interruptions, as happens crossing the threshold of *Palazzo*

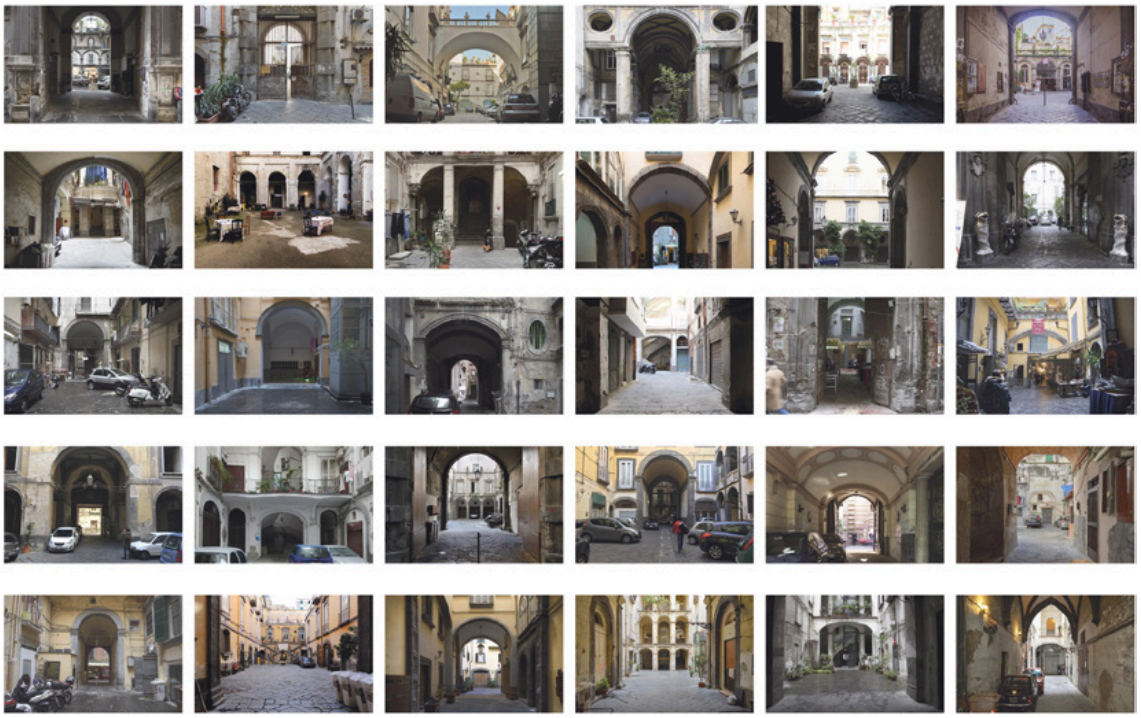
spinelli where it is possible to look at the succession of the courtyards or in the other *palazzi* on via Nilo where stairs tie around narrow *vanelle* (very small courtyards) from the shady basements up to sunny terraces. The new irregular profiles of the ancient and increasingly stratified city are slowly defined. The actual urban blocks have been growing on the original footprint, freeing courtyards, patios, wells of light, turning hallways, incorporating huge or very small monumental staircases and opening internal galleries facing the empty space of the courtyards; those buildings could only grow in height, never crossing the perimeter of the pre-existing *insulae* that were included between the edges of the city walls.

The result of these transformations is a porosity that, at all building levels, generates an unsuspected concatenation of voids: this permeability happens not only on the courtyard level, but reiterates for all the floors of the *palazzo*, becoming see-through and looking almost as they've not been fully finished; it is like a continuous and homogeneous landscape traced from the underground of the city, where the tuff – 'volcanic, coming from the deep sea, capable of solidifying itself in contact with the water' (Trione, 2014) - was extracted to build the parts of the submerged city. The presence of these voids, with their specific concatenations for each building, allow us to distinguish from the inside the building itself and its boundaries, which could be difficultly discerned from the outside because of the continuous profile along the streets that allude to a single urban block. Unlike the nineteenth century block, this one clearly defines itself in the expansion areas near the walls, is organized around a few simple rules that are specified case by case respecting the external conditioning - the pattern of the streets, the presence of a pre-existing monastery, etc. These conditions mean that only a few specific parts could be decorated and made monumental, such as gates, staircases, loggias, since they are part of the spatial sequence that from the street brings into the house. Gate, entrance hall, courtyard, open staircase, are the invariants: double courtyards, loggias on the upper floors, hanging gardens, are some of the possible variations. In the articulation of these sequences it is possible to observe some changes in proportions – that could be very often surprising – but also in the amount of light or the resonance of building materials. This defines the pauses or accelerations in the experience of the *palazzo* where the concordance of punctual elements of these complex articulations catches the eyes of the passers-by.

Constitutive elements and spatial sequences

The interest in those buildings lies in their seemingly extraordinary spatial structure which, even if derived from the same stratified type, declare their own architectural identity. The Neapolitan *palazzo*, as an autonomous architectural object, incorporates some morphological, formal, typological and dimensional characteristics identifying a clear example of spatial domestic composition able to deal with the evolving needs and necessities. Trying to conceptually schematize its recurrent parts it is possible to recognize four main elements: the entrance hall, the courtyard, the staircase system and the thick body of the building surrounding the open space. These have as many declinations as possible variations within the variety of the built tissue of the city, even though the repetitiveness of the spatial structures is always the same. The entrance hall faces the street, more or less wide depending on the street section (the smaller the street the larger the entrance hall had to be, in proportion with the useable space of the courtyard related to the manoeuvrability of the horse carriages). The courtyard, an empty space excavated in the building, solving the need of light and air for the houses. With different geometries and physical consistencies, the courtyards represent a large collection of private places that seem to exist before the effective construction of the same houses. Always made of stone, it speaks the same coherent language of the ancient urban tissue, defining a figurative element that surrounds a collective but at the same time intimate space within the specific *palazzi*. An urban room bordered by the facades of the houses that overlook into it. From the courtyard one can without exception access to the system of vertical connections. The stairs, famous theme of the Neapolitan *palazzo*, are an architectural element that mediates between the public and the private sphere. Through the careful analysis of its position within the *palazzo*, its dimensions, proportions and the observation of the different elements that compose it, it

Figure 2.



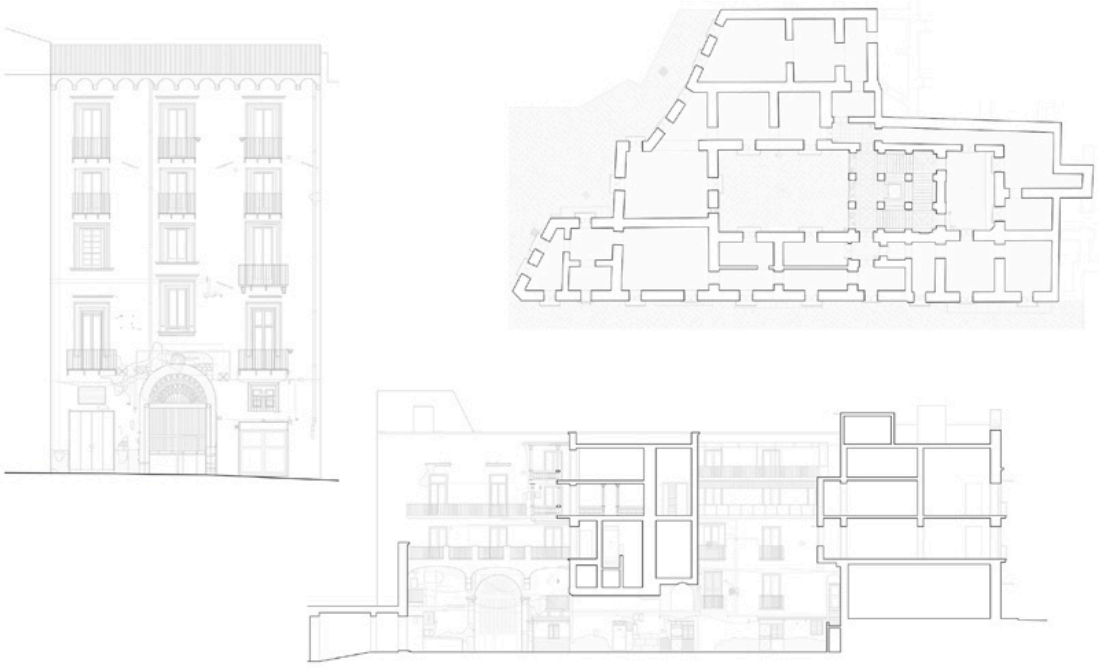
is possible to understand what are the grounding urban and functional reasons underlying its exact shape and structure, often representing the social class of the *palazzo*'s owner. Back to a formal point of view, the staircase represents the pace of the palace. It regulates the vertical articulation of the facades and keeps together the floors height differences. With its envelope it describes its morphological conformation, keeping all the differences together, allowing the whole building to be like a cohesive body. The volumetric structure of each building, last element of the spatial sequence, is that part that contains the amount of space needed to build the rooms of the houses. The typically made of a room-inside-a-room succession, where the structural measure prevails in the dimensional definition of the spaces, let the very different houses appear as an uninterrupted sequence of places in which uses and actions contaminate and overlap in space.

These four parts that build the whole *palazzo* are able to express their semantic plasticity and metamorphic flexibility only through their manifold combinations according to different environmental conditions. If it is therefore possible to observe a recurrence of these parts in each building and a specific relationships with the urban space, however, it is also possible to discover how the building parts are case by case intertwined, highlighting the different topographical and orographic conditions. Ultimately, the Neapolitan *palazzo* is one of the most changeable domestic configurations since it tries, inside the dense ancient centre of Naples, to create its own autonomous space.

A phenomenological approach

The core of our research is space and its emotional and atmospherical qualities. As practicing architects, our constant question is: what are the tools that would allow us to reach a pursued atmosphere? Is there a *modus operandi* in architectural design that put at its centre the experience of a place and its specific qualities? This question is still unanswered, even though we firmly believe experiencing places is essential to develop a greater sensitivity to contemporary issues. The experience of a place like the ancient city of Naples, too dense and complex to be explicated only through images or typological analysis, is composed of

Figure 3.



not one but numerous smaller sensuous experiential situations; each of them worth analyzing. The various *insulae*, tirelessly stratified in the millennia, combined themselves together to form a continuous urban body that makes the ancient city so significant to study. A city mostly made of houses, starting point of a research that aims at the comprehension – even if partial – of the complex phenomena that contribute to a certain atmosphere. From the particular to the general, then, trying to understand *how* before reflecting on *why*, distilling a series of properties that should be taken into account for the transformation of the city. Reading through different layers allows us to grasp what are the fundamental lessons that the built environment carries over time and bring into the contemporary project.

One of the premises of this work was trying to feel the atmosphere of the ancient city. Through frequent and in-depth surveys, one could experience a place and its peculiar spatial and haptic qualities. Strolling, stopping to observe something that catches the eye, touching, taking photographs, sketching: all actions that allow different images to slowly stratify in the eyes and hands of the observer, training the senses to a better understanding of the built environment. From a sample of about seventy palazzi, three specific non-monumental case studies have been chosen: *Palazzo di Ludovico di Bux, Palazzo di Nerone and Palazzo Mosca*: the three *exempla* present substantial morphological variations that make their conceptual schematization too simplistic. The specific urban condition they're a result of made them evolve according to their peculiar and different characteristics. Therefore they should not be referred to some abstract crystalized geometries traced on the ground or in a hypothetical historic shapes, since only life and the passage of time bring life to that set of ever-changing phenomena that it is worth deepening and investigating trying to understand their meanings and reasons. The research has therefore been structured around three main moments: *the actions of knowledge*, or all the various steps taken to try to describe, dissect, analyze the objects of our study.

The actions of knowledge

"This (designing from the place) requires cool observation and a careful reading of the place. Initially we try to make a small number of what one could call portrait photos of a

Figure 4.

place that capture its nature and character on different scales. It is essential to visit the site as often as one can. After reflecting on the observations one has gathered, return visits are necessary to verify, clarify and possibly review one's initial observations, again with the help of photographs and sketching." (Beigel, Christou, 2013)

The research method consists of three steps that we called actions of knowledge. An action is something that involves a certain physical engagement for the user; a movement, a dynamics. To act in order to know, to push oneself experiencing space and its connotations. The photographic reconstruction, the architectural redraw and the critical schematization through physical models.

The first action of knowledge was photographic representation. Photographing a space is the first step for gathering information about the building and to train the eye to observe dimensions and proportions. Recomposing the pictures taken during several surveys and walks through the different urban situations of the ancient centre helps our perception to focus on some elements often unseen during the surveys that lead to other detailed researches. By choosing a series of photographic sequences adaptable to the particular characteristics of the singular building, the various degrees of intimacy crossing the building have been described: from the street to the court, to the staircase and finally to the house, through different thresholds, rooms and spatial modifications. These sequences were shoot taking into account some rules that are essential for the comparison and the success of the exercise. In particular, all the photographs of the court and street spaces were taken in horizontal format at eye level at the same time of the day, preferably in the morning where the shadows are not so strong and facilitate a better reading of the weaving of the walls. An additional sequence was shoot for the staircase, this time in vertical format.

The second action of knowledge was a process of redrawing the three exempla in their entirety through the typical architectonic representation: plan, section and façade. During the various surveys in the ancient city, we've been sketching, measuring, taking notes therefore analyzing the physical consistency of the buildings, their solid masses and the space-in-between them. The characterizing elements of those architectures join together as a whole and become responsible for the precise atmosphere of a place, allowing us to discover each time new information for the understanding of the how. The various pencil sketches have then been transformed into drawings in 1:20 scale. Drawing and redrawing

is a slow path of evaluations, errors, repetitions and doubts, which adds a different depth of meaning to the contemporary inclination to stop at a retinal knowledge level. 'Drawing is a process of observation and expression, receiving and giving, at the same time' (Pallasmaa, 2009); in fact, sketches contain within them the mood and expectations of the person who draws, carrying with them always something more than what constitutes its actual material subject. Hand and eyes connects together filtered by imagination, memory and personal consciousness, building on paper an-*other* reality made of ink. 'The hand-eye-mind connection in drawing is natural and fluent, as if the pencil were a bridge that mediates between two realities […] the physical drawing and the non-existent object in the mental space that the drawing depicts' (Pallasmaa, 2009).

The third action of knowledge was structured around the realization of several physical models, in different scales and with different materials. Moving from a two-dimensional support, like a drawing, to a three-dimensional state, like a model allowed us to observe certain aspects previously unnoticed. It implies a degree of abstraction to transpose what's real and made with materials like stone, plaster and wood in a scale model the essential parts of a real building. Training the hands to manage shapes, proportions and dimensions to transmit clearly and instantaneously what the substance of that space is and how it materializes on our working table, since 'the simultaneity of understanding three-dimensional space and its relationship with man and light […] when the model is placed under the real sun, is something ineffable and infallible' (Baeza, 2013). So, if drawings allow us to understand how a building is made, showing the single elements that contribute to a whole, physical models let us understand the space generated by those elements and make clear the ideas underlying them. Working with models of a built environment is a useful exercise to gain a greater awareness of a historic context, while improving natural manual skills. Through our hands we appropriate of certain measures that are specific to a site, which are internalized and made our own, being then interiorly transformed into an augmented sensitivity in relation to the theme of the contemporary project for the historic city. The phase of realization of models was very significant as it highlighted the effective consistency of these spaces through their de-structuring in the basic minimum elements which have been consequently reassembled them into a single object.

Conclusions

An open research, set up to define a method of observation of reality. Investigating the historic city is not only a matter of necessity to the development of our research but it is mainly related to the transmission of a specific cultural message: working in a built environment means to let *listening* prevail on *invention*, getting lost in the crowed dense tissue, picking from it spatial and formal samples of the historic city in order to build a personal archive made of a collection of disjointed pieces, different fragments and contradictory combination. A weak theory starting from the feeling of a place and its related fragilities and inaccuracies, built to understand the intensity with which its fundamental values unfold through studying the ancient city.

This tends to define a phenomenological path of research that looks at the contemporary design practice as a conveyor of education and observation of places, aiming to read and understand the particular spatial devices and material conditions of specific realities, holding out against the fascination of contemporary conceptual operations detached from a natural evolution of built contexts.

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(Re)shaping landscapes: scenic Hellenistic architecture in the making of a monumental urban form and its spread in Roman period

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The reading of the urban image of ancient cities is often limited to two dimensions, exclusively focused on the street plan and on the building typologies. Such approach tends to take into insufficient account the spatial interactions of the urban plan with the site topography, as well as the visual relationships between monumental architecture, urban tissues and landscapes. A series of recent studies has offered significant contributions towards a three-dimensional comprehension of the ancient city. The present paper joins this research trend, by focusing on a specific morphological configuration, based on the combination of terraced public spaces (agora/forum) and theatres. The origin of this model can be found in the spread in the Hellenistic koiné of urban forms based on scenic relations between city and landscape.

The research will outline the characteristics and the evolution of this pattern and investigate its diffusion in the Mediterranean through the analysis of case studies in Hellenistic Sicily and in Hispania Tarraconensis during the reign of Augustus. Between 3rd and 2nd century B.C. the connection of agorai and theatres was adopted in a series of Sicilian cities, such as Akragas, Morgantina and Solunto. The research will highlight the role played by these experiences in the later diffusion of the same models in many cities of Hispania (e.g. Sagunto, Bilbilis, Segobriga), as a part of the Augustan program of urbanization.

The Hellenistic urban experiences: from the Alexandrian world to Akragas/Agrigentum

Thirty years after the publication of *Die Architektur des Hellenismus*[1], a work that represents an essential turning point in the study of ancient architecture, it is now common opinion that the founding conditions for the formation of a wide architectural *koine* can be traced back to the political, social and cultural phenomena of Hellenism. This new trend, after the overcoming of the structure of the *pòlis*, is traceable into the capillary widespread of forms, languages and new models in the Mediterranean basin, but not only. The definition of urban patterns, one of the most characteristic elements of the period, followed specific routes of transmission spreading from the Alexandrian world, the main center of cultural innovation of that time[2]. Although the capital of the Ptolemaic kingdom was undoubtedly the reference point for the urban transformations of the period, it was not the only center with such a strong influence. Besides the key role played by Halicarnassus in the urban design of Alexandria[3], the urban experiences in cities of Asia Minor such as Rhodes[4], Kos[5] and Pergamon[6] should not be underestimated. Moreover, is interesting to notice how the development of Athens in the 4th and 3rd centuries B.C. attracted the attention of the Ptolemaic and later of the Attalid sovereigns, who found in the Attic city a proper stage for the display their euergetic architectures.

The Hellenistic urban experience brought new and ancient cities to a leap in scale that went beyond the definition of individual buildings, leading to a more complex and at the same time organic monumentality[7]. Cities changed, therefore, wrapping themselves around the spaces of public life, and large areas spared in the regular urban tissue referable to traditional Hippodamian zoning[8], but also to the planning of founding cities of Western Greece[9].

One of the most representative examples of these urban innovations is the ancient Agrigento, where morphological rearrangements directly dependent upon the continuous and sudden changes of Power are particularly evident. From the Greek Akragas to Roman Agrigentum it is possible to point out a stratified city, which is at the same time one of the last expressions of the colonial phenomenon of Western archaism and among the earliest evidences of the Sicilian "Romanization"[10].

In order to identify the characters of the urban scenography of the ancient Akragas that remained unchanged despite the passage of time and the socio-political rearrangement, it could be helpful to re-read the ancient sources that more or less explicitly trace an image of the city that seems to preserve some distinctive aspects of its physiognomy. In this regard, therefore, it may be useful to understand what led Pindar to define the city, as early as 490 B.C., "the most beautiful of mortal cities" [11]. In the current state of research, it is, indeed, very difficult to figure out the reasons for this affirmation in the architectural evidences of the Archaic city[12]. Although the current ruins of the city still return a picturesque image, they could not be taken into account by Pindar, since most of them pertain to subsequent structures. Further useful information to clarify the meaning of the Pindaric statement can be traced, however, in the well-known description of the *forma urbis* provided by Polybius, while reporting the city seize by the Roman army in 210 B.C.: "The city of Akragas is superior to most cities not only in the ways I have mentioned but in strength and especially in the beauty of its site and buildings. It stands at a distance of eighteen stades from the sea, so that it enjoys

1 Lauter 1986.
2 Adriani 1966, Pensabene 1993, Hoepfner, Schwandner 1994, pp. 235-256; McKenzie 2007.
3 Caliò 2012, pp. 383-386.
4 Filimonos 2004 and Rocco 2018.
5 Rocco, Livadiotti 2011 with previews bibliography.
6 Pedersen 2004.
7 For the relationship between urban planning and architectural design for the definition of public spaces in the Hellenistic age see Lauter 1972 and Winter 2006, pp. 207-218.
8 The reference aims to the definition of urbans planning directly attributed to the Milesian, in whose work, although widely simplifying the concept, is necessary to identify a regular distribution of functions in urban spaces regularly organized instead of the simplest planning of a grid of orthogonal road axes. On the work of Hippodamus, with extensive bibliography, Caliò 2012, pp. 105-126.
9 Di Vita 2002, p. 143.
10 Soraci 2017.
11 "Κάλλιστα βροτεαν πολίων" Pind. *Pyth*. XII, 2.
12 A summary of the research on the architecture of the Archaic Akragas, already difficult to define in the first excavations by Pirro Marconi (Marconi 1933), is in Adornato 2011, pp. 79-88.

all the advantages of a sea-coast town. It is encircled by natural and artificial defences of unusual strength, the wall being built on a ridge of rock either naturally steep and precipitous or artificially rendered so. It is also surrounded by rivers, that which has the same name as the town running along the southern side and the Hypsas along the west and south-west sides. The acropolis overlooking the town is due South-East from it, being surrounded on its outer side by an impassable ravine and having on its inner side but one approach from the town"[13].

It looks like, therefore, that, despite the temporal distance between the two authors, the element that most attracts their attention is not to be found in the characters of single buildings, but - indirectly in the case of Pindar and more explicitly in Polybius - the focus lies on the close dialectic relationship between natural landscape and architecture. From this standpoint, it is interesting to consider the participation of Rhodian settlers to the foundation of the Sicilian colony. Ancient authors[14], in fact, often referred to Rhodes as a "theatre-shaped" (*θεατροειδοῦς*)[15] city. This definition emphasizes the connection between the uneven natural orography and the scenographic arrangement of monuments, organized and distributed over artificial terraces. A close parallelism with the nature of the urban system of Akragas is evident, where public spaces occupied prominent positions in a gridiron of regular blocks, set up by a hierarchical network of main and secondary streets (*plateiai* and *stenopoi*). Both these urban experiences share, then, the guidelines of an overall method of city planning, which results as a synthesis of the practices of the 5th and 4th centuries B.C.

The recent researches conducted in the public central area of the ancient Agrigento by the Polytechnic University of Bari (DICAR dept.)[16] allowed to clarify and better understand the building and life phases of the main public monumental attestations of the Hellenistic and Roman city and at the same time to provide interesting data on the nature of urban morphology in the same period. Through the investigation of the area to the North and South-East of the "Poggio di San Nicola" it was possible to locate a system of imposing terraces, added in a sequence embracing distinct historical periods. Their aim was not only to expand the space available for new buildings[17], but in general to enhance a broader monumentalization program of the city of great visual impact, based on the same principles of the already mentioned achievements of the Hellenistic world[18]. These studies, trying to define more precise limits of this vast public area, resulted in new data that can depict a new image of the city between the 3rd century B.C. and the Imperial age. Among these are the identification of a new *plateia* that led to a reconfiguration of the urban layout proposed in the hypothesis of Griffo and Schmiedt in 1958[19] as well as the discovery of a theatre[20] built on the slope to the South of the agora. The latter, stood on the same visual axis of the so-called Temple of Concordia, emphasized the considerable difference in height between the levels of the square and the south *plateia* and partook to a monumental scenography, evoking the impressive solutions of the skyline of Pergamon, Priene and Cnidus[21].

The central area of ancient Agrigento is, therefore, so defined (fig. 1): a large square of 150x300 m whose limits were marked to the North by the E-F *plateia*, to the West by the *bouleuterion* and "Oratorio di Falaride"[22] terraces, to the East by the Hellenistic-Roman

13 Polyb. IX, 27, 1-6.

14 i.e. *Rhodiakos*, XXV, 6-8 and Diodorus Siculus, XIX 45, XX 83.

15 For a definition of the term see Caliò 2005.

16 In collaboration with the "Ente Parco Archeologico e Paesaggistico della Valle dei Templi".

17 As in the case of the Roman sanctuary (Caliò, Livadiotti, Belli Pasqua c.d.s, Caliò, Livadiotti, Belli Pasqua 2014, Caliò et alii 2016, Livadiotti, Fino 2017).

18 On the plan of the central area of Agrigento see Caliò 2016, for an architectonical definition of the terrace system see Livadiotti, Fino 2018 pp. 62-65.

19 Schmiedt, Griffo 1958. About the new urban configuration see Caliò et alii 2016, Brienza, Caliò, Furcas, Giannella, Liuzzo 2016, Brienza, Caliò, Liuzzo 2016, Brienza 2017, Caliò 2017, Brienza, Caliò 2018.

20 Preliminary considerations on the architecture of the theater can be found in Fino, Labriola 2017 e Fino Forthcoming.

21 Rocco 2006.

22 The small temple rises on the fill that covered the circular structure of the *ekklesiasterion*, and was built in a historical moment in which the institution of the *ekklesia* was no longer useful to the *civita decumana* of Agrigentum, or after the realization of the nearby theater that could hosted the citizen assembly. On the so-called Oratorio di Falaride see: Serradifalco 1836, pp. 84-86, 122, tav. 28; Koldewey, Puchstein 1899, I, pp. 182-183, tav. 27; Marconi 1926, p. 106 ss.; Sidow 1984, pp. 295, 298; a proposal of dating at the beginning of the 1st century B.C. is in De Miro 2000, pp. 95-96.

Quarter[23] and to the South by the theatre and the lower *plateia*. Regarding the architectural conformation of the agora, it is not possible at the present state of research to provide reconstructive proposals, but some clues could indicate that the square was surrounded by *stoai*. This is suggested by the north-south stylobate - with still some columns *in situ* - on the front of the *bouleuterion*; by the prosecution of the foundation of the same structures along the terrace limit in the east-west direction, close to the E-F *plateia* and finally, the need to connect the level difference of about 10.00 m between the Cardo I and the west side of the square.

Such hypothesis, although still waiting for more detailed studies, is not far from the well-known solutions of the Hellenistic world, and in particular in the *agorai* where the *stoai* played a central role in the re-shaping of urban space. This is also the case of many Sicilian *agorai* among which Morgantina[24] (fig. 2), Solunto[25] and Segesta[26].

Antonello Fino

Hellenistic heritage in the Augustan urbanization of the West: case studies in *Hispania*

The areas under the Roman sphere of influence were of course not excluded from the spread of these urban forms. Since the first half of the 3rd century B.C. the increasing number of Italic *mercatores* trading in the southern Aegean through the free port of Delos would become familiar with highly scenic terraced complexes[27], such as the *agora* of Kamiros[28], and the *Athenaion* of Lindos[29] in Rhodes (both dating to the last quarter of the 3rd century B.C.) and the *Asklepieion* in Kos[30] (first half of the 3rd century B.C.). In some cases, like the sanctuary of Asklepios, Hygieia and Homonoia in the *demos* of *Isthmos* in Kos[31] (beginning of 2nd century B.C.) or the sanctuary of the Goddess *Syria* in Delos[32] (end of the 2nd century B.C.), these monumental ensembles comprised a theatre *koilon*. Further opportunities to experience this kind of scenic architecture came from the Roman military expansion in Hellenised regions of the Mediterranean. A large role was played by Sicily, the first established Roman province (241 B.C.), where the conquerors could appreciate the urban form of cities such as Akragas, Morgantina or Soluntum.

However, these contributions had at first only a reduced effect on the Roman official architecture. During the 2nd century B.C. the growing political importance of the *Urbs* was in fact not accompanied by any comprehensive plan of urban renovation inspired by the Hellenistic capitals. The innovations in the public spaces were limited to the increasing use of imported marble, and to the gradual introduction of the *stoa* typology, with the construction of the *basilicae* in the Forum and the realization of the *Porticus Metelli* (146 a.C.)[33]. Terraced complexes based on a sequence of precincts surrounded by *stoai*, and often including a *cavea*, became yet common throughout the same years in peripheral areas of *Latium*, in a series of sanctuaries[34] (*Iuno* in Gabii, *Hercules* in *Tibur*, *Iupiter Anxur* in Terracina and *Fortuna Primigenia* in *Praeneste*) promoted by local *equites* and *negotiatores*, who invested part of their incomes into the monumentalization of their cities of origin. In this environment, these architectural solutions could even be interpreted as an ideological contraposition to the official architectural language of Rome[35], from whose political life these emerging classes were deliberately kept excluded by the ruling senatorial landed aristocracy.

The power of the Senate was severely-and-definitively limited after the rise to power of Octavianus and his promotion to *Augustus*. The new regime, despite concentrating most of

23 De Miro 2009; Parello, Rizzo 2015.
24 Bell 2012.
25 Wolf 2012.
26 Ampolo 2012, pp. 271-328.
27 Caliò 2003.
28 Caliò 2011.
29 Lippolis 1989.
30 Bosnakis 2014.
31 Livadiotti and Rocco 2001.
32 Italic merchants are, excluding the Syriac, the most represented ethnicity in the dedications from the earliest phase of the sanctuary (Will 1985, pp.140-141).
33 See Caliò 2003, pp. 70-71.
34 Coarelli 1987.
35 Similarly, the adoption of Hellenistic models in the Samnite sanctuary of Pietrabbondante (2nd century B.C.) can be read as a form of opposition of the local community to Rome (see Duret 2009-2010).

the political power in the hands of the *Princeps*, expanded the opportunities to partake in public life beyond the patrician aristocracy. This political revolution was accompanied by the introduction of scenic urban models into the official architecture, which could be regarded as an instrument of self-representation of power borrowed from the Hellenistic autocracies, as well as the conclusive consecration of forms until then ideologically associated with the emerging classes. Moreover, the use of schemes that in Italy had been previously mostly associated to sanctuaries could mirror a shift in the meaning and function of the *forum,* from a public space dedicated to commercial and political functions to a sacred space devoted to the celebration of the imperial authority.

The influence of these models appears particularly evident in the urban form of newly planned cities. The reform of the provinces, promoted by Augustus and Agrippa since 27 B.C., was based on the extension of the city-based administrative model of the Eastern Mediterranean to the whole Empire. Its application turned out to be rather problematic in those western regions, such as *Hispania* and *Gallia*, where "urban" settlement models were mostly ignored[36]. These conditions required a large-scale urbanization process, involving the *ex nihilo* foundation of new cities and the attribution of an urban form to existing settlements, usually accompanied by the promotion of the juridical status of those communities[37]. The urban plans elaborated in this context were mostly based on a combination of the practice of *deductiones* in Italy between the 3rd and 2nd century B.C.[38] with solutions of Hellenistic derivation, such as the recourse to terraces for the adaptation of the gridiron to the orography of the site and the integration of a theatre into the urban fabric.

These tendencies are particularly evident in the Province of *Hispania Tarraconensis*, where the prolonged stays of Augustus and Agrippa during the Cantabrian Wars and the early and deep-rooted "romanization[39]" of local elites provided a fertile ground for the diffusion of urban forms promoted by the central power, leading to particularly scenic solutions[40]. Between the last decades of the 1st century B.C. and the beginning of the 1st century A.D. this region saw the development of several Romanized urban centres, generally located on elevated and highly visible spots, consequently demanding the adaptation of the plan to the irregularities of the site. The *forum* of these settlements was erected at the most prominent point of the urban topography, regularized through substructions and terraces[41]. The *fora* could be based on different plan schemes[42], with all the different solutions sharing the disposition of the main buildings around one or more open spaces, surrounded by *porticus* and *cryptoporticus*[43], which, like the Hellenistic multi-level *stoai*, acted as containing structures for stepped platforms and hosted the vertical connections between different levels.

A further key element in the urban form of these cities was the theatre, which since the construction of the Theatre of Marcellus in Rome (12 B.C.) became an indispensable facility in any Roman settlement that aspired to the status of "city". This can be explained by its importance as privileged stage, together with the *forum*, for the celebration of the emerging Imperial Cult. *Fora* and theatres were usually richly furnished with groups of statues representing the Emperor and his family, and the itineraries of the periodical processions[44] of

36 Except for Greek and Punic colonial foundations such as *Massalia, Emporiae, Carthago Nova*.

37 The concession of the ius Latii to an existing settlement was a great opportunity for the local elites, who could achieve Roman citizenship after completing a mandate as city magistrate (Vittinghoff 1994, pp 53-54).

38 These cities generally adopted a grid street plan organized around two perpendicular main axes, crossing by the *forum*. Such schemes can be observed for example in *Alba Fucens*, *Minturnae*, *Cosa* or *Luni* (see Gros and Torelli 2007, pp. 165-198).

39 For a reflection on the meaning of the term "romanization" see Millet 1990.

40 An investigation on the Augustan and early Julio-Claudian urban plans in this province is part of my current PhD research at Politecnico di Bari.

41 The *forum* could occupy a single platform (*Saguntum*, *Clunia, Ercavica*, *Segobriga*, *Libisosa*) or two or more terraced levels, with a sacred building usually located on the uppermost terrace (*Carthago Nova*, *Bilbilis*, *Barcino*).

42 Past studies on the *fora* of the western provinces identify recurrent plan schemes, such as the 'bloc-forum' or the 'basilica-forum' (see Ward-Perkins 1970 and Gros 1990). However, recent investigations reveal a great variability of specific solutions, not ascribable to standardized schemes. It is still possible to define two general *forum* typologies: *fora* with an independent sacred *temenos* opened on the *forum* square, and *fora* without a dedicated sacred area.

43 For a detailed analysis of this typology, see Luschin 2002.

44 A connection with the itinerary of processions was also suggested for the Theatre of Marcellus, whose *parodoi* were on the path of the *via Triumphalis* (Monterroso 2010).

imagines of members of the ruling dynasty reached their apex in both these public spaces[45].

In some cases, this functional and ideological connection between *forum* and theatre led to the integration of the two buildings in a complex architectural organism, with outstanding examples observable in *Segobriga* and *Bilbilis*. The planimetric schemes of the *fora* of these two towns were based on completely different models. The *forum* of *Bilbilis*[46] (15-0 B.C.) can be ascribed to the "bloc-forum" typology: the sacred and the civil area were articulated as two separate columnated precincts, which in this case occupied two different stepped terraces on the top of a small mount. On the other hand, the *Segobriga* case[47] (15-13 B.C.) may be regarded as a typical "basilica-forum", with no dedicated sacred area. The columnated precinct, presided over by the basilica on its Eastern side, was placed on the higher part of the hillside's slope, on an artificial platform sustained by *cryptoporticus*.

Despite the differences in their plans, the urban insertion of the two complexes followed similar principles. Both were located on a prominent point of the urban topography, elevated over the surrounding urban fabric. Their layout resulted quite independently from the urban grid, where they did not occupy a barycentric position like the *fora* of the Republican colonies in Italy. They were instead situated at the edge of the city, in proximity to one of the gates, thus maximizing their visibility from outside. This contributed to the definition of a strong *imago urbis,* highly recognizable from a vast territory.

Due to their elevated location, both *fora* had to be connected to the surrounding urban fabric through a system of stepped terraces and platforms, which at the same time gave direct access to the theatre *cavea*. In *Bilbilis* (fig. 3), the western side of the upper platform was flanked by a series of descending terraces, the lowest of which was connected to the *porticus in summa cavea* of the theatre[48]. In *Segobriga* (fig. 4), an intermediate terrace[49], closed on three sides by a *porticus triplex* and on the fourth side by a rectangular *aula*, acted as a filter space between *forum* and theatre. The lower level of the northern wing of the porticus was probably connected to the *via tecta* that ran between the theatre and the city walls and gave access to the *cavea*. In both cases, this urban configuration appears to be part of a coherent plan, appointed at the end of the 1st century B.C. and realized between the reigns of Augustus and Tiberius.

The celebration of imperial power permeated both these highly scenic complexes. Effigies of members of the Julio-Claudian dynasty were exhibited in the *sacellum in summa cavea* in *Bilbilis*[50] and in the *scaenae frons* and *forum* of *Segobriga*[51]. Despite the poor state of conservation of the *forum* of *Bilbilis*, the head of an oversized portrait of Tiberius reused in the Trajanean restoration of its upper terrace indicates how also this monument was pervaded by imperial effigies[52].

These case studies represent a clear example of the historical persistence of models in the definition of the urban form. In fact, in these small towns of central Spain the Augustan monumental complexes were based on the rediscovery of formulae which originated two centuries earlier in different areas of the Hellenistic *koine*. This transfer was not spontaneous, but intentionally promoted by the political power-holder as a means of conveying its propaganda. Such use of historical precedents to transmit a specific ideological message is a recurring theme throughout the history of architecture, recognizable in several architectural revivals up to our recent past.

Alessandro Labriola

45 For the characteristics of the Imperial Cult in the Iberian Peninsula see Étienne 1958. For the role of processions, see Fishwick 2005, pp. 268-273.

46 An up-to-date description can be found in Martín-Bueno, Sáenz 2016.

47 See Abascal, Cebrián and Trunk 2004.

48 Martín-Bueno and Sáenz 2016, p. 270.

49 Abascal, Almagro-Gorbea, Cebrián and Hortelano, 2010, pp. 21-50

50 Probably dedicated to the cult of Livia (Martín-Bueno, Núñez and Sáenz 2006, pp. 237-239).

51 See Noguera 2014. The celebrative apparatus of the *forum* included an altar dedicated to Augustus between 2 B.C. and 14 A.D.

52 Martín-Bueno and Sáenz 2004, pp. 261-262.

Figure 1. Agrigento. Reconstructive sketch of the agora (drawing by author).

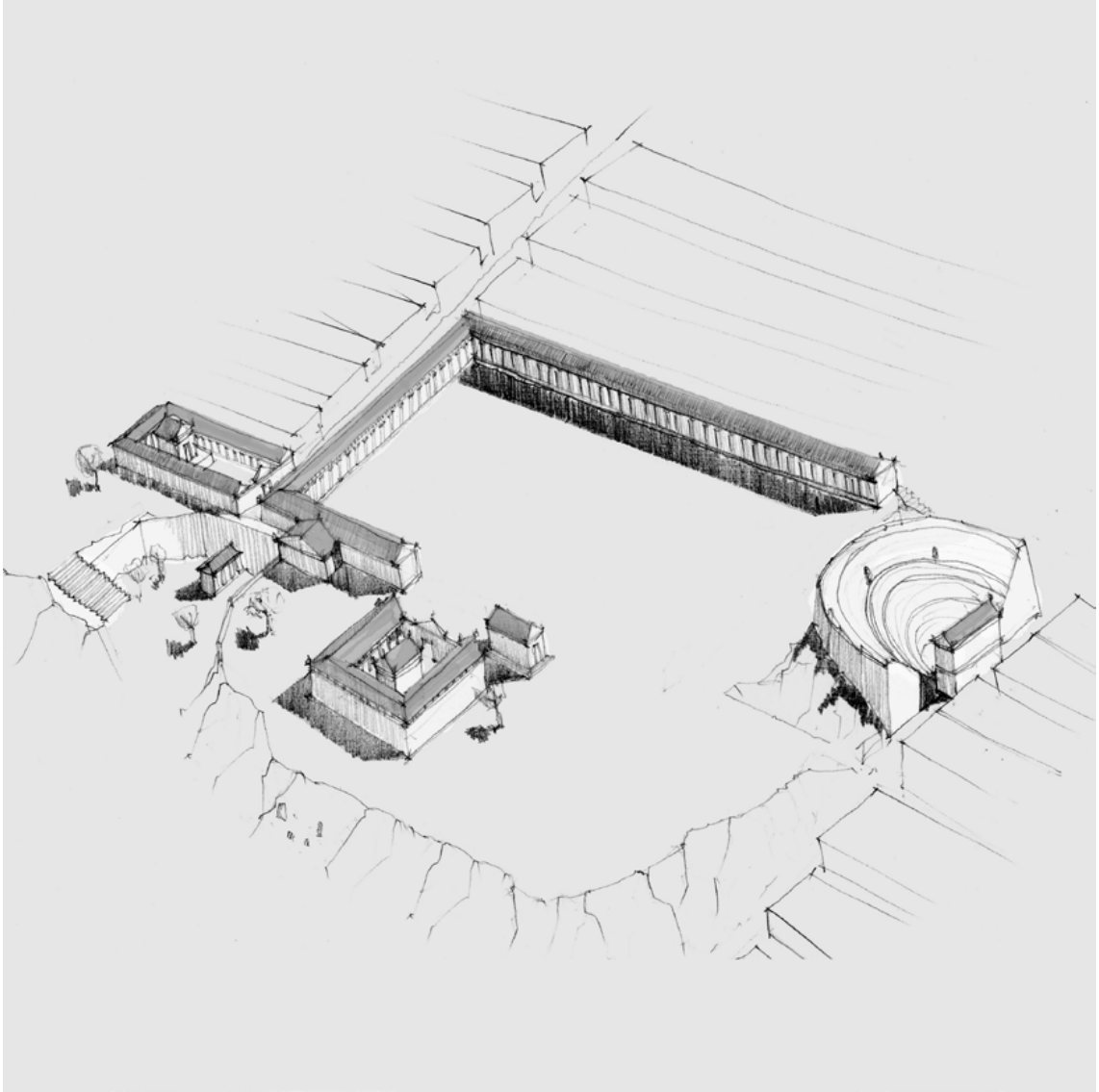


Figure 2. Morgantina. Reconstructive sketch of the agora (drawing by author).

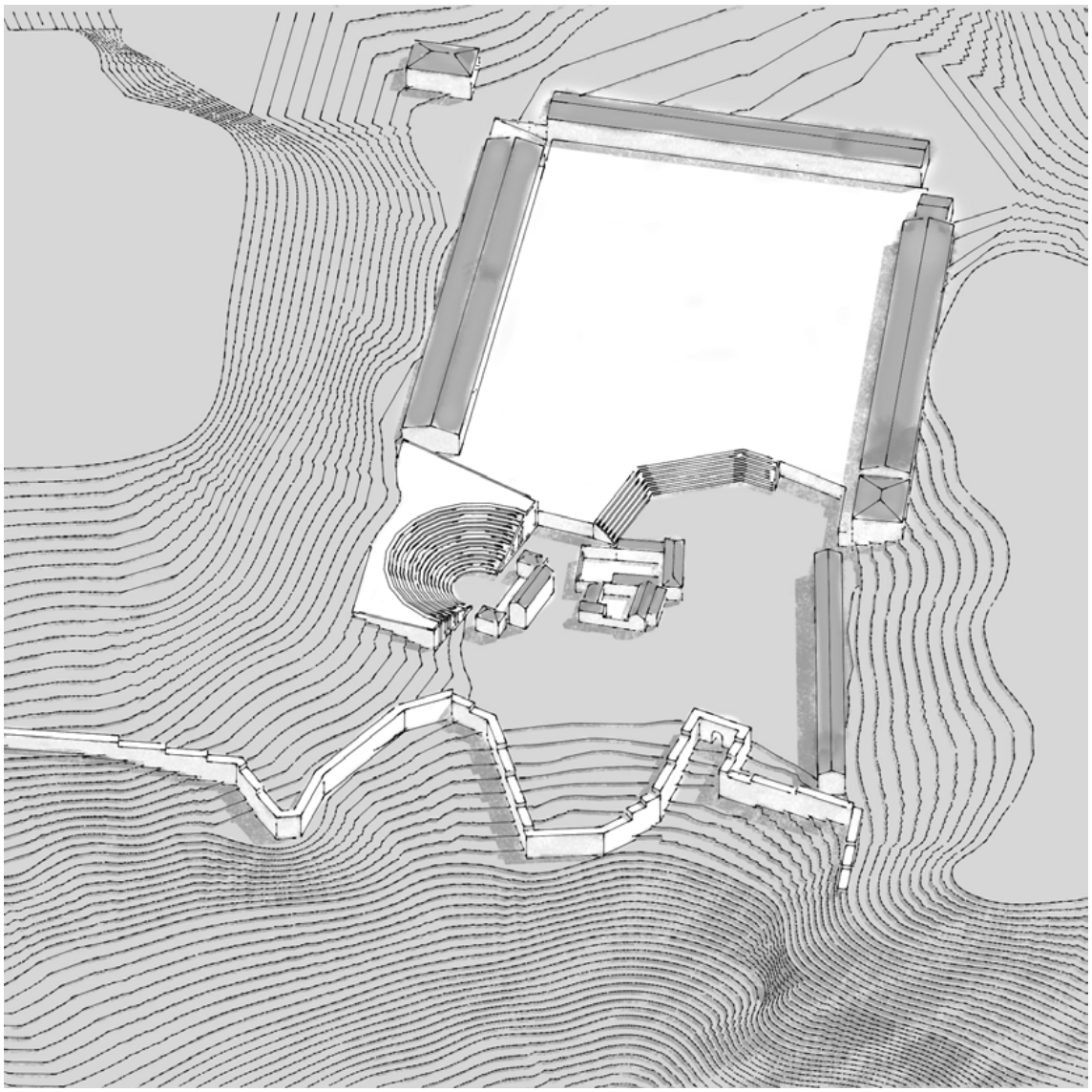


Figure 3. Bilbilis. Reconstructive sketch of the forum (drawing by author).

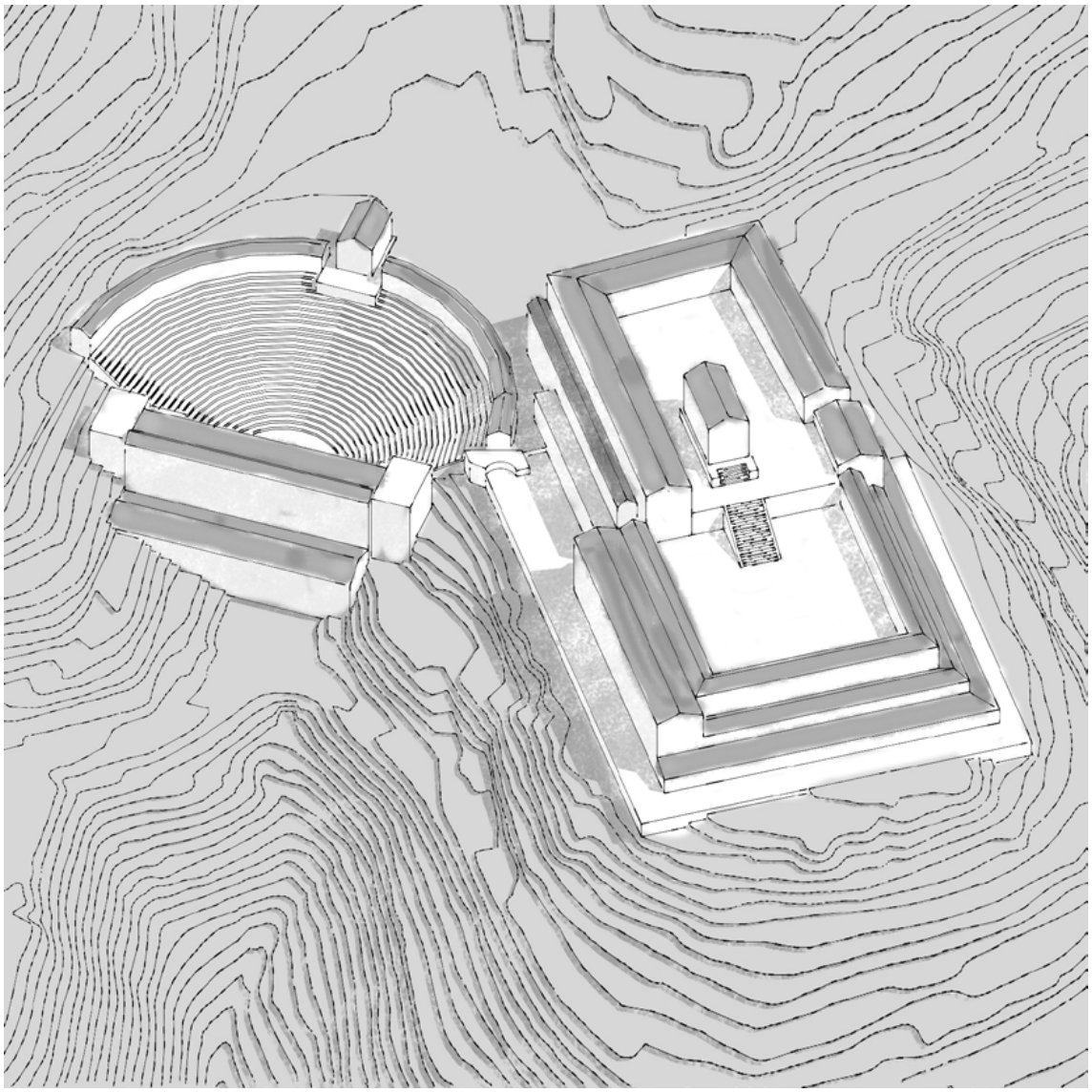
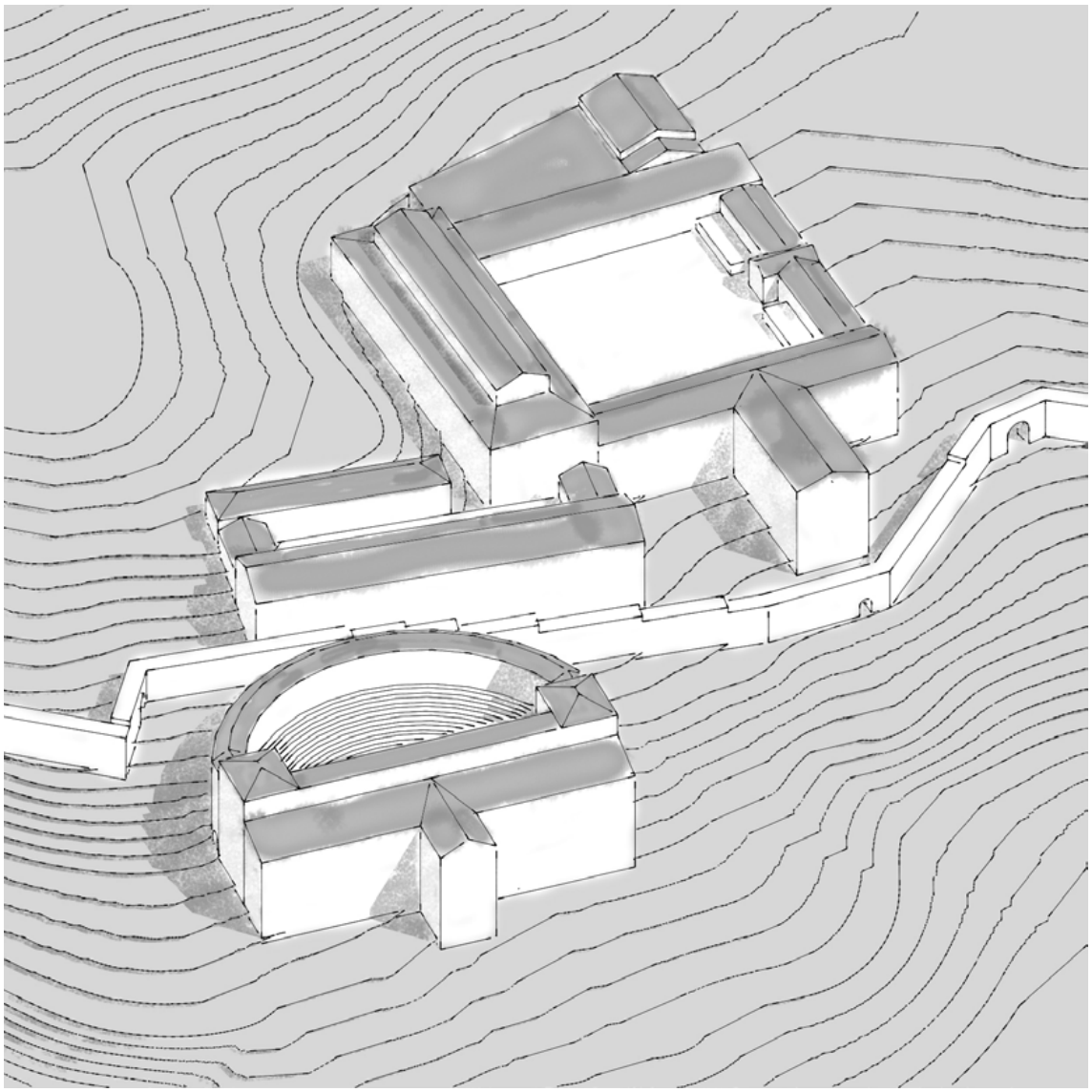


Figure 4. Segobriga. Reconstructive sketch of the forum (drawing by author).



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For a modern rural planning

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An investigation into the relationship between the city and the countryside in a development phase of the world economy dominated by constantly growing phenomena of globalization, urbanization, and the unstoppable expansion of the metropolises, impelled us to analyse the implications on settlement structures and to pose the question of whether it is possible to postulate alternative lines of development.

Starting out from a comparison of ambitious proposals whose common purpose is to transform the territory through a remodelling of the natural and agrarian landscape with radical economic, social and cultural changes and the construction of *new towns*, a *new civilization* and *a new mankind*, an analysis is made of the 1930s interventions in Italy under the Fascist regime with the construction of the "new towns", the implementation of the integrated reclamation schemes in the USA with Roosevelt's Tennessee Valley Authority interventions, and the heated confrontation-clash in the Soviet Union between opposing political factions that saw "urbanists" and "disurbanists" taking sides with the sole purpose of creating a *new mankind* through a new conception of the world.

The research investigates the characteristics of the "foundation city" seen as a strategic hub and an alternative settlement within the scope of the changing relationship between the city and the countryside.

That the world is now globalized and urbanized is a historically settled fact. Less implicit is thinking that this process really is irreversible and that it is still possible to envisage an alternative development in a changed relationship between the city and the countryside.

The theme of the dualism between countryside and city which inflamed discussions and projects throughout the 19th century and up until the middle of the 20th century, seems today to endorse the primacy of the city, or better still the metropolis and the megalopolis, without any possibility of return. However, this process of transformation and continuous expansion of urban contexts occurs causing not a little damage to the territory, the landscape and the populace.

By now it is an established fact that the large cities of the world are increasingly in crisis, manifesting the conflicts and disagreements of the globalization of capitals with widespread destruction of social and economic relations. The profit motive is king, mainstreaming entire regions into the world economy, shifting industrial production and capitals to places where they never existed, creating in these contexts refuges for a growing number of "reject populations"[1], of outcasts and stateless persons; while the countryside, whose agriculture is no longer able to employ all its inhabitants, and where land-grabbing by multinationals is unremitting, is becoming depopulated.

Then again, if in the past urbanization was closely linked to economic progress, this is no longer the situation and urban growth and economic development are not running parallel. Proliferating populaces leaving their rural situation to end up in interminable conurbations (shanty towns, squatter areas and suburban slums), without the expulsion and ejection from the countryside depending on factors of attraction, an offer of employment in the cities, or the possibility of a better life.

This territorial metamorphosis is deluging the entire planet, affecting everyone, and is closely linked to growing global economic processes.

Mass urbanization and the progressive reduction of employment in the agricultural sector have contributed to the abandonment of entire geographical areas, driving centuries-old systems into crisis, with human and social consequences whose full reach has only recently started to be evaluated.

The battles of ideas aimed at denying urban development as continuous enlargement, a spread of construction with a consequent destruction and impoverishment of the countryside, are by now distant.

The utopians of the late 19th century and the intellectuals of the 20th century among whom we can mention in pole position Marx and Blanqui, and then Freud, Benjamin, Reich, Illich, Marcuse, Pasolini, Debord, and many others, all critical of the so-called "welfare society" founded on indefinite consumption and the law of mercantile profit, were among the first to denounce the destructive path that humanity was heading down.

At this point, leaving behind the various formulations of the garden city, the new towns, and the self-sufficient districts of the city-region which fuelled the urban planning research of the last century, can we now return to analysing the terms for a renewed relationship between the city and the countryside? Are we in a position to interpret the phenomena of sprawl and accelerated urban growth and advance the possibility of an alternative development?

In my opinion, it is not possible to provide peremptory answers for such a complex subject, but unquestionably for this change to occur it is necessary to implement profound social and structural changes that can influence production and consumption processes, to initiate a programming and restructuring of settlements, and to restore a balance between displacement of resources and population distribution.

The research, still in progress, seeks to address this issue through the analysis of certain design paradigms and historical parallels, and to focus on projects for "new towns" and "foundation cities" intended as a representation and creation of a new situation that can trigger new models, create new interconnections with production, and restore a functional rehabilitation through urbanization of the countryside.

The focus shifts to the 1930s, the historical period between the two world wars, when territorial and cultural contexts differed greatly from one another, for example, the Italy of

1 See Marcuse H. (1964), L'uomo a una dimensione. Ideologia della società industriale. Einaudi, Turin.

Fascism, the United States of Fordism and the Soviet Union of the Five-Year Plans, which became settings for profound economic, social, political and cultural changes.

Under the Fascist regime in Italy, integral reclamation schemes were implemented, to wit, a total transformation of the landscape with the reclamation integrated by the construction of "new towns", villages and hamlets.

Most of these creations were born hastily and without any formal invitations to tender. However, their intense succession and dissemination across the territory represented a significant countermelody to the coeval architecture and urban planning in Italy.

Within a landscape that had been totally remodelled and geometrically harnessed to control the waters, these schemes created the opportunity for the construction of "new towns" and to machinate the myths and ideals of Fascist Ideology.

Among the "foundation cities", Sabaudia (Figure 1) was considered "miraculously beautiful" since "it has nothing Fascist about it" as Pasolini stated in his famous critical documentary film *La forma della città*[2].

The plan of the city laid out on a *cardo* and a *decumanus*, was developed adhering to the geometrical design of the reclaimed Pontine Marshes.

While the views within the city recall the prospects of Giorgio de Chirico's cities and the scenic settings of Carrà and Alberto Savinio, the town appears rooted in its territory, inextricably linked to the terrain it creates and works and to the agricultural organization that supports it.

As Piccinato wrote[3] in the report on the urban plan: "The landscape represents an element of fundamental importance. Not a simple background but an *ordered* and anthropic *territory* which collaborates with the urban and architectural design."

"These are not *cities* but municipal agricultural centres; […] they are totally unthinkable outside the agricultural organization that supports them and which they serve. Their purpose is not to live at the expense of the reclamation of the land but on the contrary they have arisen at the service of the reclamation: and as a result, their economic operation is precisely the opposite of that of the past."

The design of the town of Sabaudia features a system of orthogonal piazzas delimited by the main public buildings such as the town hall, the *Casa del Fascio*, the seats of various associations, barracks, a cinema, a hotel, and a post office.

With their towers, the *Casa del Fascio* and the town hall dominate the space and create a visual triangulation with the church, its bell tower and the baptistery.

Long straight roads connect the town to the Via Appia and other urban centres. And scattered across this area, in addition to Sabaudia, we find Littoria, Aprilia, Pomezia, Pontinia and a succession of towns, villages, and agricultural settlements which pattern the reclaimed marshland.

"These towns in rational style speak not to reason, but to imagination, with their melancholy and echoing charm that blends marvellously with the reclaimed landscape: so flat, so spread out, so boundless, between the blue mountains and the lagoon's sleepy waters."[4]

Littoria (today known as Latina) was the first city built on the Pontine Marshes with a project featuring a radial pattern realized in record time by Oriolo Frezzotti in May of 1932 and was inaugurated in December of the same year. Maintaining the strong rhythm came the creation of Sabaudia (1933-34, designed by: G. Cancellotti, E. Montuori, L. Piccinato and A. Scalpelli) and Pontinia (Figure 2) (1934, designed by: A. Pappalardo, O. Frezzotti), then Aprilia (Figure 3) (1936) and Pomezia (1938, both designed by: C. Petrucci, M. Tufaroli, E. F. Paolini, and R. Silenzi), and lastly, Guidonia (1937 to a design by A. Calza Bini, G. Cancellotti, and G. Nicolosi).

But not only "new towns" were built. The Pontine Marshes were destined to be developed through the creation of infrastructure, farmhouses, rural villages, and new urban centres. The reclamation project was required to be integral and was geared to a rapid recovery of Italy

2 Pier Paolo Pasolini's La forma della città was broadcast by the RAI on 7 February 1974 as part of a television series "Io e…" created by Anna Zanoli, a student of [art historian] Roberto Longhi and directed in the autumn of 1973 by Paolo Brunatto.

3 Luigi Piccinato, Il significato urbanistico di Sabaudia, in "Urbanistica", III, 1, 1934, pp. 10-24.

4 Alberto Moravia found in: L. Cappellini, P. Portoghesi. Le città del silenzio. Paesaggio, acqua e architettura della regione pontina, L'argonauta-150, Latina 1984.

through agriculture. The transformation of the territory was rapid and total. And its design was developed in such a way that the urban dimension tallied with the territorial dimension. Several farms constituted a village, and a number of villages[5] evoked a town.

Figure 1a. Sabaudia, the church and the town hall.
Consorzio di Bonifica dell'Agro Pontino ("The Pontine Reclamation Consortium"); **1b.** Pontinia, panorama of the west side, 1/10/1938.
Source: Consorzio di Bonifica dell'Agro Pontino, photo archive of Giovanni Bortolotti.

The farmhouses were scattered across the countryside, while the villages sprang up on crossroads or near major roads. In them could be found essential public facilities such as a rural school, a community centre, a surgery, Carabinieri barracks and the post office, in

5 For an insight into the hamlets and rural villages of Italy in the 1930s through a comparison between the colonies and the motherland, see G. Corsani, H. Porfyriou, (editors), *Borghi rurali e borgate. La tradizione del disegno urbano in Italia negli anni Trenta*, Palombi Editore, Modena 2017.

addition to a church, a business centre, and housing.

What these cities-villages-hamlets have in common is the regular geometric pattern of the piazza, communal places intended to impart civic space and create a sense of social belonging.

Figure 2. Aprilia, southwest side - 20/11/1937.
Source: Consorzio di Bonifica dell'Agro Pontino, photo archive of Giovanni Bortolotti.

The figurative model they were often inspired by was that of the medieval city. Designing the landscape and representing the urban centre were the tower, the church, and the town hall. And from the medieval city they also inherited their search for the territorial dimension for a more extensive control and reorganization of the territory whose role was entrusted to various works of architecture.

And most of the time these piazzas do not feature one single geometrical centre but offer multiple staggered sightlines. The civic focus and the piazza had been shifted and displaced with respect to the perspective axes and viewpoints, bringing unexpected glimpses of the landscape and creating an effect among visitors of *alienation*[6], of a distancing from reality.

Even earlier than the Pontine marshland operations, the period between 1928 and 1940 saw one of the most fascinating moments in the history of land transformation in Sardinia. Large unhealthy swampy areas were modified causing not a few changes in the region's socio-economic structure.

In fact, in this period, in the western part of the island, three distinct colonization plans were implemented by different groups: a private company, the Bonifiche Sarde (later SBS), and two bodies governed by public law, the Ente Ferrarese di Colonizzazione and the Azienda Carboni Italiani.

The three initiatives led to the foundation of many settlements in sparsely populated and desolate areas of the island. In addition to Mussolinia, Fertilia in the Nurra and Carbonia in the Sulcis area.

Although starting out from different plans, situations and economic objectives, these

6 A concept theorized by the Russian Formalists for literature and the cinema. Brecht subsequently developed theories on this concept as an epic alteration of common language in acting. See A. Christofellis, Lessico minimo di Composizione in "Quaderni del Dipartimento di Progettazione dell'architettura", Milan 1987, p. 121.

projects were heading in the same direction: to intervene on the territory in a way that had already been tried under Spanish rule and in the 19th century, namely, a repopulation of the region, achieved by taming the land, which would go hand in hand with economic growth.

The prime movers at this time were Gustavo Pulitzer Finali, a Central European architect, responsible together with the Romans Cesare Valle and Ignazio Guidi for designing Carbonia; Arturo Miraglia and a group consisting of Petrucci, Paolini, Silenzi and Tufaroli, the first for the architectural experimentation and the second as authors of the final project for the city of Fertilia; the young Eugenio Montuori and Saverio Muratori, creators of the extension to Carbonia and the workers' village of Cortoghiana, and Giuseppe Pagano for the plan to expand Portoscuso.

In 1928, even before Littoria had been inaugurated in the Pontine Marshes, on the Oristano plain was founded Mussolinia, today's Arborea (Figure 4) described by Vittorini in his *Sardegna come un'infanzia* as being "in cartoon style". In fact, Arborea looks like a stage set and amasses a rich variety of architectural languages: from the eclecticism of Carlo Avanzini to the functionalism of Flavio Scano and the rationalism of Giovanni Battista Ceas.

Avanzini was behind the architecture of the public buildings of a religious, administrative, political and social nature which encircle the piazza in the town centre. These buildings consist of types that feature hut-like façades, rosettes, and decorations in ashlar and trachyte, references not devoid of inflections of the Po-Adige valley vernacular, models from other places, therefore, alien to both the traditional context and the rigid geometric lines of the reclamation.

The plan for Carbonia proposed an idea of the city as an alternative to the contemporary metropolis, a balanced urban dimension that created a sort of polycentric city consisting of three different urban nuclei: Carbonia, Baku Abis, and Cortoghiana, in addition to the 1940 expansion of Portoscuso, never realized.

The design of the central piazza and other buildings saw the involvement of many of the foremost architects of the day. Enrico del Debbio and Raffaele Fagnoni who respectively designed the new Palazzo Comunale and the Palazzo delle Poste, sited opposite one another; Luigi Piccinato who focused on designing a cine-theatre, unfortunately never realized; Montuori who, with every probability, would take care of the intensive housing schemes, the workers' boarding house and the company director's villa. Pulitzer-Finali was to design the workers' leisure centre building, while Guidi and Valle focused on the hospital and the Church of San Ponziano.

Cortoghiana was created as a workers' village to accommodate a population of 5,000 inhabitants at the service of the northern part of the Sulcis mining basin. The project by Saverio Muratori resumed the distinctive characteristics of the scheme developed along with Fariello as a competition entry for the town of Aprilia in the Pontine Marshes.

Modelled on Italian cities but with an eye on European-style architecture, the village became an occasion to construct a new urban centre: the village took on an urban character.

The ground plan followed a rigid orthogonal grid aligned precisely to the *cardi*nal points. A large avenue, in part tree-lined, crosses the entire ground plan developing in an east-west direction and connecting the two piazzas positioned as "gates" to the city: one to the east with the workers' boarding house and the other to the west as the heart of the town's social and civic life.

This large L-shaped space almost entirely surrounded by buildings with one or more storeys containing shops and housing and featuring high porticoes, is striking for its urban bearing and for being so out of scale with the context.

All of this was to happen in other places throughout Italy, and not only. The reclamations and creations of cities, towns, villages and agricultural towns was common in the territories of Puglia and Sicily, but also in Libya, and on some of the Aegean islands.

Meanwhile, in Roosevelt's United States, a period of prolonged drought accompanied by an excessive exploitation of the land and mismanagement of natural resources had led to the whole Tennessee Valley area plunging into a period of severe economic difficulties that were problematic for the survival of its inhabitants.

The result was the rapid enactment of the "New Deal": a bold programme of economic

and social reconstruction through major public interventions and reorganization whose primary objective was to rescue America from the ongoing crisis, from fear, hunger, and the possibility of a revolution. This vast programme of regional planning and control of natural resources saw the start of construction along the Tennessee Valley of several dams and lakes to produce and distribute hydroelectricity, to control flooding, to allow the transport of goods and encourage afforestation, restoring the fertility of fields for too long over-exploited.

As for the coeval Italian foundation cities, the commitment and size of the TVA undertaking (Figure 5) ended up becoming national in scope. Reclaiming and drying terrains, altering watercourses, colonizing, founding new villages, towns or communities; the building of a "new world" became the main objective.

Figure 3. Arborea, the church - August/2007.
Source: Photographic Archive of Micaela Bordin.

If the integral land reclamation in Italy accompanied by the foundation of "new towns" had maintained the character of a project that was essentially agricultural, distinguished by a strong relationship with an anthropic territory and by a dependence of village, farm and town on the surrounding countryside, the Tennessee Valley Authority focussed on a synthesis between agriculture and technology. The New Deal aimed to build a new world through integrated development.

The TVA presented itself as a tool to bring about democracy and a welfare state. The dams and the various public buildings such as power stations, warehouses, villages, drinking water plants, and premises for exhibitions and workshops were not just confined to their realization, but became a planning experiment brimming with symbols and meanings. To quote from the writings of Julian Huxley[7], these buildings were designed as eye-catching monuments to

7 Huxley in his famous TVA. Adventure in Planning, with images and short texts, analyses all the points of the TVA programme. This book was intended to promote in Europe the "democratic planning" experiment carried out by the Roosevelt administration in the Tennessee Valley with the hope that a similar experiment could be achieved

modern times and represented "the pride that a nation has in itself" and built "the equivalent of medieval cathedrals or Renaissance palaces" capable of sketching "new acropolises" to initiate a "new civilization" and become a symbol of the times, while the farmworkers of Oklahoma, as described by John Steinbeck in *The Grapes of Wrath* became the heroes of a new mythology.

Finally, in the Soviet Union, in the same years, between 1928 and 1932, that is to say, in the years ranging from the NEP to midway through the first Five-Year Plan, there was a heated debate over the procedures for planning and building cities. Among the key issues was that of understanding how to respond to the non-stop growing urbanization – especially of the city of Moscow – with an abrupt change from a mainly peasant society to an urban society. Added to this was the strong incentive towards an industrialization of the State, a mechanization of agriculture, and the advance of the cultural revolution and economic growth.

The Soviet architectural avant-garde responded to these proposals for change by forming into two ranks with differing and opposing visions in the macroeconomic and macrourbanistic fields: on the one side were the "urbanists" in search of a new type of alternative settlement to the city founded on economic and sociological assumptions completely different from those of capitalist society; on the other the "disurbanists" and the inevitability of imagining the fragmented city polarized through the foundation of small and medium-sized settlements scattered across the territory where industrialization and development would prioritize the countryside and not the urban centres.

Among the urban planners, the main theoretician and spokesperson was Sabsovich, the author of *The city of the future and the planning of socialist life and The USSR after another 15 years,* who, in the face of a scheme that focused on the expansion and enlargement of existing cities, proposed their decentralization according to a predetermined plan within a territory of a 30-50km radius. This would define not only new towns but also new organizational, administrative and cultural centres, as well as new production hubs which could be industrial or agricultural.

At the same time as this "urbanist" hypothesis arrived the proposal of the "disurbanists".

For Okhitovich and the disurbanist school, it made no sense to speak of a "socialist city" since the city as a form was a representation of the capitalist settlement and as such was inseparable from its fundamental evil, urbanism. The disurbanists therefore identified themselves as promoters of the nullification of urban centres and any form of compact territorial settlement, wanted total decentralization, and suggested urban aggregates along main roads which would lead to both industrial and agricultural workplaces.

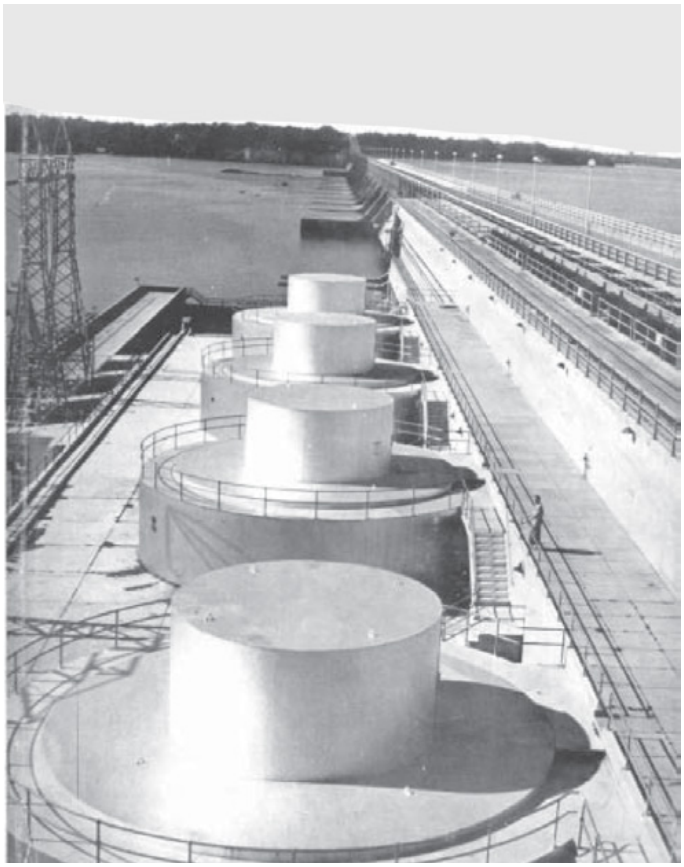
This settlement idea found a partial application in the 'green city' projects for Moscow, in the design of the Palace of the Soviets by M. Ginzburg and the SASS federation, and more explicitly in the Strojkom Group's project to construct the new city of Magnitogor'e in the Magnitogorsk area. Here came the proposal of a linear city consisting in a parallel territorial distribution of transport infrastructure, industries, parks with amenities, housing, and agricultural areas.

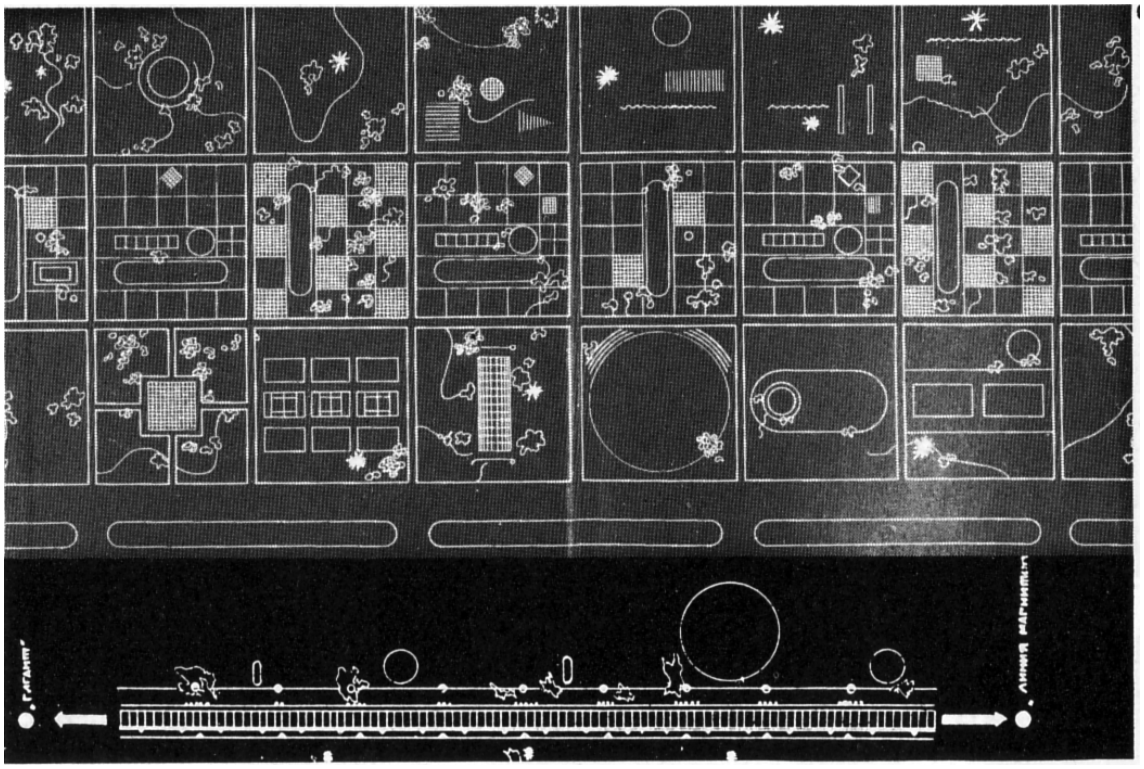
At this point, resuming the gist of the research and arriving at some conclusions, we feel in a condition to advance the hypothesis that the process of urbanizing the planet is not truly irreversible and that it is indeed possible to imagine, in the face of the crisis of the late-capitalist economic model and the emergence of market and globalization alternatives, some potential new settlement strategies in which architecture will be able to assume a significant role by inducing changes in users' behaviour.

Within this context, the term "foundation" is understood as a strategic settlement hub in a position to trigger a more thoughtful intervention policy which can structure new urban and territorial areas by introducing more complex links.

in the Danube Valley under the name of DVA, albeit in different environmental conditions. In this way, it would be possible to propose the "the world's discussions of that enterprise and suggest[s] the practical methods to be employed in running it," J. Huxley, (ed.) The Humanistic Frame, Allen and Unwin, London, 1961.

Figure 4a. View of a TVA dam
Source: Julian Huxley, TVA: Adventure in Planning, The Architectural Press, London, 1943; **4b.** View of a TVA dam
Source: "Hinterland", VI, 28 December 1983-March 1984.





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Morphological change in the mediterranean cities

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The research objective is to define a theoretical model able to understand the current conformation of Mediterranean cities. The definition of the model is to be understood as a morphological configuration of urban contexts: the aim is to allow the taking vision from which to build alternative models capable of establishing new relationships between the elements of the case study, thus determining the morphological change of the reference model .The formal criterion by which it is possible to read the territory is the territorial room: this is observable from two privileged floors, the first facing the sky and the second on the horizon, where the condition of opening to the sea offers itself as an ideal section of the room . This particular condition allows one to observe a historically constructed scene, that is, codified landscape. The reading of the territorial rooms hosting the Mediterranean cities makes use of the indications emerged from the contemporary debate on the landscape, hence the position to set the study on the visual characteristics of the objects present in the study area.The modeling takes place through the redesign of the area through two plans of projections peculiar to the open territorial room and thanks to the use of representative methods such as bird vision; these tools are a first form of communication between the observer and the object and provide a synthesis of the observed phenomena: a mechanism of communication between the world and the mind.

Dialectic between City and Nature

A first question necessary to understand the contemporary urban and territorial condition concerns the dissolution of the rural environment in the urban areas: the presence of this theme, within the debate on the city from the second post-war period to today, finds its reasons for the appearance of phenomena urban areas first circumscribed to certain metropolitan areas and then increasingly rooted in most of the territories.

The Italian architectural culture contributes to the debate on the dialectic between city and nature through the long research that starts from the premises of Ernesto Nathan Rogers, with the themes of the "ambientismo" and the "carattere locale" as added values that the buildings had to have, and from Giancarlo's positions De Carlo and Ludovico Quaroni against the Italian urban planning tradition, in favor of the concept of great scale as a new dimension for architecture. The scenario in which the architectural culture of the sixties moves is marked by the attempt to describe the new dimension, «that is to prefigure a planning hypothesis able to compose architecture and urban planning through a leap of scale (not only dimensional or functional), interpreting the new urban impulses. If one compares the architectural language composed of the architecture actually created and the metalanguage, which concerns the drawings, writings and resolutions, it is possible to identify precisely the most indicative thoughts of the new dimension in the metalanguage». The attention placed on the « passage from the walled city to the metropolis without borders and without solutions of continuity, which penetrated with its streets and its production centers throughout the territory» (P.Belfiore, 2002) identifies new terms with which to describe the phenomenon, morphology is one of these. Since the beginning of the sixties it has been used with two meanings belonging to two schools of thought that nourished the Italian architectural debate on the theme of urban design: «on the one hand the morphology was used as a complementary and opposing term with respect to the notion of typology to indicate above all in the urban field, the rules of aggregation of the building types that preside over the formations of fabrics and parts of the city as a whole. On the other hand the word morphology, more sensitive to its geographical origins (especially in the French version of the 20s and 40s), was applied to the architectural knowledge of complex territorial systems, accompanied by concepts such as context, place, position, in the search for settlement rule of a specific territorial field. The first of these interpretations had been developed above all in the schools of Rome and Venice according to a line that went from Muratori to Aldo Rossi, the second to Milan and again to Venice from Samonà to Vittorio Gregotti, while Quaroni on one side and Rogers from others had defined important variations» (V. Gregotti, 1985). It is possible to understand how the growing interest in the themes related to the territory and its complexity relate more closely to the category in which the author of the article, Vittorio Gregotti, who published in 1966 Il territorio dell'architettura in which he explores the relationship between anthropogeographic landscape and architecture, establishing an innovative point of view with respect to contemporary experiences: : «it is the disenchanted eye that runs through the expanse of the geographical space, recognizing the silent and mysterious signs that make it historic, of the culture that has appropriated nature and nature that seems to come forward to challenge new cultures to renewed takeovers. This means reading the territory, in its physical form, as an archaeological structure, which does not require restoration or completion. It is no longer the city the privileged seat of the mémoire, it is no longer the built the sea in which to dive for wonderful peaches. The theme of environmental presences has made a leap in scale, involving an entire design methodology and the poetics to this subtitle» (M. Tafuri, 1989). Another point of view that is worth highlighting is that of Quaroni, who in addition to the substantial theoretical production has managed to fix in a dramatic way his vision of urban design in some large-scale projects, including the competition for the CEP Barene district of San Giuliano and its direct derivation in the study for the urbanization of the lido di Classe in Ravenna and the PRG of the municipality of Bari, in this last one more than in the others it is possible to retrace a method of representation of the territory among the projects reminiscent of the abstraction used by urban planners and which clearly recalls the studies of Kevin Lynch carried out in The view from the road. It is precisely the definition of the morphological problem as set by Quaroni to determine a type of design, understood in its double sense of representation and design: «however, it will be possible, but with great caution, to talk about the general form of the city, meaning the non-expressive figures, not of design in the creative sense with which we have used the word that, on the elaborations of regional planning, have configured the distribution of weights, for the city, and that perhaps it would be opportune to call, if it is possible the convention, morphology, or morphological

hypothesis, so as to maintain - as in analogous cases of biology or crystallography - the idea of a form which, however, clearly does not has nothing to do with the expressive, architectural form. That is, it will be possible to talk about the urban model of the city» (L.Quaroni,1967). The strongly structural vocation that Quaroni gives to the design of the large dimension interprets the graphic method used by Kevin Lynch, shifting it from its pre-existent status to become a vehicle for the formal design of parts of the city.

The Landscaper as Form of the Territory

Delimiting the field of architectural intervention through the concept of landscape is a very complex operation and not without misunderstandings, as there are different interpretations on the status of the project in the landscape: terms such as urban landscape, urban design or the third landscape project of Gilles Clément turned to the unorganized, residual landscape and its recovery are an example. The aim of the architects' generation just presented was to establish a new limit for the architectural project, identifying in the concept of territory and more specifically of landscape, the possibility to access a new material for the project, fundamental to define the principle settlement with which to intervene in the context of the new dimension offered by the city: «the construction of the motorway networks, those of the new railway and air structures, the equipment of the coastal zones most favorable to summer tourism and the mountainous regions unsuitable for agriculture to accommodate the winter are the visible traces of an essentially urban activity [...] in these conditions, there is no doubt that the territory, by vague that remains its definition, now constitutes the unit of measurement of human phenomena» (M. Jacob, 2009).

The landscape in its being above all a cultural construction can read the multiplicity of transformations that affect the territory, from changes concerning the earth's morphology to the most minute human actions that irremediably intervene on it as an object of construction, «this need for a collective relationship lived between a topographic surface and the population settled in its folds allows us to conclude that there is no territory without the imaginary of the territory. [...] These different translations of the territory into figures refer to an indisputable reality: that the territory has a form. Indeed that is a form. Which, of course, is not said to be geometric» (A. Corboz, 1985). In this sense the landscape reading of the territory allows us to observe a configuration of the same, observation is never simple contemplation but offers itself as an operative tool for architectural design: «the landscape, better still the anthropogeographic landscape, is therefore not only what pre-exists the project sometimes in a cogent manner, but also what is capable of suggesting its own modifications, of opening up to the dialectic of new systems» (V. Gregotti, 2011).

In the special issue dedicated to the 'Forma del territorio' of Edilizia Moderna, edited by Vittorio Gregotti, the 1964 thesis of Salvatore Bisogni and Agostino Renna is published: 'Introduzione ai problemi di disegno urbano dell'area napoletana'. The study focuses on the possibility of bringing to the fore, as a material for architecture, the concrete physicality of the concept of nature. The general hypothesis is based on the concept that the landscape can be understood as a formal structure of the territory, therefore intended as a field of investigation and specific intervention of architecture. The presented study intends to establish a methodology of reading the territory through a series of investigations and experiments concerning the Neapolitan area: the authors argue that the survey is not carried out in a linear way but presents, in its evolution, rethinking and intuitions that move from project hypotheses on the object of study in question. Fixed point of this study is the ability to convey some design ideas that influence the reading of the territory and its graphic restitution for models, which can be both figurative and diagrammatic sometimes even simultaneously. The considerations from which the study starts concern the historicity of the landscape, understood as a dialectic between society and nature, codified by the phenomenon of territorial morphology, and that of nature understood as a semantic system. What follows is a wider system of signs in which the orographic qualities and signs typical of the nature system allow a hierarchy of the building fabrics. The result is a design «not to be understood as a visually well-ordered set, but as a field of formal relations between the constituent elements: it is also to say that it is not the strictly aesthetic qualities of the buildings that define a possible scale of values, how much the role, the quantity of incidence that each element or set of the field possesses» (S. Bisogni, 1965). However, this methodology of reading the territory is incomplete, or it is impossible to maintain a relationship between urban tissue analysis and the overall assessments provided by the general formal model, this condition is inevitable

for a method that is aimed at achieving operational objectives concerning the large scale, moreover this experience shows the crucial difficulty that architecture, especially Italian, had to face in the second half of the twentieth century or how to move from the analysis to the project: «There is no doubt that the analytical method itself, through the reductionism of its morphological repertoires, tends to select at least the possible alternatives. Thus the city and architecture present themselves as the assembly and articulation of a few permanent and immutable elements, with an almost metaphysical idea of their importance; combining in a non-mechanical but compositional way, they lead to define the entire field of possible design operations. But even so, it is not possible to eliminate the moment of free choice, of the design decision; but perhaps the problem is that, in the desire to reduce subjective risks, this moment has never been theorized in an exhaustive form» (I. de Solà Morales, 2001).

Figuration as a Purpose

The condition identified by Solà Morales opens up the problem of figuration as a formal definition of one's choices in which the results of the analysis converge, aleatory. It is necessary to dwell on this moment of the project in order to understand how the image of the territory useful for project speculation can be constructed, thus removing the categories in which the large-scale project has been locked up, unrelated to the more specifically architectural and transformed issues. In a great unfinished project.

«Measuring and representing nature, on the one hand, designing and transforming nature, on the other hand, appear to be the two polarities, the limit conditions of a relationship with nature that has always characterized man's intervention, and Goethe, at the dawn of new times and on the threshold of new worlds, proposes with great clarity. [...]

Because designing, drawing, transforming are the actions through which man affirms and realizes the habitability of the world, the spaces granted to his existential planning: but next to the forms of rationality, to the figures of great abstraction also the signs transcribed by nature , the morphologies of natural materials, the organization of the original landscapes have been recovered from contemporary culture as languages and systems that can be practiced» (C.Dardi, 1985). With these words, Costantino Dardi places the contemporary project in relation to the discourse on the territory and indicates the dependence of the choices with respect to the conditions offered by the same, this attitude does not appear as new, but rather is intrinsic to architectural design: a binding instance of the project. Another aspect, which is important to bring to the attention, concerns the scale of the architectural project in the landscape. Generally, the image of large-scale interventions is associated exclusively with the utopian and experimental tendency of which we can recall some paradigmatic examples such as the seat of the University of Calabria of 1979 by Gregotti or the Corviale di Mario Fiorentino of 1984. However, there are other projects that deal with the territorial dimension in a different way: the project of Giuseppe Samonà for the Palazzata di Messina, a 1931 competition realized in part until 1958, is to be considered as a large square of water, inserted in the geographical context of the Strait of Messina. The project reconstructs the pre-existing Palazzata destroyed by the earthquake of 1908, in doing so the ambition is to unify a part of the city through the formal qualities of the buildings, similar to how the Palazzata di Simone Gullì had to be destroyed by the earthquake of the 1783, thus solving the problematic condition imposed by the announcement that required a structure with separate blocks.

Just the extraordinary awareness of the territorial dimension determines the character of the intervention, a place of representation of the city that is based on a clear and recognizable urban typology like the square, dilated and partly open to accept the topology of the strait; the other example is the Agip service station of Costantino Dardi and Giovanni Morabito built in Mestre-Bazzera in 1971. A typical station named Kaaba that would have arisen at the entrance of the Venice-Mestre motorway network, but of which a single unit, characterized by an iconic ten-meter-long cube rising above the station. The cube is made with a spatial lattice structure, covered with acrylic resin reinforced with glass fiber to allow the light to shine. The idea, at the base of the project, derives from the intention of setting the territory at the gates of Venice with recognizable landmarks and capable of giving a structure to the landscape through the triangulation of the twin stations. In the two examples cited, there are substantial differences, not only in the scale of the intervention, but also in the languages used and in the formal choices. The scale, to which they address, however, is the same: that of the landscape. The field of action involves a portion of territory determined and recognizable, geographically codified and which poses a problem related to aesthetic

enjoyment, which can be experienced through the architectural project.

If figuration understood as a formal definition of one's own choices belongs to the subjective sphere of the architect, we can not say the same of the requests emerged from the considerations on the form of the territory and its analysis: from the reduction of the elements in figures to their organization in an overall conformation of the territory it is possible to construct a transmissible method that can be applied to different scales. In the landscape scale project we can then identify a pre-figurative phase that is still describable and therefore communicable, in which the area of interest is delineated and the field of project possibilities is defined; a phase, this, in which the formal structure that precedes the moment of synthesis is traced. The phase just described represents, in a certain sense, the background in which the figure of the architectural project is inserted.

The Limit of the Field: The Territorial Room

The value that the landscape vision of the territory has had in the Italian architectural experience from its most ancient origins to the threshold of modernity is undeniable. It has established a harmonious link with the natural presences understood both as the ground in which to found the buildings, and as a horizon to which they are addressed. The dimension measured together with the complexity of the morphology of the territory, allows to identify circumscribed visual areas, recognizable interiors that have the characteristic of juxtaposed and independent rooms in which the relationships between different settlements in terms of distance, both spatial and temporal, are absolutely proportional to the human dimension. Hence the recognizability of the rooms and the vision of their form. In this sense, the territorial room, an expression coined by Franco Purini, is a far from abstract unity in which the multiplicity of phenomena finds a common attribute, a part of the identified geographical unit. The delimitation of the territorial rooms is given by the various entities present as the mountain formations in all possible forms, the water courses and the sea, also there can be a coexistence of territorial rooms on the same part of the territory, in the sense that the scale with which you can read it, you can identify a macro room that contains others. In this case, we can interpret this condition as a society of rooms, therefore a system of rooms subordinated to a geographical condition with an unavoidable identity: an example of this condition can be the area occupied by the Marche region and Abruzzo, which conforms as a system of parallel mountain chains alternated by valleys furrowed by watercourses. This area constitutes, at the national scale, a homogeneous system of geographic entity divisible in more limited isomorphic systems, different from each other for the variations that can be appreciated only on a smaller scale. There are two floors facing infinity towards which the territorial room looks: the first is the sky, the second is the horizon. Due to the fact that they have a privileged relationship with the horizon, the coasts are presented as a special case of room, definable open, in which it is possible to observe the totality of the landscape on the orthogonal to the zenithal plane. they therefore present as ideally sectioned. «Thus, even if we want to consider the limitation in its purely physical, material and phenomenal aspects, we are still brought back to the same problem that we have on the conceptual logical plane. The limit, necessary for the identification of facts, does not have the capacity to summarize the facts themselves and their specific properties, their identity; rather it constitutes a sort of indicator of the circumstance that those properties, which it is not able to illustrate, do not act in any condition, but are in fact, subject to a limit, to a law. Reasoning on the idea of limitation thus always leads to reasoning on the principles, on the very nature of the facts of which we seek the limit, with the result of a deepening of the facts themselves, their rules and their properties, rather than on the characters themselves itself of the limit» (V. Pezza, 1993). In this sense, the particular case of the coast, delimited by the section of the sea, constitutes the field of analysis with which to understand the territorial and settlement structure of the hinterland. The limit of the field (for example the theme of the waterfront) is not the object of the analysis, but the relationships between the elements that compose it, observed in the ideal situation in which the objects are present on a historically constructed scene, or codified landscape.

Morphological Change

«The primitive plant becomes the most surprising thing in the world: for it nature itself will envy me. With this model and with its key it will be possible in fact to invent plants to infinity, that will be perfectly consequent- and that, although without existing in reality, could

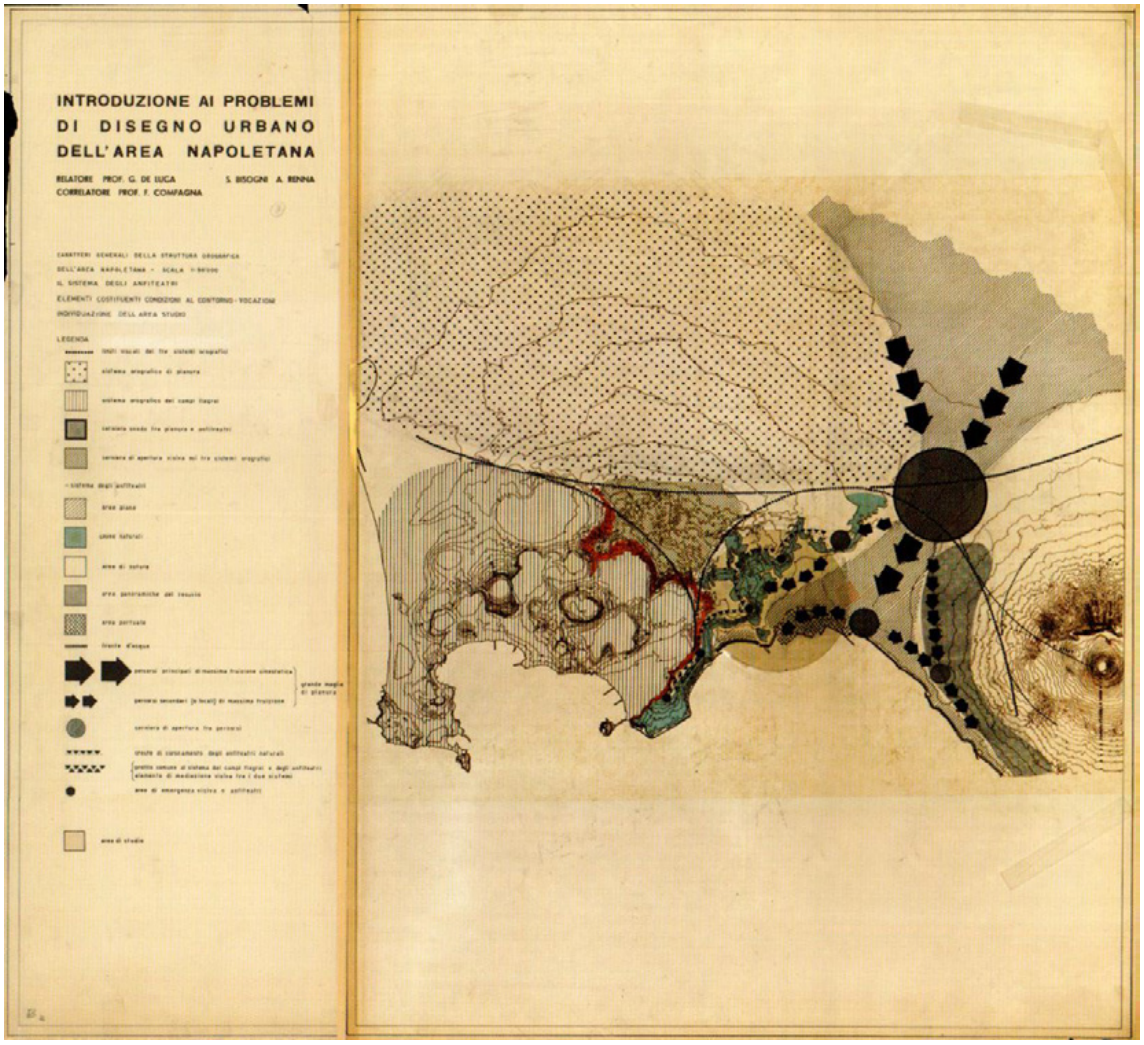
nevertheless exist. Therefore they will not be mere shadows or pictorial appearances, nor even poetic, but will have an inner truth and necessity. The same law can therefore be applied to all living beings.

On the other hand, how could I recognize that this or that form is a plant if they were not all modeled on the basis of a single model ?» (J. W. Goethe, 1790).

In 1787 for the first time, Goethe uses the term Urpflanze during his trip to Italy. The term indicates the original plant that the author imagines to find during his visit to Palermo. In the passage quoted here, he expresses the ambition to discover the secret of the infinite variety of the plant world, this secret is placed in the definition of a model, or of a form of life able to explain its unlimited ability to generate variations. It is interesting how such a prodigious generative capacity can be traced back to morphological characteristics, rather than to those concerning scientific fields, such as chemistry or biology. Interesting because, on the morphological level, it is possible to establish an analogy with the architectural discipline, therefore to understand as the cause or meaning of the sensible expression, nothing but the form itself able to explain itself. From this point of view, the analysis of the form of the territory has as its objective the definition of a formal model able to summarize the peculiar characteristics of a given portion of territory. In doing so, one delimits a part of nature, by its own constitution, missing measure (a-peiron) to make it first nominable, then habitable and then object of the architectural project. The definition of the model is to be understood as a conformation, relationship between the architectural figure and the pre-figurative background, able to explain the morphological configuration of the territorial room. This conformation comes in the form of a model and not of a type: formerly Quatremère de Quincy, in its famous definition, distinguishes the type from the model, due to its finiteness with respect to the type, which remains vague and indistinct on the figurative plane, in how much structure of the form. The complexity of the territorial room does not allow a reduction to a type that is exhaustive of its own characteristics, even more so if the lens, through which the phenomenon is observed, is that of the landscape: in this way noetic vision and outright vision of the phenomenon they are co-present. As for Urpflanze, the aim is to allow the taking of vision from which to build alternative models, able to establish unpublished relationships among the elements present in the territorial room. When the architectural work appears against the background of the territorial room, it is able to establish this shift of meaning, or to implement the morphological change of the territorial room, a condition that, similarly to what happens in the plant world, allows the survival of the more and more compromised anthropized territories.

Figure 1. Palazzata di Messina 1623.

Figure 2. Bisogni, Renna.



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Void(s): excavations, clearings and caves

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The void is the protagonist of architecture: it is the scene where our life takes place, it is where we move freely and man can define himself. The void in architecture lives on the full and the full lives of its emptiness. These two assumptions mean that architecture and the city are in fact a space, before anything else, and consequently that planning is a synthetic result of a process that has as its first and absolute intentionality the emptiness itself. Three types of vacuum apologies in architecture are always interesting to me and can be summarized in their archetypes, that are formal actions too: the excavation, the clearing in the wood and the cave. A widely used technique of reading and representation is the 'poché', used in the Nolli plant or by the Mateus brothers. Each of them can be read with this technique, but for each archetype you can enrich the method, by virtue of variations and constants that are typical of the matter they are made of, the cultural environment in which they live and the climate, this for not adopt a mere composition reading free of semantic information, intentionality and conscience of man as a thinking being that defines the reality that surrounds it. Nature in fact becomes architecture when a delimited space of it is occupied by man, is conquered and man interacts in a complete sense with it. In the history of architecture we have remarkable 'exempla' that could be distinguished by their apology of the void but the real goal is to 'how to look at' spaces generated by emptiness. The first of all the means is to read the void and its fullness, the matter of which it is composed. Francesco Venezia stressed that 'the return of interest in the underground world is an expression of authentic modernity and one of the conditions for the affirmation of modernity' and I believe that the critique on this issue can be a useful starting point to live today in a world more aware of the reality that surrounds us, or the Earth, which has an under and an above, a womb, a crust and the sky.

Introduction

The emptiness in physics is the absence of matter in a volume of space. When a vacuum is created, the matter present in the volume is evacuated. Space absolutely free of matter; free area that allows movement.

The void that will be referred to is the emptiness that has been subtracted from his original solid place; to be precise, the void in Bruno Zevi definition of the architecture:

"Architecture is like a great carved sculpture in which man penetrates and walks" (Bruno Zevi, Saper vedere l'architettura, Giulio Enaudi Editore, Torino, 2004, p. 21).

The void in architecture lives of the solid and the solid lives of its void. This assumption means that architecture and the city are in fact a space, before anything else, and consequently that planning is a synthetic result of a process that has as its first and absolute intentionality the void itself.

Francisco and Manuel Aires Mateus (2010) write that space is a void, a handful of air enclosed by matter that defines the limit. Its precision coincides with the necessary existence of its surroundings, which gives it identity. Drawing spaces is to draw life possibilities - of movements and impediments - materializing the limit.

The void is the protagonist of architecture: it is the scene where our life takes place, it is where we move freely and man can define himself. The void in architecture is the absence of matter. The matter defines a void and the void comes to life becoming matter. For Jorge Oteiza "the void is something that is obtained - naturally or artificially (as happens in physics, the vacuum does not exist). The void comes to be the presence of an absence. Conquest of an evacuated space, available, in which remain traces of the laborious process of subtraction and elimination." (Jorge Oteiza, quoted in: Carlos Catalan, Oteiza, El geniio indomenable, Ibercaja, Zaragoza 2001, p.26)

The void therefore can have different declinations and meanings: it can be translated as absence, but also as a gap. As a trace of an evacuated presence. For Lucien Febvre every age invents its void and its silence. In many respects, therefore, the void in architecture is the very meaning of architecture: space.

Identifying space is however difficult, as well as understanding the entity. Heidegger comes to meet us: "in the word space does the making - or leave - space". It means giving two values to the 'void': the first of compositional action, that is, referring to the architectural activity. The second of empty spatiality, in which the term is considered with an appreciable entity, as a matrix itself of the composition.

For these reasons, building a vacuum means choosing and measuring a precise dichotomy of intentions that can - or must - be opposed and complementary to each other: the built void can produce disquite (as in the case of prisons or the concentration camp) or emotion of joy; the void of a space can generate calm or sadness, it can put order or make a place missing, it can promote free actions or it can cancel such actions and prevent and obstruct the interaction between things.

Quatrémere de Quincy in fact describes a widespread expression that is part of the language of architectural criticism, that is, the "voids and solids". It's not a coincidence that a concept has been defined through a word and its opposite. Through a comparison with classical music, he shows how the way in which we adject a place - and this is done by establishing a precise relationship between void and solid - we can attribute a certain feeling to the void as in music; it will be based on the steps, the silences, the tones, a work can be classified, in music, as forte, adagio, presto, piano, andante, allegro; so in architecture a prevalence of matter respect to the void - as in the pyramid - will produce a sense of antrum, of grave, of silence, compared to a prevalence of void with respect to the matter - an empty room - it will transmit various feelings on the basis of how one emphasizes one thing rather than another.

Giovanni Marras in the *vuoto* (void) voice of the *Enciclopedia dell'architettura* defines the excavation (scavo), the clearing (radura) and the cave (antro) as archetypes of the void understood as the "place" of the individual projection of the self, which becomes "room", private man's custody. (Quote in the work of Spirito G., *Forme del vuoto: Cavità, concavità e fori nell'architettura contemporanea*, Gangemi, Roma, 2011, p. 35.)

Firstly, we want to proceed to a terminological and etymological analysis to derive the basic definitions of the concept of cave and clearing and of the principle of excavation and subtraction that underlies it.

Scavo (excavation): s. m. [Der. to *scavare* (digging)]. - 1. The act, the operation, the fact of digging, especially in building constructions, in order to create in the ground the flat space necessary for the planting of a building.

Scavare (digging): v. tr. [Lat. *excavare*, comp. to ex- and to "make cable" (see *cavare*)]. to. Remove earth from the ground. b. Form a cavity in the ground.

Cavity: space obtained naturally or artificially within a solid mass.

Cave/Antrum: s. m. [from the lat. *antrum*, gr. ἄντρον]. to. A natural or artificial cavity that opens into the side of a mountain or a rock: c. of the Sibyl; b. Fig. Dark and gloomy environment.

La *radura* (the clearing): s. f. [Der. to *rado]*. Zone where the elements that make up a compact set become sparse or sparse; more often, and with sign. specific, space of land, mostly grassy, devoid or almost of trees.

Clearings and caves are in fact sons of the same formal principle. It's the principle of subtraction, excavation, material extraction from a homogeneous solid, whether it be stone, earth or even a dense set of objects, does not matter. The principle is based on the relationship between void and solid, on the limit and on the threshold, on the cavity and on the solid mass, with all its infinite declinations, variations and figurative interpretations.

The excavation is therefore configured as both a natural and an artificial action, a process of extraction of matter, which determines a void, or rather a gap, defines the absence of something that is evacuated, a void that denounces a presence. On a 1998 issue of Casabella, Sergio Polano writes an essay entitled *The Architecture of Subtraction* and shows the definition of Herodotus of Halicarnassus of the term architecture - Stories (III, 60), III century BC, - based on two different constructive attitudes from which derive two different types of space: "on the one hand, a design action intended to build by removing and digging, quarrying and extracting, eroding, and subtracting matter, reducing the volume for take-away [...] on the other hand, composing spaces for addition, overlap, contraposition, distribution, bonding, union of elements, members, equipment and materials."

Designing and building the vacuum by excavation is linked to the concept of subtraction and can be found both in historic cities and in contemporary architecture as a constructive and formal principle, in which the architectural features refer to the cavity; the forms of such architectures can be squared, artificial, but also organic, natural and irregular.

The excavation as a constructive matter firstly is the conquest of a stable horizontal plane on which building and dwelling. It is the foundational and constructive act that Semper identifies as 'basement-foundation', the first and indispensable act from which the fencing and the covering follow. Exactly there is the idea of excavation, the architecture of the ground, the basement and the earth. The subtraction architecture.

The principle of excavation, for which, it is here defined in a reading that circumscribe it in building below the horizon to constitute a horizontal support plane, "on which everything consists" and, in contemporary architecture, as a principle simulated excavation, as subtraction of matter from a solid mass.

Gregotti says:

"In the architect's work the foundation is, in the most evident way, the principle, almost always hidden to the eye of those who admire and those who use architecture, the principle on which everything consists, is supported and is able to last. But that surface, first and secret, of contact with the ground, of support, of connection that distributes forces and loads dispersing them in the ground, is also the result of a project. In some ways the foundation is not a starting point but the product of a process of will, of a search for compatibility and dialogue; it is the form of the interrogation around the possibilities of an existing one to welcome and support modifying oneself. The project is therefore proposed from its inception, from its foundations, as the constitution of a plan on which questions and comparisons are organized, a plan from which architecture takes shape."

Vittorio Gregotti, *Fondazioni*, in Casabella, n. 628, November 1995.

Other interesting definitions of A. Rossi and F. Venezia about *Napoli Sotterranea* and the

"*sense of the antrum*", will be useful to understand the theme discussed here.

Rossi describing *Napoli Sotterranea*:

"Among the cities whose radiography is most extraordinary, the most extraordinary of the cities can only emerge: Naples. What other city can have kept the sense of the cave, "this place, dark and mysterious, sinister and divine? This concept of urban radiography was born, not as a poetic invention (and if it then turns into signs of architecture will begin to appear), but when, with Stefano Fera, we asked ourselves the reason for this project *Napoli Sotterranea*.

And I do not hide from my side a certain intolerance, as if the problems were elsewhere, more important and in many other things that did not coincide with the basement. But we also began to see that we cannot know the city without its sections, and how the life of these sections is alternative." (Aldo Rossi, Project for the area of *Monte Echia*, in Vittorio Magnago Lampugnani (edited by), *Sotto Napoli: Idee per la città sotterranea*, Electa, Milan, 1988, page 98.)

Francesco Venezia always describing Naples in 1987:

"Naples is a city built, as it is, of its own material, the tuff. All superficial knowledge fails. It unfolds in its deep intimate a natural sequence of gorges, caverns, caverns, tunnels. The same order reported on the surface. Voids that transfigure with meaning, becoming the voids of the courts, behind the tight curtains of the streets: courtyards, gardens, open stairways. Architecture still composed of continuous gradients, bases and substructures, with which the city of Partenope is built. Exposed in equal measure to the domination of the sun and darkness, the city experiences the conversation between the ground and the subsoil." (Francesco Venezia in *Le idee e le occasioni*, Electa, Milan, 2006, p.96.)

And again, Venezia describing the access to the Temple of Venice in Segesta, in 1980, describes the condition of his hypogeum project embedded in the rock:

"The earth loses the reassuring image of full stop to express its terrible character of porous mysterious swallowing". (Francesco Venezia in *Le idee e le occasioni*, Electa, Milan, 2006, page 99.)

The architecture of the cave is the invisible architecture on the outside, the human eye, cut into the rock, made of echoes and shadows, is the vernacular architecture, of the tunnels, of the tuff, of the porosity, which is crumble to create spaces, corridors, channels that, irregularly or not, make their way, as the river does with the rock. *Gutta Cavat Lapidem*. The cave, as an archetype in architecture, can only be, before anything else, a 'deep cavity', inside things, inside a full, introverted architecture, which is hidden from the outer eye and in the womb he lives his constant dialogue between shadow and light.

This primordial architecture can be declined in various forms, either by relating to the earth, thus obtaining different conditions determined by nature, digging on the horizontal plane of the ground or on the inclined plane of a mountain; up to decline itself in forms of abstraction of the subtraction principle in contemporary architecture where the material itself is solid in its most generic sense, which can be earth, stone, but also concrete, even then fake heavy material: it does not matter. The substantial fact is the relationship between solid and void. It is the architecture of Sainte-Baume by Le Corbusier of 1948. It is the access to the temple of Segesta in 1980 by Francesco Venezia. It is the cave of the Sibyl.

The subtraction architecture is the architecture of the earth of the excavated cities in the province of Henan in central-eastern China or the city of Matmata in Tunisia. But it can also be architecture that works with stone and manifests human fatigue in winning its fight against nature. It is the sculptural architecture of the base, of the stylobate. It is architecture that tries to look at the sky from the darkness.

The subtraction principle that underlies this great set of architectures is built and can be developed through the erosive action of two constructive but also theoretical elements: the mass/volume and the edge/wall.

It is by definition a severe, massive, solid, robust and stony architecture.

Methodology

A widely used technique of reading and representation is the *poché,* used in the Nolli plant up to Venturi and the Mateus brothers to emphasize the subtraction idea of the project. Every architectural fact, in which the relationship between void and solid is the founding principle of the hollow space, can be read with this technique; the *poché* technique can be a valid, albeit unripe but immediate, approach to analyzing the subtraction architecture.

The contemporary architecture of 'void', of subtraction, of lacuna, of cavity in a solid is the formal synthesis of a process of emulation of the ancestral image of the cave. The objective of this composition derives, without doubt, from the precise will of the designer, who aim to achieve a unique identity, widespread in the world, in infinite variations, which for collective emotional reasons, produce a state of sacredness, of ritual, of anguish sometimes, of 'grave'. Producing a certain result in the subject that travels through a stolen space is a difficult, ambitious undertaking that requires particular planning. This difficulty stems from the lack of theories and research that bring order to the chaos that prevails over this issue. We have examples of value in the contemporary scene but still today is bound to that Mediterranean world, still linked to the land and the value of the soil, as a natural resource but also a creative one.

I want to precise the definition of "voids and solids" that is essential for drafting a theory and a reading methodology of the subtraction architecture.

Antoine Quatremère de Quincy in the definition of "voids and solids" turns the definition of this concept comparing it to the musical theories and the different styles resulting from a use of musical notation of time, trend or movement, so that a slow running time actually produces a feeling opposed to a composition held by a fast time.

"Considering the use of voids and solids in architecture under the relationship of feeling and taste, and leaving aside the reasons of solidity, which also do not leave to join even their impression, we can, if we do not go wrong, consider the effect of the use of which we speak as a correspondent in some way to the employment that makes the master of music of the forte, *adagio, presto, piano*, of the *andante, allegro*. For sure the union of forms, either in more or less sensitive contrasts, or for more or less rapid sequences, produce in our eyes an effect similar to the succession of serious or acute accents, slow or live sounds, severe modulations or read that by striking the eardrum in a different way, our soul passes through with an indistinct movement, to more or less painful or cheerful emotions."

With the architecture goes on - "so a great wall, made up of very salient drafts and almost without openings ... make up the facade of Newgale's prison in London, and all the painful ideas that the word prison arouses in us seem to have been carved on that facade, everyone is affected; if there were instead in its extension of the windows or numerous openings the sad effect would be lost." (Antoine Quatremère de Quincy in the *Dizionario storico di architettura*, edited by G. Teyssot, V. Farinati, Marsilio Editore, Padova, 1992.)

From this definition we focus on the relationship between voids and solids, the play of contrasts and tensions between them and how the composition in this game is so delicate as to produce different sensations based on the precise and modulated relationship between void and solids.

Madrid-based architect and writer Fernando Espuelas, taking up the Pyramid of Cheops description of Sigfried Giedion, writes "The Great Pyramid Gallery of Cheops presents 51 m in length and 9 m in height; but adding up its volume and to those of the royal room, the secondary room, the underground chamber and the rest of the passages, the 2,200 cubic meters are not reached. However, the emerging volume of the pyramid is 2,658,000 cubic meters. That is, the volume of the void reaches just 0.082% of the total volume built." He continues explaining the symbolic and perceptive motivation of this design choice by saying that "building the internal enclosures - defines - the private area of the ka of the deceased, where reflects the continuity of everyday life beyond death. The apparent volume is instead the symbolic materialization which, by form and dimension, expresses the real power and its divine origin." (Fernando Espuelas, *Il vuoto. Riflessioni sullo spazio in architettura,* Christian Marinotti Edizioni, Milano, 2017, p. 35.)

The dimension of the void in this work is relegated to the human dimension, unlike the

full which represents the divine dimension. This proportion allows to produce on the visitor a precise 'feeling' that everyone can feel in infinite ways and variations, but in the identical tensions and contrasts, which are universal, because bound to a collective consciousness: the mother's womb. The antrum.

And taking up Quatremère de Quincy "the effect that so differently results from employing voids and solids in the buildings is explained, if it seems so, with that of monotony or variety, both effects must be attached to the character different from each building, and monotony is a merit when the factory requires it. This is the effect of a pyramid for a sepulchral monument." It follows that the character of a subtracted space, therefore of emptiness, is closely linked to the categories of order, measure and weight; defining a specific 'sense of the antrum' that will give rise to monotony (in the sense of repetition too), as in the cave of the Sibilla Cumana or character of discovery, as it happens in the numerous excavated cities of the Mediterranean or monumentality as in the Pantheon to discover the light. Full / empty ratio is a category of analysis and through the technique of *poché*, as a methodological tool, highlights the character of this architecture, defining design and compositional paradigms, classifying its forms and characters. The relationship between void and solid, studied through its order (time and rhythm), the dimension (measure) and the value (weight) of the two elements, allows us to define what is monotonous, ritual, sacred, mutable and of discovery; they are all characters present in the archetype of the cave, which in varying reason, can also be found in a single subtraction architecture, where some parts reproduce the antagonism in the etymological sense of the term, others the marble quarry carved by man, others the clearing.

Conclusion

Ultimately, reading the spaces generated by void is first of all to read the void and its solid, the matter of which it is composed. The importance of a definition and classification of the characters of the subtraction architecture is and must be of fundamental importance for a theory of subtraction in architecture. Examples like the Mateus brothers, Francesco Venezia, Peter Zumthor, Campo Baeza, and others, are fundamental for studying the principle of excavation and subtraction in its possible variables, and succeed in acquiring a theoretical level that can be compared to the much-studied principle of addition theorized by the 'archetype of the hut' by Gottfried Semper and widely studied, experimented and structured by treatises and masters of modernity. Even the archetype of the cave deserves the attention of the research world and today we are beginning to overcome the emblematic vision of the 'cave' as a gloomy and negative space, unhealthy and relegated to the primitive condition of man; in this regard, Francesco Venezia stressed that "the return of interest in the underground world is an expression of authentic modernity, and one of the conditions for the affirmation of modernity itself." (F. Venezia, T*eatri e antri, il ritorno del mondo sotterraneo nella modernità; Francesco Venezia, L'architettura, gli scritti, la critica*, Electa, Milan 1998. This is the re-edition of the text in the Catalan language entitled Teatres i antres *El retorn del món subterrani a la modernitat*, in «Quaderns d'arquitectura i urbanisme", No. 175, December 1987) and as a modernity that sees the plastic form as an essential aspect of digging and subtracting, prevalent with respect to the tendency to highlight the tectonics of architecture. The architecture of the 'cave' is the expression of a single constructive and formal nature: the stereotomic one.

I strongly believe that the critique on this issue can be a useful starting point to live today in a more aware and sustainable world of the reality that surrounds us, that is the Earth; a useful moment of reflection to incite and motivate a reconquest of the art of building with the earth, the soil, its materials and its laws. The study of this world, often not considered by critics and the world market, is essential to re-appropriate the awareness of where we rest, live and build; the awareness that the Earth has an under and an above, a womb, a crust and the sky.

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Livio Vacchini: the character of an urban architecture

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Keywords: *Contemporary urban spaces between form and process*

Some architectures of Livio Vacchini are confronted with the urban dimension and in this condition establish a precise relationship with the city space. On several occasions Vacchini interprets the urban condition of the building according to an order capable of restoring a solution of continuity between the open space of the city and that covered under the building.

This paper proposes to investigate two works by the Ticino architect: the new municipality building of Nice and the Ferriera in Locarno. The two buildings, even if they correspond to different functional destinations, recognize in their urban character the foundational reason of their architectural form. In the competition for Nice and in Ferriera building, Vacchini pursues a research on the type that can slide the urban space, then the road, inside the building. The building is suspended from the ground and supported by a limited number of supports.

The structural type of the wall-beam corresponds to the spatial idea of the suspended building. This is linked to a limited number of support elements that, with vertical distribution systems, make up the building's space at street level. The architectural language of the façade (wall-beam) describes the public nature of the building by regulating the rhythm of the holes in the plate.

The idea of space is strongly linked to the nature of building systems. Probably, in this suspension condition, the spatial idea is realized through the tension established between the continuous floor and the large suspended element.

Introduzione

Il valore urbano di una architettura può essere interpretato a partire dalla capacità della sua forma di costruire una relazione dialettica con lo spazio urbano. Nell'architettura di Livio Vacchini, la relazione con lo spazio pubblico assume sempre un valore significativo.

Attraverso il riconoscimento e l'interpretazione critica di alcune esperienze significative della più recente stagione europea, si propone una riflessione critica assumendo come nucleo problematico il rapporto tra lo spazio architettonico e la sua costruzione, quindi la sua forma.

Alcune opere di Livio Vacchini si confrontano con la dimensione urbana ed in questa condizione stabiliscono un preciso rapporto con lo spazio della città. In diverse occasioni Vacchini interpreta la condizione urbana dell'edificio secondo un ordine capace di portare, senza soluzione di continuità, lo spazio aperto della città all'interno dell'edificio. Questa condizione si realizza attraverso la costruzione di un edificio sospeso e sostenuto da un numero limitato di appoggi.

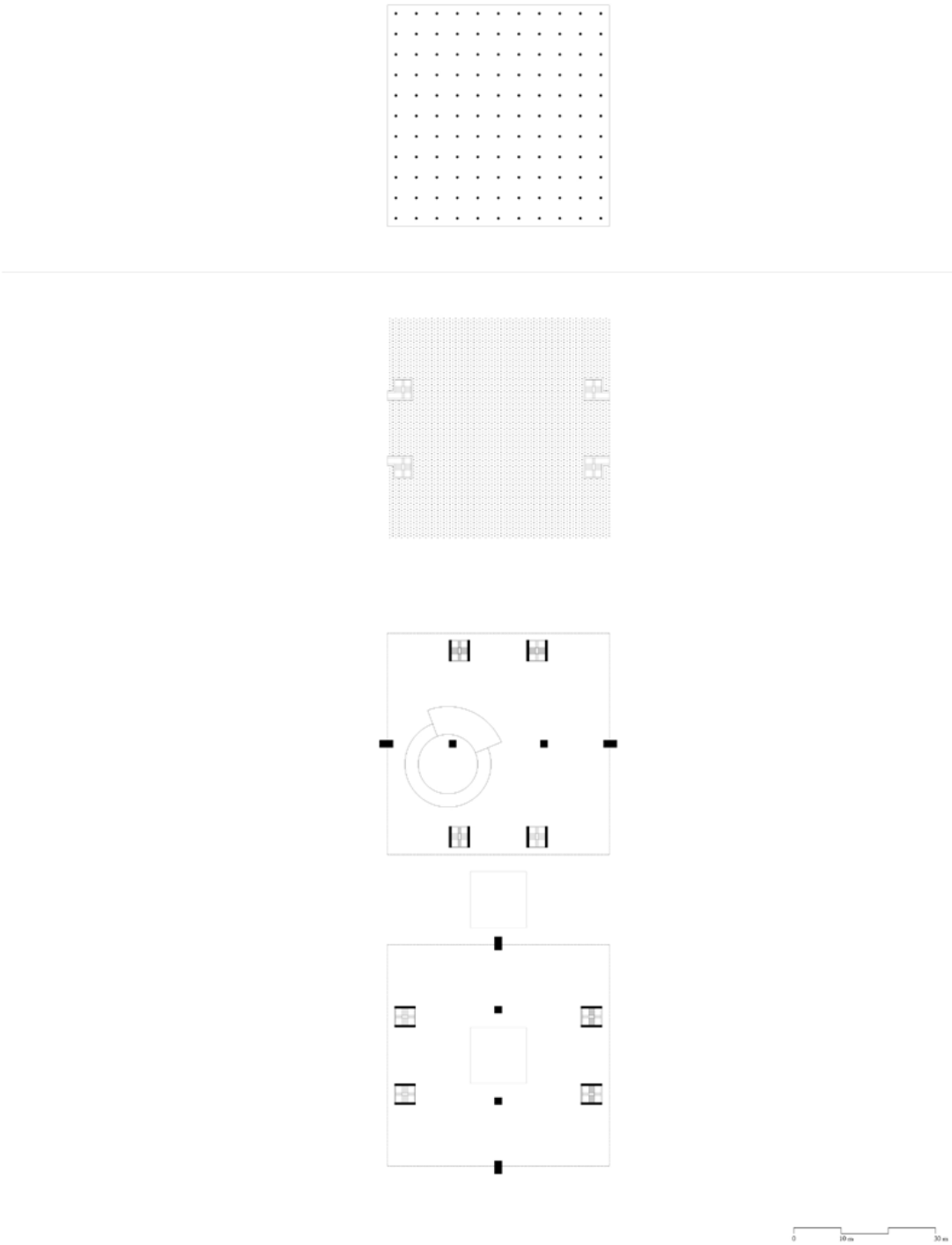
L'idea dello spazio è fortemente sostenuta dalla sua idea di costruzione stabilendo con questa un rapporto consustanziale. Sostenere l'edificio attraverso un numero limitato di appoggi significa costruire di fatto uno spazio continuo e libero dagli elementi strutturali di sostegno. In questa condizione di sospensione l'idea spaziale è realizzata attraverso la tensione stabilita tra il piano del suolo urbano e il "tetto" definito dal volume sospeso. In questo paper si propone di indagare due opere dell'architetto ticinese: il progetto di concorso per il nuovo Municipio di Nizza e la Ferriera di Locarno. I due edifici, pur attraverso diverse finalità programmatiche, riconoscono nel loro carattere pubblico ed urbano la ragione fondativa della loro forma architettonica.

È possibile riconoscere, nella volontà di costruire una relazione di continuità tra lo spazio urbano aperto e quello coperto al di sotto dell'edificio, due possibili forme spaziali che in una qualche misura si legano a due diverse modalità di percorrenza dello spazio: lo spazio come "riparo" e lo spazio come "attraversamento".

Il valore spaziale della struttura. Le forme e lo spazio

La ricerca progettuale dell'architetto ticinese sembra lavorare costantemente sulla rappresentazione del carattere della casa e dell'edificio collettivo (Masiero 1997, pp.7-63) attraverso strutture di forma capaci di determinare lo spazio in una dimensione quasi auto-poietica. In questo senso la forma definisce lo spazio come luogo costruito in sé, in cui la relazione con l'esterno non si realizza secondo un principio di inquadramento del punto di vista. Pubblico per Vacchini significa non orientato (Masiero 2017, p. 122). Pensare all'edificio pubblico in questi temini significa assumere come principio compositivo strutture di relazione capaci di costruire una condizione isotropa degli elementi nello spazio in modo da non orientare lo spazio in una direzione prevalente. Vacchini ritrova questa idea antica nei "Capolavori" della storia. Dal Partenone alla *Neue Nationalgalerie* di Mies van der Rohe la volontà di costruire un luogo per la collettività si identifica ancora nel riconoscimento di un principio compositivo capace di realizzare quest'idea: un sistema isotropo di elementi a sostegno di un tetto. Il modo in cui gli elementi a sostegno del tetto stabiliscono la propria relazione con il suolo trova una propria ragione nell'interpretazione che Vacchini da di quest'utimo. Se al di fuori del contesto urbano egli affronta il problema di dare figuratività al basamento, la condizione urbana diviene la premessa attraverso cui interpretare il piano pavimentale della città come il basamento (Gmür, Vacchini 2013, p.40) su cui costruire l'edificio. Il paesaggio urbano, inteso come arti-ficio, si distingue costitutivamente dalle forme della natura. Lo zoccolo per Vacchini "*ha una ragione profondamente antiurbana essendo ciò che serve a dichiarare la radicale differenza tra l'artificialità dell'architettura e la natura tutt'intorno*" (Masiero 2004, p.36). Le opere di Livio Vacchini istituiscono una profonda relazione con lo spazio pubblico assumendo come fondativa la particolare relazione con il suolo urbano. Come evidenzia Alberto Caruso (Caruso 2000, pp.7-9) "*In un tempo nel quale l'architettura contemporanea appare, anche in Ticino, ricca di fenomeni, fotogenica, ma anche povera di spessore teorico, di pensiero, con l'orizzonte limitato al lotto di per-*

Figure 1. Municipio di Nizza. Pianta piano terra.



tinenza, orfana di un idea di città, l'opera di Vacchini svolge un ruolo «fondante», è uno dei pochi punti di riferimento e occasioni di riflessione nel panorama internazionale. «Fondante», anche se Vacchini non scrive del suo pensiero e della sua idea di città, ma la rappresenta con la semplicità didattica della grande architettura". Dal progetto degli anni Settanta per il Centro Macconi (con A. Tibilietti) sino alla stagione più recente del suo lavoro è possibile riconoscere come la ricerca dell'architetto ticinese, attraverso un progressivo grado di radicalizzazione, si muova attraverso la costruzione di edifici urbani capaci di istituire una relazione dialettica con lo spazio della città. Il centro Macconi è

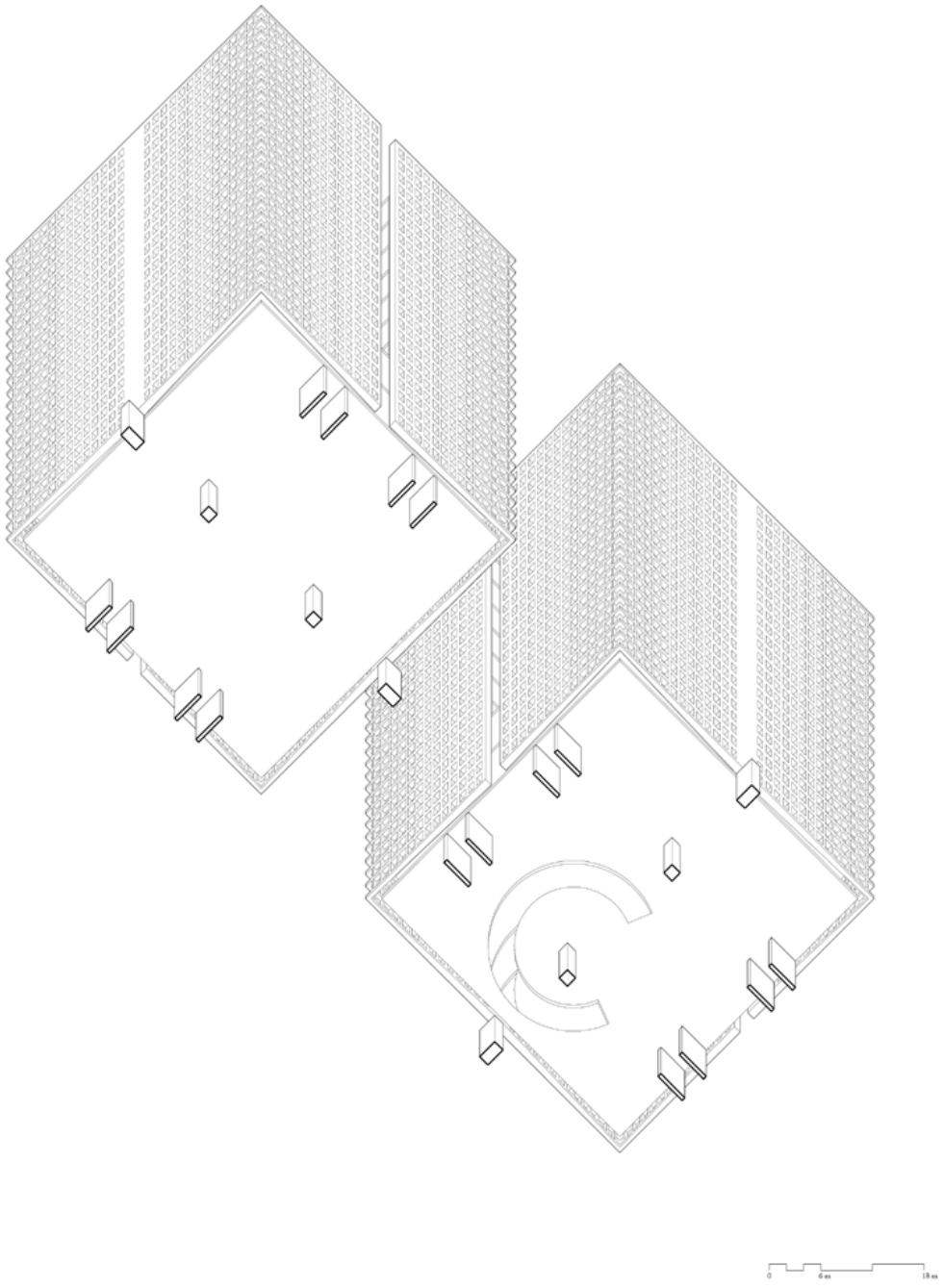
un edificio per uffici costruito all'interno di un isolato urbano nella città di Lugano. Alla quota della strada lo spazio coperto è costruito attraverso una campata unica che, senza soluzione di continuità con l'esterno urbano, estende lo spazio urbano a tutta la profondità dell'edificio registrando una condizione spaziale che si potrebbe definire di attraversamento. La ricerca di Livio Vacchini ritrova la propria ragione fondativa nella costruzione; attraverso le diverse stagioni del proprio percorso professionale è possibile riconoscere, con una qualche forma di chiarezza, quanto il pensiero sulla costruzione della forma si declini verso una "*meditata creazione di spazi*" (Kahn 1957, p.2). Il progetto per la Posta di Locarno (Masiero 1997, pp. 146-51) segna probabilmente un passaggio critico nella ricerca, in temini spaziali e costruttivi, di una relazione consunstanziale tra il valore urbano dello spazio e l'ordine strutturale che lo realizza. Questa diviene probabilmente la ragione attraverso cui "tagliare" due dei quattro muri dell'involucro strutturale, sospendendolo di fatto al suolo. Attraverso questa operazione la parete è sospesa al suolo e sostenuta da tre grandi blocchi monolitici in *bèton*. Attraverso questa disgiunzione formale il comportamento del "muro" tagliato rivela tutta la sua ambiguità strutturale ed espressiva. I quattro nuclei struttturali contenenti i sistemi di circolazione verticale si strutturano secondo una loro precisa definizione spaziale "portando", solidalmente all'involucro strutturale esterno, i solai. Pur nella significativa problematicità che Vacchini attribuisce a quest'opera (Masiero 2004, p.37), è proprio la sua ambiguità strutturale ad offrire un terreno fertile alla successiva sperimentazione tipologica sulle strutture a trave-parete, nella costruzione dell' "edificio sospeso". Come evidenzia Jacques Lucan (Lucan 1994, p.22), il lavoro di Livio Vacchini si indirizza attraverso *"interrogativi continamente ripresi"*, verso la ricerca del più alto valore di generalità della forma architettonica. I progetti per il municipio di Nizza e la Ferriera di Locarno registrano la stagione più recente dell'opera del Maestro ticinese. La loro concezione spazio-strutturale, ancora nella dimensione tipologica del sistema costruttivo, restituisce probabilmente il grado di necessità della struttura nella costruzione di una "nuova" spazialità urbana. La relazione tra l'involucro strutturale ed i nuclei scatolari di distribuzione definisce con chiarezza la struttura compositiva della forma architettonica riducendola ai suoi termini più essenziali.

Lo spazio come riparo: il municipio di Nizza

Il progetto di concorso per il Municipio di Nizza, redatto con Silvia Gmür (redatto nel 1999-00), pone come problematicità quella di ridefinire l'identità di un luogo urbano marginale privo di una propria spazialità urbana. L'area di concorso a Nord della stazione centrale di Nizza, si trova in prossimità della stazione ferroviaria Chemins de Fer de Provence (il quartiere in cui viene individuata l'area oggetto del concorso è Liberation, delimitato ad est dall'Avenue Malaussena, ad ovest dal Boulevard Gambetta e a nord dal Boulevard Joseph Garnier), verso l'Avenue Malaussena. Questa strada connette la città storica a quella contemporanea. L'area di concorso evidenzia significative criticità legate alla sua sconnessione con il tessuto urbano circostante. Il progetto proposto si confronta pertanto con la necessità di restituire una misura al vuoto urbano esistente attraverso un'idea, capace, pur nella sua profonda autonomia di principio, di restituire un nuovo valore di forma allo spazio urbano. Vacchini mette a punto una composizione spaziale di elementi per misurare il vuoto urbano, riconfigurando la conclusione dell'Avenue Malaussena. "*L'assenza di significato di questo vuoto non può essere risolta con degli interventi d'ordine cosmetico, ma con la creazione di qualcosa di tanto autonomo da essere in grado, da solo, di conferire unità, nonostante la sua disgregazione, a tutto ciò che lo circonda*." (Gmür, S., Vacchini, L. 2013, p.39) Il vuoto non viene concepito come uno spazio da colmare ma come elemento a cui restituire un senso compiuto.

L'istituzione municipale accoglie completamente nella sua stessa definizione l'idea di pubblico; il progetto di Vacchini - Gmür ritrova in questo valore il principio di necessità attraverso cui condurre la ricerca sulla forma architettonica. Il progetto di concorso si struttura secondo una composizione lineare di due edifici cubici seguiti da uno specchio d'acqua e da un giardino alberato. Vacchini in-

Figure 2. Municipio di Nizza. Assonometria monometrica dal basso.



terpreta il valore pubblico di questa architettura attraverso la figura geometrica del cubo. Tutti gli elementi si inscrivono all'interno di una successione lineare di figure quadrate equidistanti disposte ortogonalmente all'asse dell Avenue Malaussena. L'interpretazione che Vacchini da del suolo, il basamento su cui poggiare l'edificio, diviene la ragione attraverso cui concepire l'idea dell'edificio sospeso.

Attraverso un sistema strutturale di travi-parete, Vacchini mette a punto un grande volume cubico sospeso e vincolato al suolo in pochi punti. Due pilastri a sostegno delle due travi-parete e quattro scatole in calcestruzzo armato contenenti i sistemi di distribuzione verticale. Questi ultimi, con le due travi, portano i solai dei diversi livelli. La trave-parete è realizzata attraverso una piastra in calcestruzzo armato bucata secondo la geometria di

una griglia. La ragione di forma di questo elemento trova una propria necessità figurativa nel comportamento statico della trave-parete (si tralascia, in questa sede, una descrizione più puntuale della sintassi costitutiva degli elementi). La composizione spaziale delle due travi-parete (si rimanda alla descrizione grafica) definisce la figura del volume sospeso al di sotto del quale si costruisce il luogo di un grande riparo. La tensione stabilita con il piano pavimentale urbano realizza la condizione del riparo come luogo aperto all'esterno della città.

Attraverso la condizione di sospensione Vacchini costruisce un luogo per la collettività restituendo, probabilmente, una misura ed una forma al vuoto urbano in cui si inserisce.

Lo spazio come attraversamento: la *Ferriera* di Locarno

Il progetto per la Ferriera, completato nel 2003, si inserisce all'intero del tessuto ottocentesco a scacchiera della città ticinese di Locarno (Accossato, K., Rossi, F. 2003, pp. 14-18) .vc Contrariamente al progetto per il Municipio di Nizza, la Ferriera occupa uno degli isolati rettangolari della maglia a scacchiera ottocentesca. Ancora una volta la condizione urbana diviene il presupposto attraverso cui far scorrere con continuità il suolo della città al di sotto dell'edificio. A Locarno, ancora attraverso un sistema di travi-parete, Vacchini realizza un edificio capace di poggiare al suolo in pochi punti. L'edificio è costruito con un sistema di travi-parete in acciaio sostenute da otto pilastri (due per lato). I quattro nuclei interni in calcestruzzo armato, nei quali si sviluppano i sistemi di distribuzione verticale (Accossato, K., Rossi, F. 2003, pp. 22-29), portano, con le due travi longitudinali, il carico dei solai. Se a Nizza il grande volume sospeso realizza la condizione del riparo, nella Ferriera la natura dello spazio al pianterreno è significativamente diversa. L'edifico non è in realtà costruito come un unico volume sospeso al suolo. Vacchini costruisce due corpi autonomi, nella direzione longitudinale del lotto, tenuti insieme dalla griglia strutturale delle travi-parete. Il suolo urbano scorre con continuità nel vuoto tra i due volumi definendo lo spazio di una galleria con un'altezza pari a quella dell'intero edificio e coperto attraverso un sistema cassettonato. La trave costruisce ancora, attraverso il suo linguaggio architettonico, quella condizione isotropa di non orientamento della struttura che già connota l'edificio del Municipio. Se in Nizza lo spazio coperto dal grande corpo sospeso costruisce la spazialità del riparo, nella Ferriera lo spazio tra i due volumi descrive forse una condizione di attraversamento nella profondità dell'isolato, interpretando la sua condizione spaziale all'interno del tessuto a scacchiera.

Conclusioni

Tralasciando conspevolmente in questa sede una più precisa trattazione degli aspetti tipo-morfologici della struttura, che pur hanno un valore evidente nella costruzione del linguaggio delle facciate urbane, si è cercato di mettere in evidenza il valore di necessità della costruzione rispetto alle ragioni spaziali della sua concezione ideativa. La ricerca dell'architetto ticinese sembra ritrovare costantemente, nella natura dei sistemi costruttivi, la ragione "oggettiva" della forma architettonica. I due progetti descrivono la loro condizione di forma declinando il tema strutturale della trave parete. Nelle due opere, a partire dalla condizione di sospensione dell'edificio, Vacchini articola lo spazio al di sotto del corpo sospeso secondo due modalità diverse. Le due diverse soluzioni, indipendentemente dalle ragioni funzionali del progetto, propongono probabilmente una condizione dello spazio capace di interpretare la natura dei luoghi urbani in cui si inseriscono. Il grande vuoto disgregato della città di Nizza viene interpretato attraverso una nuova forma del vuoto al piede dell'edificio capace di restituire la complessità delle relazioni urbane. Il progetto della Ferriera interpreta la condizione dell'isolato nella maglia a scacchiera costruendone l'attraversamento ed affidando al linguaggio della struttura il valore rappresentitativo della facciata urbana. In altre esperienze di concorso legate ancora a progetti urbani, Vacchini declina il tipo strutturale a trave-parete in una dimensione che, indipendentemente dai fatti contingenti, sembra affidare alla struttura la costruzione di una relazione fondativa e sempre significativa con la città. Nella struttura a trave-parete, in questi termini, si potrebbe riconoscere un valore paradigmatico a partire dal valore spazio-strutturale della sua ideazione.

Figure 3. Municipio di Nizza, Ferriera di Locarno. Pianta piano terra e sezione trasversale.

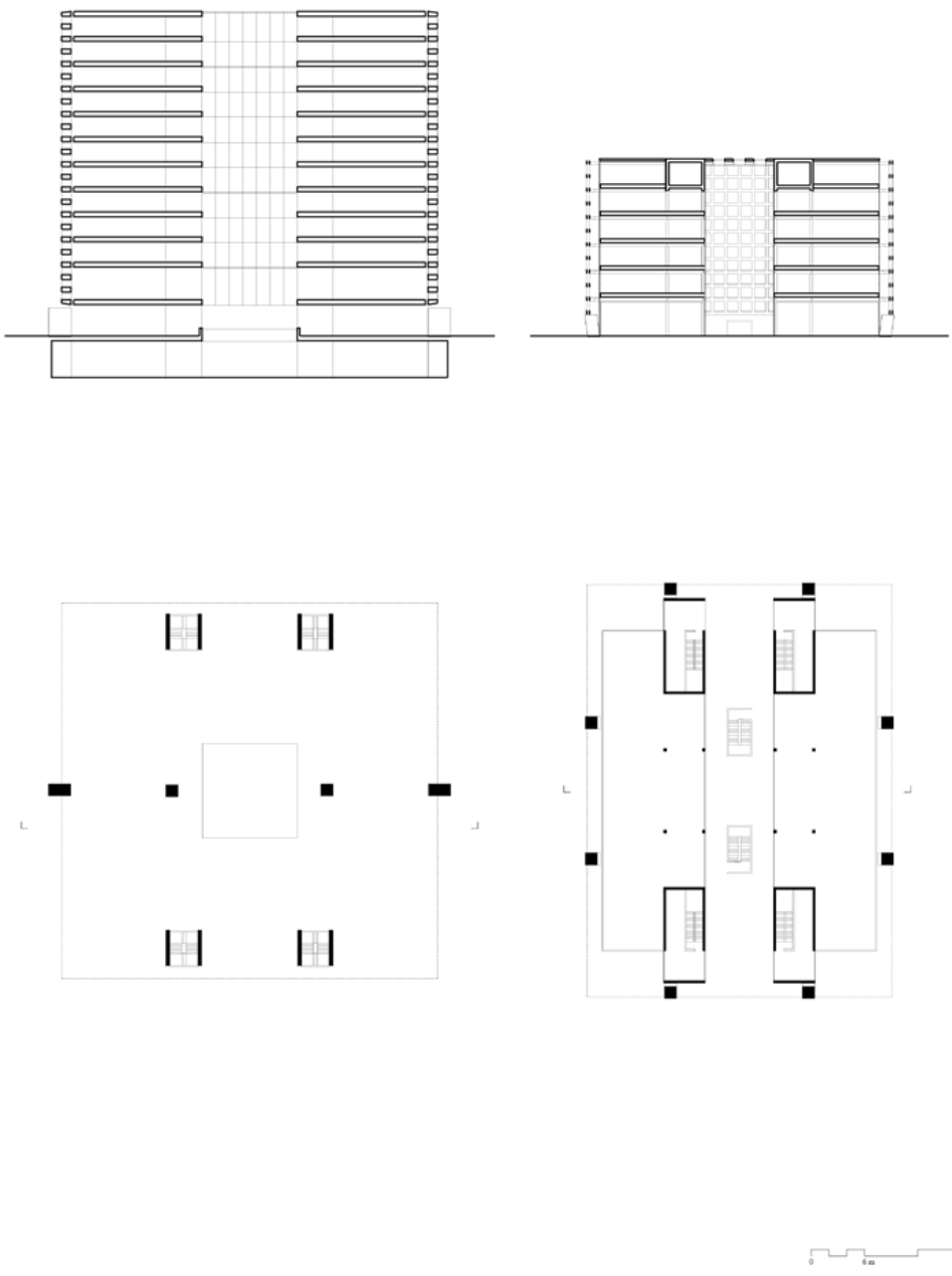
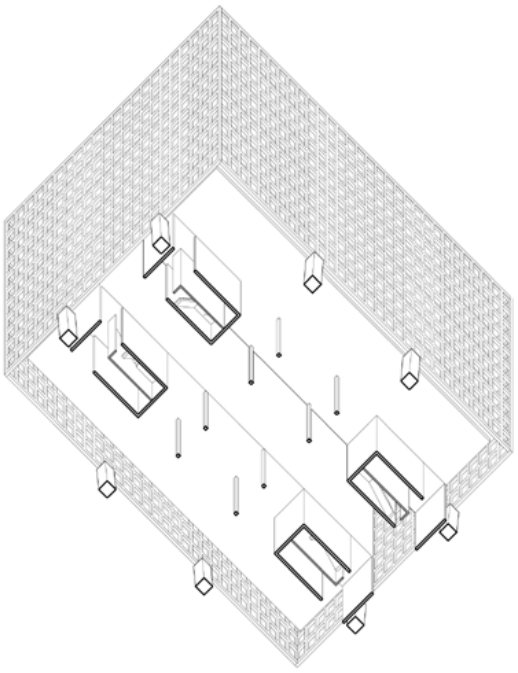


Figure 4. Ferriera di Locarno. Assonometria monometrica dal basso.



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Heritage, tourism and identity: the repercussions on urban space

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Around the Euro-Mediterranean area, there is the largest number of heritage site, containers of history, culture and traditions narrated by the urban space, a place of collective memory and of material and immaterial wealth. Within these contexts, result of stratification dynamics, the existing urban-architectural heritage appears to be the custodian of the city's identity, the main icon, as well as the first attracting object for the growing international tourism phenomenon. To preserve the image, the object of the market, the heritage site end up transforming themselves into a museum city, a context capable of telling a single and unique story. The phenomenon of musealisation risks turning such sites into spaces set up specifically for the promotion and sale of a product for the international tourism market.

At the same time, however, for its purpose of knowing places, the phenomenon of tourism has the ability to transform the characters of cities, introducing the needs of new interlocutors, which condition forms and uses requiring new parameters of definition and design. The risk is to generate a false city that questions the concepts of authenticity and originality. The contribution wants to focus the attention on the urban space of different contexts, through a path of knowledge of the contemporary tourism phenomenon that redefines the concept of identity expressed by them. The survey, developed thanks to the story of some international case studies, wants to go through the places of tourism with a particular look committed to observing the relative effects generated on urban-architectural heritage.

From the Latin word *Mediterraneus*, "in the middle of the lands", the Mediterranean Sea has always represented a "space", between Europe, Africa and Asia, marked by fractures, tensions and the search for a balance between memory and progress, nostalgia and project, between global and local. Poets and writers, myths and legends, religions and rituals, nature and colors, the Mediterranean Sea «is a particular place, through which countless stories have passed»[1]; it is a sea in which to fetch common values but at the same time it is a network that links deeply different identities and stories. At the same time, fighting and confront each other, the largest and most important civilizations that have ever existed, have crossed and inhabited these lands, introducing new ways of organizing political, economic and social, shaping, from time to time, the spaces of life. The analysis of the urban structure of the Euro-Mediterranean area cities clearly shows their ancient origin, starting from the Greek *polis* or the city of Roman foundations, and the historical stratification processes that have influenced the transformations. Result of a very long process of accumulation of material and immaterial elements, natural and artificial, deposited as overlapping layers and mixed with the existing ones, the city, transformed into tracks and architectures, constantly produces a new synthesis of itself in equilibrium with society, adapting itself in the forms and in the uses to the needs and the values of the new settled civilizations, appearing to us today as the most true source «in itself depositary of history»[2] capable of telling overlapping instances.

> «The city is not made of this, but of relations between the measurements of its space and the events of its past [...]. Of this wave that flows from the memories, the city is soaked like a sponge and expands A description of Zaira which it is today should contain all of Zaira's past. But the city does not show its past, it contains it like the line of a hand, written in the corners of the streets, in the grids of the windows, in the stairway, in the antennas of the lightning rods, in the flagpoles, each segment striped in turn of scratches, serrations, carvings.»[3]

The urban landscape, generating a cultural identification of inhabitants, represents the continuous historical dimension of its existence, within which to retrieve models of reference, predominant historical, cultural, architectural and urban features that confront each other, bringing out similarities and differences. The historical heart of the Euro-Mediterranean city is the context in which the categories of time and space are articulated, in which history and collective memory remain, that is what is commonly defined and described as heritage. This is a reality that goes far beyond the static nature of an architecture or of an urban system; it is a system of cultural, human and social processes that represents for the city the testimony of its identity.

The reference to the value of the historical city, as a complex stratification of meanings, is clear. These are the spaces, with their material value but even more immaterial, which offer the greatest density of references from the very strong historical and artistic identity of universal value, destinations favored by travelers eager to become, even for a very short time, not just spectators of history but part of it, immersed in a quality fabric composed of monumental buildings, squares, belvedere, churches and museums but also values, culture, history and society.

Europe, in particular the Mediterranean area, is the place par excellence where the phenomenon of tourism manifests itself: the cities of historical and artistic interest of the Italian peninsula, the seaside resorts of sunny Greece, the Iberian villages, the villages medieval cities in Germany, the urban neighborhoods identifying the cities of France, as well as the large theme parks, the lagoon, thermal and hill towns. This context is characterized by the presence of large and small cities, container of an inestimable heritage made of history, culture and traditions to be exploited for the purpose but also, and above all, through the increasingly consistent and contemporary tourism.

This phenomenon is the most important production sector of the XXI century: able to move

1 Baglivo Carmelo, Galofaro Luca, "Per concludere", in Baglivo Carmelo, Galofaro Luca, *Odissea digitale. Un viaggio nel Mediterraneo*, Torino, Testo & Immagine, 2004, p. 79

2 Rossi Aldo, "La città come storia", in Rossi Aldo, *L'architettura della città*, s.l., Quodlibet, 2011, p. 144

3 Calvino Italo, "Le città e la memoria. 3.", in Calvino Italo, *Le città invisibili*, s.l., Mondadori, 1993, pp. 10-11

human beings and economic capital, it invites to the meeting and exchange between communities, obliges a strong component of public management through infrastructural endowments, redesigns the architecture and transforms cities, making clear its fundamental importance also in terms of direct economic revenues and employment. Above all in the last sixty years, tourism has undergone a substantial change, thanks to economic development, the reduction of transport costs, the improvement of living standards, the growth of available income and paid free time. Once the phase was completed during which the practice turned out to be a privilege for the most affluent social classes[4], the modern democratization of the journey led to a double implication: on the one hand a degenerative process that defined the new phenomenon of mass tourism and another is a large increase in the number of travelers interested in experiencing ever more specialized experiences. By sea or by land, the masses of tourists reach the destinations, they cross the cities seated on two-story coaches that offer a summary of historical, political, cultural and social aspects or move on foot, gathered around their own tourist guide reference (authorized or not, it does not matter): they throw curious looks on buildings, squares, monuments and archaeological areas in search of the symbolic places to which they can not forget to visit. They do not know the sites but they cross them and after a few days they begin to remember paths or glimpses already seen, thinking they have already taken possession of them.

> «Very often this people of travelers has little time and desperately tries to absorb as much or as possible of what the city offers, like camels ready to make a supply of art and culture before the long journey back home.»[5]

The phenomenon of tourism brings with it the implicit outcomes of the great opportunities and the nefarious omens of collateral risks. Tourism modifies the spaces, transforming a site, a city or a landscape into a destination, a consumer object, a product to be commercialized. Responsible for possible social and psychological effects on inhabitants or occasional patrons, the image of a tourist site has the ability to change its fate, making it attractive and attracting the visitor; in the same way it can be distorted to sell a product as a model of living. The urban and architectural heritage is therefore the most consistent content of the evocative images of the cities to visit. Object of the traveler's desire, the promotion of the territorial and national tourist image[6] starts from it. The city-heritage with a strong tourist appeal don't declare their true age, they lie compulsively trying to hide the endless lifting operations carried out to always look the same, always beautiful, always perfect in order not to disregard the expectations of the naive visitor.

> «In the overwhelming majority the tourist people are like a trusting child, unaware of deception.»[7]

From an architectural point of view, the constant polishing of these sites finds its dimension in the practice of architectural and urban restoration, too often conditioned by strong constraints. All this leads to an inevitable attitude of extreme conservation: the historical city risks being subjected to excessive protection actions compared to any change that could modify the known image. The attempt seems to stop time at an age arbitrarily identified through purely conservative projects that freeze the site. The final result achieved is associated with a "taxidermy" operation, that is the technique of embalming dead animals destined

4 Until the XVIII century, the trips undertaken were motivated mainly by the need to make commercial routes (explorations) or religious paths (pilgrimages). Especially considering the uncomfortable conditions in which it was forced to travel and the high costs to be faced, subsequently, the elite trip became that of the young European aristocrats, busy with their training from the north to the south of Europe (Grand Tour). What today we commonly call tourism, or organized travel, finds its origin in the figure Thomas Cook (1808-1892) considered the inventor of modern tourism. On July 5, 1841, the English businessman organized a one-mile trip from Leicester to Loughborough to be traveled by train, in which approximately six hundred people took part.

5 Biondillo Gianni, "Apologia del turista di massa (Dio doveva essere fiorentino)", in Biondillo Gianni, *Metropoli per principianti*, s.l., Guanda, 2008, p. 116

6 The Country Brand Index is an index able to measure the quotient of attractiveness of a nation judged by the rest of the world, through the systematization of qualitative and quantitative parameters.

7 Biondillo Gianni, "Apologia del turista di massa (Dio doveva essere fiorentino)", in Biondillo Gianni, *Metropoli per principianti*, s.l., Guanda, 2008, p. 118

for display in museums, carried out through the treatment of leather and the subsequent padding. The urban space of the city-heritage ends up transforming itself into a city-museum for the exclusive but temporary use of tourists. A context able to tell a single and unique story, the one enclosed in the moment of the freezing action, not completely authentic and exhaustive. This is the phenomenon of musealisation, the transformation of an environment, originally intended for other use, in a museum: in this case the environment is the city-heritage itself and the museum is open-air.

The spread of spaces arranged for the promotion and sale of the product becomes the new background within which we witness daily the same dynamics related to the hospitality industry rather than the housing sector. Tourism empties the spaces of the historic centers of its own inhabitants, more often than not driven by the lack of basic and necessary structures or by the excessive increase in costs (the increase in property prices and public services).

Naturally the example in which this type of phenomenon can be better recognized can only be the city of Venice, without doubt one of the clearest cases of physical preservation of a historical city in its complexity. Despite the integrity of its appearance, the domination of a single economic activity, the tourism, has caused important consequences that are reflected in the almost total loss of the values of citizenship: a social and cultural conservation, therefore, completely failed. While in 1951 the population residing in the historical center reached 174 808 individuals, today the figure is around 55 583[8]. For example, neighborhood stores are scarce due to the low demand for daily consumer goods such as bread, milk, pasta or fruit and vegetables. Where once daily life took place, today the uncontrolled invasion of tourists subjects the city to constant alterations of its environments. Behind the apparently unchanged facades, even preserved with strict rules, there is a continuous change in the interior spaces of the buildings. An incessant redefinition of houses, historic shops and meeting places, which leaves room for new interiors: luxury b&b, lofts, exhibition spaces, beauty farms, gyms, souvenir shops, bars, fast food.

However, the phenomenon does not concern only the private spaces of the city but also invades public ones. Urban crossing spaces that lose their implicit identities and become spaces without rules. This leads us to reflect on who really appears to be the main user of public spaces, fundamental for the inhabitants and decisive for tourists. The former no longer appear as the only protagonists of reference for the design of the urban fabric, but they approach, draw near and sometimes replace the latter. With the introduction of a new category of individuals, a new condition clearly begins to emerge, in which the tourist is confirmed as a new element that effectively measures the spaces, allowing them to be read through the survey on the presence data. Varying the data, both quantitative and qualitative parameters vary, considering the same compared to the physical and psychological components of the subjects involved. Roads, squares, markets, the public spaces of the citizen become just a memory of the places they were, finding themselves besieged by an urban system, which repeats itself overwhelmingly and eternally, composed of spaces that resemble each other in all the cities. Forced to adapt to the dynamics of contemporary tourist enjoyment, heritage cities struggle to survive, bending to market homologation that is concerned with responding to the demands of the tourist but, even more, of satisfying often unexpressed needs.

It is a question of memory and dignity starting from one's own history, one's own role in history and one's own culture, as well as one's own urban form: one must never forget one's own origins, architectural languages, materials, views and landscapes that are part of the uniqueness of each individual reality, especially those imbued with cultural heritage.

It is possible to agree on the double dimension of the relationship established between the existing context of the city-heritage and the tourism phenomenon: on the one hand the risks and on the other the opportunities. If it is true that the tourist attention focused on the most important cities-heritage of the Euro-Mediterranean area can lead to structural modifications such as the replacement of the housing system with the receptive system, the phenomenon of musealization, the construction of the themed scenographic system or the process homologation and loss of real and human identities, in the same way it is also

8 Data from the Statistical Office of the Municipality of Venice, updated to 2015, relating to the population residing within the historic center.

absolutely legitimate to bring out the positive effects of which, up to now, have been able to benefit the above sites and the future potential deriving from the growth of the relative productive sector. The redevelopment of urban heritage, in order to exploit the qualities for tourism, is a great opportunity to strengthen the scarce public space. This reveals the importance of creating spaces of sensitive quality that understand, interpret and translate the needs of tourists with the aim of offering appropriate places to the dynamics implemented. This consideration must not result in a design aimed at a spectacularization of the tourism and culture industry, but in a conscious attempt to create hybrid spaces. This is done through strategies and project actions that increase needs and different vocations and which aim at the renewal of the image of the historic center and an ever wider range of attractiveness.

***Metropol Parasol* (Sevilla, Spain)**

In order to preserve the profound value of the ideal places of historic centers, spaces become flexible, transformable, pliable and creative. The possibility of designing appropriate spaces is independent of the classical aspiration to build distinct and separate places, but rather welcomes the suggestion of highlighting the multiplicity, the hidden possibilities and the unexpected variations, reflecting on the distance between citizen and tourist.

The Metropol Parasol, winner of the international design competition announced by the Seville Association in 2004, is the work through which a real process of redevelopment of the historic plaza de la Encarnación was implemented; there where, until 1973, it was located an ancient covered market. The result of a very long construction site since 2004 to 2011 and led by the German studio Jürgen Mayer Hermann Architects in Berlin, represents the attempt to give shape to a new space that would gather and translate the functional, social and cultural aspects of an important site such as the center historical of Seville. The project is a case study able to tell an interesting attempt to relate the value of the heritage and the new needs of living, with the definition of a new urban identity linked to tourism.

Inserted within the medieval Jewish quarter, the barrio Santa Cruz, the heart of the current tourist life of the capital city of Andalusia, the project aims to redefine a new public city space where, following an action demolition, inexorably the space had transformed into an anonymous and disorganized parking, a large urban void resulting.

The suggestive grafting is particularly interesting if we reflect both on the meaning and value of the intervention and on the use attributed to the new urban public space, both if we are interested in the characterizing formal, constructive and technological characteristics.

The large roof, made up of six umbrellas connected to each other and resting on six imposing feet on an underlying volume, occupies almost entirely the well-defined space of the square and predominantly characterizes its final appearance: delimited by recently built buildings, the area is crossed from west to east by calle Laraña which turns into calle Imagen. Invading the square in its vertical and horizontal development, the dominant spatiality of the new architectural element is underlined by the organic forms of the roof that, by crossing the existing driveway, create a functional and spatial extension, expressing the attempt to occupy the void and not to compromise the urban dynamics of crossing.

The architectural work is spread over a total area of 12 670 square meters reaching the height of 28.50 meters, through the superposition of the five levels that compose it. It is a vertical composition of five different public spaces: an archaeological/museum area, a market, a square, a bar/restaurant and a scenic route.

In the basement the structure houses the museum area called *Antiquarium* made up of rooms created around the ancient remains of some Roman buildings, decorated with precious mosaics (I century), and of a house (XII-XIII century) , accidentally found in the nineties of the XX century.

At the level of the road, the market environments are developed on a surface of about 2 155 square meters. Through a gallery, which cuts the plate from north to south, it is possible to enter and find here the old historical function of plaza de la Encarnación, a meeting and trade place.

Raised by 5 meters compared to the road, the square of 3 000 square meters, a public space par excellence used as an urban living room, a place of aggregation and symbol of

the typical values of the community. It is a space covered by large umbrellas in which the large perforated structure ensures air circulation and protects from the hot sun. The stairs and ramps allow to reach the upper level and become into real stands to take part as spectators in the development of cultural events, great opportunities for meeting and socialization.

Reachable through the elevator placed inside one of the six large feet that support the entire structure, the bar/restaurant, with three hundred seats is located, about 20 meters from the ground. A resting place suspended in the sky and hidden between the wooden elements of the large hat, stretched outwards thanks to the presence of openings that allow a spectacular view of the city.

About 30 meters high, reachable by crossing the bar, is located the striking scenic route that offers the opportunity to walk around the entire structure and enjoy a privileged observation point on the surrounding urban landscape.

> «For centuries the Sevillians climbed the bell tower of the Cathedral of the Giralda to admire the view of the city, with the old palaces, churches, the Alcazar, the Torre del Oro, against the background of the Andalusian "wild and kind" land and legendary Guadalquivir river.»[9]

The vertical development on five levels through which the five different functions are articulated, increases the density of the intervention but at the same time represents a conceptualization of the historical stratification of Seville in which the culture Roman, Jewish and Moorish met. As in an overlapping of layers from the basement to the panoramic route, the functions correspond to historical and cultural elements that have characterized the history of this place: the Roman period witnessed by the level of the archaeological excavations, the ancient function of the market at the level of the street, the contemporaneity expressed by the large square for the shows.

In the neighborhood of the ancient ghetto, the buildings symbol of the splendor of the past historical eras, there are the main monuments of the city of Seville: the Gothic Cathedral (1400 - built on the remains of a ancient mosque), the Giralda (1198 - minaret survived the ancient mosque), the Reales Alcazar (1200 - architectural ensemble realized in several stages for the residence of the Spanish royals) and the Archives of the Indies (1598 - first seat of the stock exchange and then converted into a historical archive in 1785). World Heritage Site by UNESCO in 1987, today they represent the most popular tourist destinations in the city, to which the new urban dynamics now flank the Metropol Parasol. The majestic structure is shown through its strong, original and spectacular image: an intervention with a massive and formally autonomous appearance, at the limit between sculpture, artistic installation and architecture. Recognized as the new symbolic image of the city, *Las Setas de la Encarnación*, or "the mushrooms" as the work was renamed, are approached by the historic icons such as plaza de España, one of the most spectacular places in the neo-moresca architecture and among the main attractions of the Andalusian capital, becoming a spatial, temporal, visual, cultural and social reference on an urban scale.

Today the relationship between the sectors of tourism, economy and culture is close and in constant redefinition. The attractiveness of the cities, in particular those with a strong historical character, determines the emergence of numerous and diversified studies strongly interested in the investigation of the potential of the overwhelming phenomenon of urban tourism. The activities connected to it involve important economic, social and urban repercussions on the sites. Therefore, consequent and significant repercussions are also found on the spatial structure connected to the tourist offer: according to the new behavioral and habitative dynamics of the user, we can observed the need to adapt the city (its architecture and its spaces) considered insufficient models that fail completely to express the actual experiential reality.

New spaces define the rebirth of the city-heritage through social, urban and architectural experiments that give life to new models that tell the needs of contemporary man, citizen, resident, traveler, tourist.

9 Josca Giuseppe, "La sfida di Siviglia", AAVV, *Meridiani - Andalusia*, 38, 1995, p. 38

Figure 1. Metropol Parasol (Sevilla, Spain). Photos and drawing by the author.

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City of Towers. The Auguste Perret project for Amiens

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In the articulated context of French post-war reconstruction, Perret's experience occupies a singular position. In the complexity of the questions posed by the scenario of the bombed cities, his work, more than within a more widespread "conception of urbanism understood as embellissement, implemented by reconstructing and transforming the city according to the image of the ancient one", seems to define itself in the will to coherently rethink the form of territories and cities with respect to one's own time. Independently of the necessities that in 1941 had determined the promulgation of the Charte de l'architecte reconsturcteur, the answer given by Perret shows its validity within a more general reality originated by the growth of cities and the need to "create the past" through an analogical procedure that sees a reinterpretation of the most profound reasons of the tradition of French cities.

The reconstruction of Place Alphonse Fiquet in Amiens does not therefore result in the revival of a particular image of the city of Picardy, as in the invention of forms that manifest a link and a belonging to a wider cultural world, which is that of the northern French cities.

So this is the reason that explains the founding choice, in the project for the square, to place a beffroi where it had never been, as if it had always been there, and to coherently and historically rethink the urban form within the relationship between the civic tower and the Gothic cathedral.

0. Introduzione

Oggetto di questo studio è il progetto di Auguste Perret per la Place Alphonse Fiquet ad Amiens, concepita e realizzata a partire dal giugno del 1942, e completata, dopo complesse vicende, nel 1959[1]. Questo progetto si configura come un *ensemble* di edifici distinti, alcuni dei quali meriterebbero una trattazione dedicata ed approfondita, che non è intenzione di questo studio sintetizzare nelle pagine che seguono, essendo questo piuttosto orientato alla lettura del progetto della piazza nel suo complesso e alle sue relazioni, formali e semantiche, con la città che la ospita.

La sua analisi avverà attraverso una serie di letture che ne indagheranno il suo concepimento in rapporto al più generale contesto della ricostruzione postbellica delle città francesi; in rapporto alla più ampia ricerca sviluppata dal maestro parigino sulla costruzione della città contemporanea; nonché, infine, in rapporto alla specifica struttura formale della città che lo ospita - Amiens -, che sarà oggetto di alcune comparazioni con altre città della Piccardia, intesa in questa sede, con inevitabili generalizzazioni, come una regione omogenea dal punto di vista della sua cultura urbana. È opinione di chi scrive, infatti, che probabilmente solo attraverso la sovrapposizione e la combinazione reciproca di questi contenuti sia possibile cogliere il portato di quest'opera e provare ad encunciare deduttivamente la teoria del progetto urbano che soggiace al progetto per Amiens.

L'ipotesi che questo studio intende verificare è che, di fronte a un diffuso atteggiamento che nella *Première Reconstruction*, avviata alla fine del 1940 in seno al governo di Vichy, aveva interpretato il rapporto tra le vecchie e le nuove città attraverso la riproposizione o evocazione della loro antica immagine, il progetto di Perret abbia perseguito quest'obiettivo all'interno di una dimensione 'inventiva' nel senso più autentico del termine, riflettendo cioè sulla possibilità di ri-trovare e restituire il suo senso più profondo anche attraverso l'introduzione di nuove forme, capaci tuttavia di manifestare un antico legame con un più ampio mondo culturale, che è quello delle città francesi del nord. Più nello specifico, si potrebbe descrivere il campo problematico nel quale si formalizza questo progetto attraverso il concetto di "tipo", da estendere in questo caso alla dimensione del "tipo urbano", inteso come un sistema di relazioni tra le parti ricorrente nelle città del nord della Francia. Attraverso questo atteggiamento, il maestro parigino sembra riuscire, al contempo, a dichiarare la presenza di una radice culturale capace di sancire l'appartenenza di questo progetto al luogo che lo ospita, ma allo stesso tempo a rinnovarla e renderla disponibile a nuovi, possibili sviluppi, determinati dal riconoscimento delle più generali istanze derivanti dalla crescita urbana del XX° secolo. Attraverso questo rapporto dialettico, il progetto per la place Alphonse Fiquet offre dunque la possibilità di riflettere sui modi possibili del rapporto tra la città contemporanea e quella storica, nonché sul senso della sua eredità.

1. La *Première Reconstruction*: la Valle della Loira come 'laboratorio urbano'.

Nel panorama articolato della ricostruzione post-bellica in Francia, in particolare della *Première Reconstruction*, avviata alla fine del 1940 in seno al governo di Vichy, il progetto per la Place Alphonse Fiquet ad Amiens occupa senza dubbio una posizione singolare.

Tra maggio e giugno del 1940 alcune città francesi furono bombardate, e la questione della loro ricostruzione si costituì immediatamente come una problematica necessità. Rapidamente furono organizzati gli enti e gli organismi[1] che avrebbero dovuto guidare la ricostruzione, definendo anche un *modus operandi* che si sarebbe tradotto in un *corpus* di 'principi direttori' della ricostruzione.

Paradigmatici, per comprendere questo atteggiamento, sono alcuni piani urbani redatti per le città del corso della Loira successivamente ai bombardamenti subiti nel giugno del 1940

1 L'incarico fu affidato ad Auguste Perret, il 5 giugno 1942 dal *Commissaire à la Reconstruction*, inizialmente finalizzato allo «studio dell'*ordonnance architecturale* della Place Alphonse-Fiquet» (Abram 1997, p. 40) e poi ampliato «alla ricostruzione degli edifici che la circondano» (Culot et al., p. 287). Il 22 maggio 1959 fu celebrata, alla presenza del ministro Eugène Claudius-Petit, la "nascita della torre", presentata come il più alto grattacielo d'Europa.

2 Si vedano, ad esempio, la Délégation Générale à l'Equipement National (DGEN), composta dal Commisariat Technique à la Reconstruction Immobilière (CTRI), che si aggiunse al Comité National de la Reconstruction (CNR); la Direction de l'urbanisme et de la Construction Immobilière (DUCI); il Comité d'organisation du bâtiment et des travaux publics (COBTP), e infine, l'Ordre des Archtectes (Lucan 2001, pp. 18-19).

da parte dell'aviazione tedesca. Le città di Orléans, Gien, Sully-sur-Noire e Châteauneuf-sur-Loire, grazie all'immediato avviamento delle procedure per definire i piani di ricostruzione, approvati sei mesi più tardi, il 3 gennaio 1941[2], si costituirono infatti come un 'laboratorio privilegiato' della ricostruzione.

Per la città di Orléans, Jean Kerisel e Jean Royer concepirono un piano di ricostruzione che ricalcava in gran parte i tracciati presistenti, rettificati allo scopo di ottenere allineamenti regolari, omogeneizzava la misura degli isolati, e disegnava delle *ordonnances architecturales* per gli spazi pubblici più rappresentativi.

A Gien, il piano di ricostruzione di André Laborie ricorreva agli stessi principi di regolarizzazione di quello di Orléans, offrendo una risposta 'regionalista' tanto alla questione dell'unità elementare, proponendo isolati a corte costituiti da una serie di abitazioni 'a schiera', che riproponevano la scala minuta delle vecchie cortine edilizie, quanto alla questione del linguaggio, proponendo una reinterpretazione degli stilemi delle archietture tradizionali.

Quello che caratterizza la ricostruzione, o meglio la ricostituzione o rimodellazione delle città della Loira rivela una «concezione dell'urbanistica - come ha sottolineato Jacques Lucan - interpretata come *embellissement*, attuato ricostruendo e trasformando la città secondo l'immagine di quella antica»[3], una concezione in cui il progetto per la nuova città cerca di stabilire con quella antica una relazione di continuità innanzitutto attraverso la riproposizione della sua immagine, e che, come ha notato Bertrand Vayssière, «si fa porta-parola di un'ideologia che attraverso la sua stessa essenza rifiuta i principi di una società complessa»[4].

Alla fine del 1941 il 'regionalismo' proposto dal piano per Gien fu affermato come un principio imprescindibile nella stesura della *Charte de l'architecte reconstructeur*, destinata a tutti gli architetti impegnati nella ricostruzione. In essa si affermava: «Ricordate che da più di mezzo secolo le piccole città e le campagne sono oggetto di deturpazione, e che i caratteri regionali stanno scomparendo. Eppure, una volta, il lavoro degli uomini era un tutt'uno con il paesaggio e con loro stessi; oggi tende a diventare uniforme da una regione all'altra e disomogeneo all'interno della stessa regione, oltre che disumano. È quindi necessario, essendo ovvie le cause del male, cercare i mezzi per combatterlo nelle costruzioni future. Per questo non esitate a guardare le case tradizionali delle piccole città e dei villaggi: capolavori degli artigiani del passato. Sono la perfetta espressione del tipo di vita dei nostri antenati. Certamente non ci possono essere dubbi nella ricostruzione sul ritorno a forme e dispositivi condannati da tecnologia, igiene ed economia. Ma è necessario, attraverso un'attenta indagine, cercare tutto il lato spirituale che può essere salvato dall'eredità e riabilitato»[5].

Di fronte al punto di vista espresso dalla *Charte de l'architecte reconstructeur*, se ne strutturò uno ulteriore, ben espresso da Louis Hautecoeur, *sécretaire général* des Beaux-Arts, che proponeva una diversa lettura della questione del 'regionalismo'. Egli affermava: «L'architettura regionale deve conservare tutto quello che è logico; essa può rimanere fedele a delle forme che hanno una ragion d'essere; ma non saprà vivere del *pastiche*, piegarsi allo stile "hostellerie" o padiglione da esposizione universale […]. Che gli architetti di oggi imitino i nostri maestri muratori e i nostri carpentieri di un tempo, che facevano del regionalismo senza saperlo, perché costruivano la casa com'era necessario farla. Questa casa sarà allo stesso tempo regionale e nazionale, tradizionale e moderna»[6]. Allontanandosi da un regionalismo 'passatista', questo punto di vista esortava inoltre a non rifiutare l'apporto dell'industrializzazione e a sperimentare le moderne tecniche della costruzione, come ad esempio il *béton armé*. È all'interno di questo stesso punto di vista che sembra collocarsi la posizione dello stesso Perret, il quale aveva affermato: «Nella ricostruzione della Francia bisognerà soddisfare i programmi più moderni. Ma bisogna anche che le nuove costruzioni abbiano l'aria di essere sempre esistite. La tradizione è fare quello che avrebbero fatto i nostri antenati se fossero stati al nostro posto e se fossero vissuti nel nostro tempo»[7].

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3 Si vedano, per questi progetti, i contributi di Lucan 2001, pp. 19-24, e Baudouï 1993,pp. 68-75.

4 Lucan 2001, p. 22.

5 Vayssière, P. (2009), "Relever la France dans les après-guerres: reconstruction ou réaménagement?", Presses Universitaires de France. Guerres mondiales et conflits contemporains, 236, 45-60.

6 Secrétariat d'État aux Communications, commissariat thecnique à la Reconstruction immobilière (1941), *Charte de l'architecte reconstructeur*, (Imprimerie nationale, Paris), cit. in Lucan 2001, p. 24.

7 Hautecoeur, L. (1942), "Régionalisme et architecture", *AF*,15, cit. in Lucan 2001, p. 25.

8 Perret, A. (1945), "Reconstruire la France", cit. in Abram *et al*. 2006, p. 429.

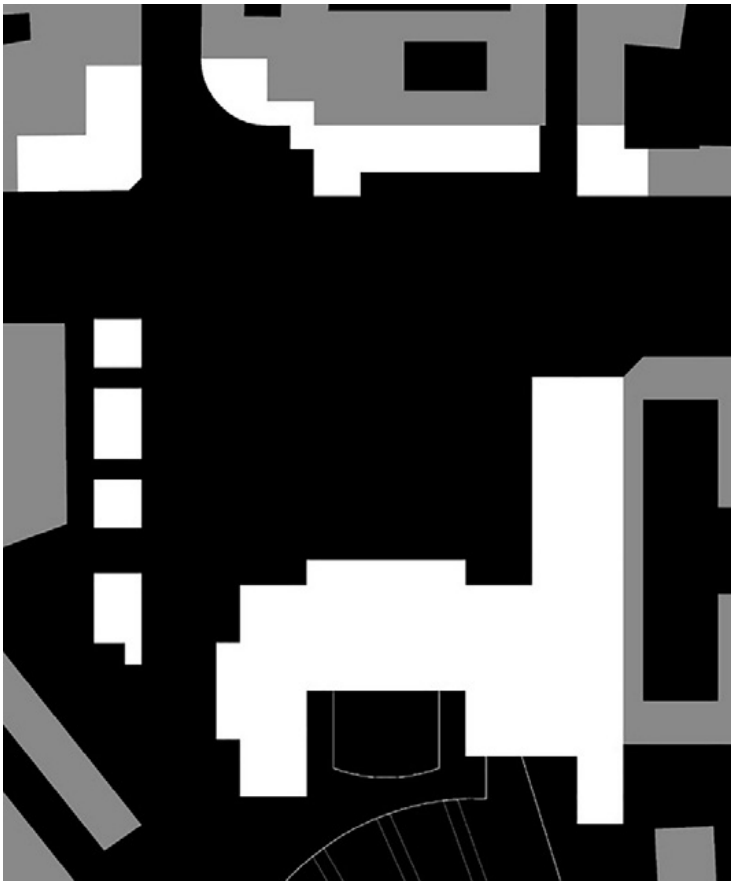
2. Il piano di Pierre Dufau per Amiens: da 'borgo rurale' a 'città capitale' della Piccardia

La ricostruzione di Amiens si inserisce dunque all'interno di questa dialettica, definendosi come il portato del punto di vista appena descritto. Nel 1940 la città conobbe delle distruzioni su larga scala, soprattutto legate all'incendio del centro, divampato il 23 giugno[8]. Nello stesso anno venne bandito un concorso per la ricostruzione del centro urbano, vinto da Pierre Dufau con un piano che, come sottolinea Joseph Abram, conservava i principali tracciati urbani ma modificava la città nella sua stessa sostanza, introducendo al suo interno una serie di nuove piazze dislocate nei suoi punti più significativi[9].

Lo stesso Dufau aveva infatti affermato: «Nel 1942, preoccupato dalla necessità di conferire alla città d'Amiens l'aspetto di una vera capitale regionale piuttosto che di un borgo rurale, com'era rimasta, ho fatto ricorso a un artificio urbano già sperimentato: creare una serie di piazze più o meno *ordonnancées*; nato ad Arras, avevo nella memoria le due piazze che ne hanno fatto una città e non più un borgo»[10].

Questo passaggio, particolarmente significativo, spiega la 'sostanziale' modifica della forma urbana di Amiens, la cui ricostruzione appare come l'occasione di conquistare una'modernità' sancita attraverso la proposizione di una struttura 'policentrica', che si inserisce nell'autorevole tradizione

Figura 2. Amiens, Place Alphonse Fiquet. Planimetria del progetto di Auguste Perret (disegno dell'autore).



9 La città subì un primo bombardamento sabato 18 maggio 1940 h. 15.00. Venne bombardato lo scalo di Longueau a est della città e quello di Saint Roch a ovest del centro antico. Domenica 19 maggio h. 12.00 fu bombardato il centro della città, compresa la Gare du Nord, il *faubourg* Saint-Pierre, il quartiere di Saint-Honoré, il *faubourg* di Hem, il quartiere Saint Jacques. Il 25% dell'edificato dell'intera città fu distrutto, e in particolare il 60% del centro antico.

10 Abram 1997, p. 39.

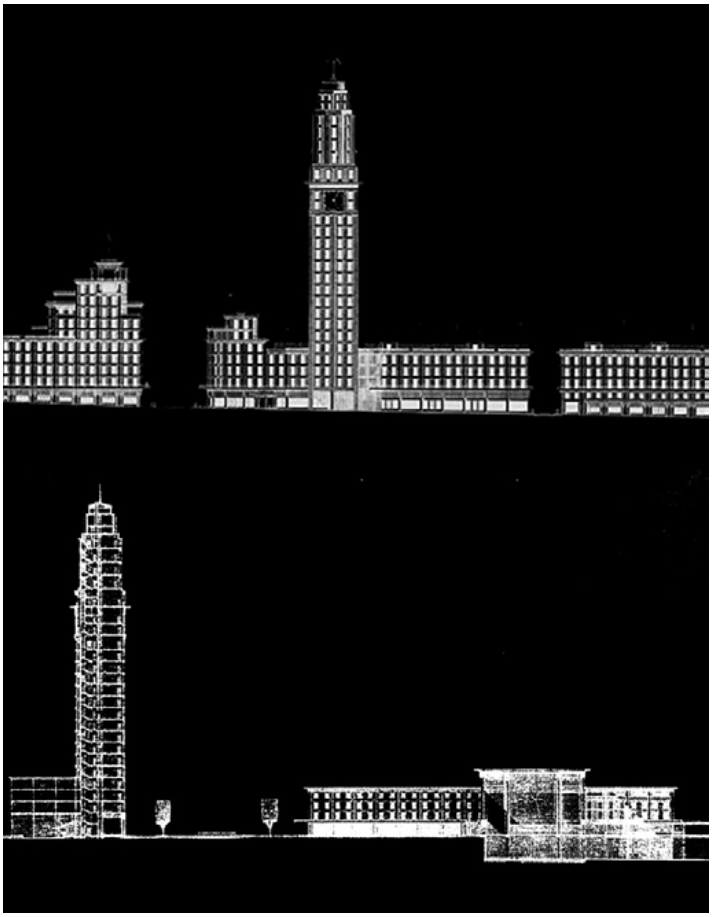
11 Dufau, P. (1989), *Un architecte qui voulait être architecte*, (Londrey, Paris), cit. in Abram 1997, p. 37.

che le città francesi avevano dato nel corso dei sec. XVII° e XVIII° del tema della 'città capitale' come insieme di molteplici luoghi monumentali.

3. Il progetto di Auguste Perret per Place Alphonse Fiquet

All'interno di questo piano, e secondo questi obiettivi, Dufau chiese «che fosse affidata a Perret la piazza della Stazione che, nel nord, è sempre un centro d'interesse urbano tra i più vivi»[11]. La piazza si situa in un punto significativo della città: quello in cui, lungo le mura urbiche costruite tra il XIV° e il XV° sec., si apriva la porta di Noyon, che, attraversata dalla strada che conduceva dalla vicina Noyon fino al cuore della città, costituiva il suo principale ingresso da sud-est. La rimozione della cinta muraria nel primo quarto del XIX° sec. e la costruzione dei *boulevards* de Belfort e d'Alsace-Lorraine trasformò profondamente la forma urbana, determinandone l'apertura e individuando in questo luogo una nuova, possibile centralità, attraverso cui governare l'espansione estramurale della città. La costruzione della gare du Nord, che da un lato la collegava a Parigi, dall'altro al nord della Francia, pur modificando il carattere del luogo, non ne alterò sostanzialmente il senso, riaffermandolo come una 'nuova' porta della città moderna.

Figura 3. Amiens, Place Alphonse Fiquet. Prospetti e sezioni della piazza nel progetto di Auguste Perret (rielaborazione dell'autore).



3.1. La composizione della piazza

Il 29 settembre 1942 vennero presentati alla Section d'Architecture i quattro "studi della composizione architettonica di Amiens" (il *parvis* della Cattedrale, la piazza del Mercato, Place Gambetta e Place Alphonse Fiquet), e Perret mostrò i primi progetti per la piazza.

12 *Ibidem*.

Secondo un'idea di spazio urbano già indagata dal maestro parigino nelle sue precedenti esperienze, il progetto si definisce come un'unica grande architettura trabeata attorno a una piazza quadrata di 122 metri di lato, che può rispondere anche, attraverso i suoi 'dispositivi interni', a tutte le situazioni particolari dettate dalla sua disposizione in quello specifico punto della città: lo sbocco della rue Jules Barni, l'ingresso della rue de Noyon, l'accesso ai boulevards d'Alsace-Lorraine e di Belfort, e il passaggio verso la rue Vulfran Warmé[12].

Questa grande architettura si compone, secondo le parole dello stesso Perret, come un "insieme armonioso" di elementi distinti tra i quali sono chiare le gerarchie reciproche, in quanto è possibile riconoscere nello sviluppo del perimetro della piazza degli elementi primari - la torre da un lato, la stazione dall'altro - che come delle 'figure' aggettano e si stagliano sul fondale continuo costituito dalle architetture resienziali che delimitano lo spazio della piazza, nonché il loro ruolo specifico nella costruzione dello spazio urbano.

La torre, che probabilmente costituisce l'elemento di maggior risalto di questo *ensemble*, si formalizza all'interno di una serie di esperienze, che, fin dalla realizzazione dell'*immeuble* al 25bis di Rue Franklin a Parigi, avevano riflettuto sul ruolo dell'edificio alto nella costruzione della città contemporanea, e più nello specifico, si colloca in quella particolare parte della sua ricerca che aveva indagato la disposizione dell'edificio alto all'interno della città compatta e i rapporti stabiliti con gli isolati urbani al suo piede. Nel progetto per place Alphonse Fiquet, la torre, isolata, assume il valore di un caposaldo a scala urbana e territoriale, riconoscendo ed enfatizzando il valore posizionale della piazza. Come ha sottolineato Abram, oltre a prendere senso alla scala della città intera, essa regola al contempo la spazialità dei luoghi più prossimi: «attraverso la sua posizione precisa e il suo profilo, contribuisce alla differenziazione di cinque sotto-spazi strettamente connessi (che si potrebbero definire come delle "piazze nella piazza"). Essa si lega attraverso questo mezzo agli spazi che la città le offre, "solidificando" l'ingresso della rue de Noyon "limitando" i boulevard de Belfort e d'Alsace Lorraine, "dividendo" la piazza in due entità, lato città e lato stazione»[13].

Sull'altro lato della piazza si dispone la stazione, simmetrica rispetto all'invaso spaziale nella disposizione della grande aula di ingresso, che costituisce una 'espansione coperta' dello spazio della piazza[14].

Il fondale su cui si stagliano la torre e l'aula è invece costituito da edifici bassi a sviluppo lineare, come la stazione delle autolinee, un ufficio postale, degli edifici per residenze e spazi commerciali, che 'completano' il tessuto urbano costituendosi come testata degli isolati retrostanti, di cui ne assumono la misura.

Questi elementi eterogenei da un punto di vista tipologico e scalare - la torre, l'aula, i fronti degli isolati -, trovano la loro comune misura nella maglia geometrica (6,50 m x 6,50 m), che coincide con quella dell'ossatura in calcestruzzo armato, riaffermando un principio già espresso nella costruzione della città storica, in cui il rapporto tra la grande mole della cattedrale e il tessuto minuto delle case si risolveva grazie all'assunzione della medesima campata strutturale.

3.2 Le città à beffroi del nord della Francia come 'tipo urbano'.

Oltre queste considerazioni, è possibile interpretare il progetto per Amiens anche in rapporto a una sapiente ricerca sulle città del nord della Francia, definite 'tipologicamente' da Perret come 'città a *beffroi*'. Sembra dunque essere il riconoscimento della ricorrenza del *beffroi*, la torre civica che caratterizza le città di questa regione, che, al di là delle numerose varianti riscontrabili nelle forme di queste città, giustifica quella che può essere considerata come la scelta fondativa del progetto: qualificare un nuovo centro della città attraverso l'introduzione di un edificio alto capace di dialogare con le altre torri della città. Lo stesso maestro parigino aveva affermato: «Ho realizzato una torre di 24 piani ad Amiens perché queste città del nord sono 'città a *beffroi*'. Dato che non serve a portare un orologio e delle campane, il mio *beffroi* sarà abitato, ecco tutto. 20 piani di abitazioni, 4 di servizi pubblici, 104 metri di altezza. È un *beffroi*, ecco tutto»[15].

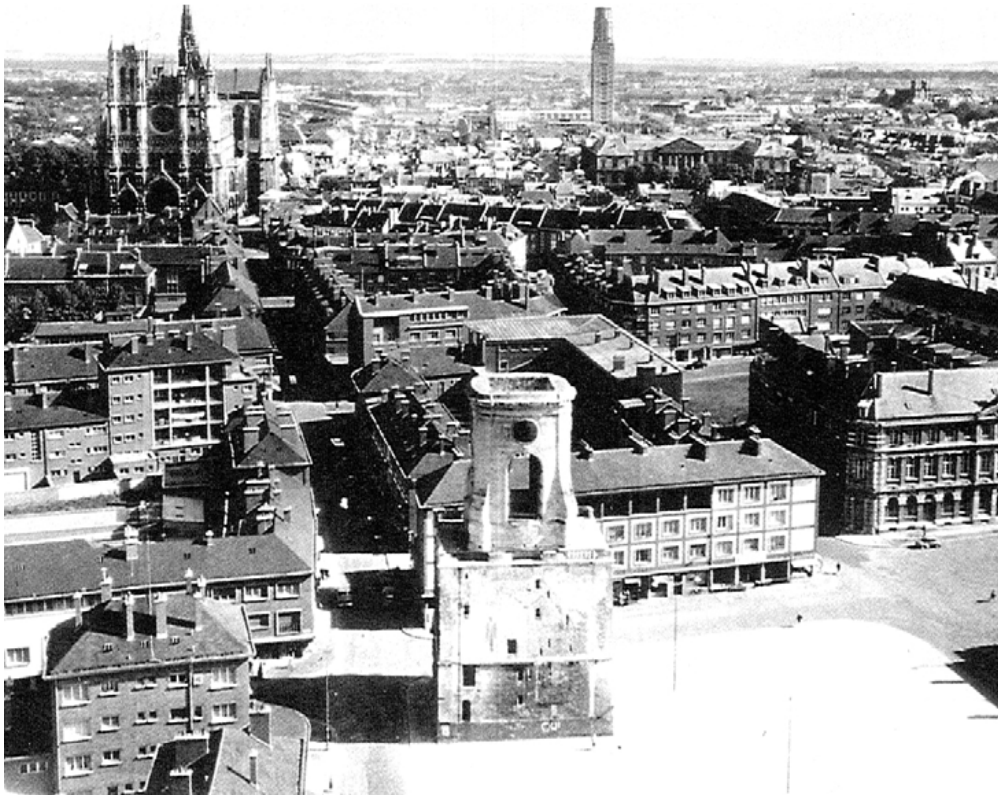
13 Abram 1997, p. 40.

14 *Ivi*, p. 41.

15 Com'è noto, il progetto per la stazione fu significativamente modificato dalla SNCF, e pertanto non rientra nella trattazione del presente studio.

16 Perret, A. (1948), *Grâce à deux grands bâtisseurs, la France va construire les immeubles les plus modernes*

Figura 4. Amiens, veduta dell'antico *beffroi* della città, della cattedrale e della *tour* Perret in place Alphonse Fiquet.



La relazione che è possibile istituire con le 'città a *beffroi*' del nord della Francia sembra insistere su diverse scale, innanzitutto quella urbana, poiché queste città sono spesso intrinsecamente connotate dalla relazione dialettica stabilita tra due centri: due piazze come luogo ed espressione del potere civico l'una, e di quello religioso l'altra, ciascuna delle quali viene rappresentata nel suo valore di 'centro' a scala urbana e territoriale, attraverso la disposizione di edifici alti, che assumono le forme del *beffroi* nel primo caso, delle torri campanarie nel secondo.

In secondo luogo, è possibile riconoscere un'ulteriore analogia nella composizione del 'centro' urbano, in particolare nel ricorso ai medesimi elementi costitutivi. Come in molti casi, lo spazio di queste piazze era delimitato attraverso una serie di edifici d'abitazione, qualificato attraverso un'edificio collettivo, come l'*hôtel de ville* o l'aula civica, che esprimeva la sua destinazione attraverso le forme del tipo 'ad aula', e punteggiato attraverso la disposizione di un edificio alto. Nel progetto di Perret è possibile riconoscere il ricorso agli stessi elementi nella costruzione dello spazio della piazza: le residenze, l'aula e la torre, composti secondo sintassi differenti rispetto a quelle dei loro antecedenti tipologici, che in questo caso vedono la disgiunzione tra l'edificio alto e quello ad aula, generalmente disposti a costituire un unico elemento complesso.

In terzo luogo, è possibile riconoscere un'ulteriore analogia alla scala del tipo edilizio e dei modi della sua costruzione. Esemplificativa è l'osservazione di alcuni schizzi dello stesso Perret, che cominciò lo studio del *beffroi* dal suo stesso coronamento, la parte maggiormente caratterizzante. La torre conobbe molte versioni, ma il suo carattere variò poco rispetto alla prima ipotesi. Nella sua versione definitiva, questa si sviluppa secondo un procendimento compositivo che vede l'impilamento di parti di diversa geometria che ne accentuano la componente scultorea e ne alleggeriscono la forma verso l'alto, come riconoscendo in questo un carattere propriamente 'gotico' della costruzione[16].

du monde, cit. in Abram *et al*. 2006, p. 429.

17 Si confronti, ad esempio, la torre di Perret con il *beffroi* di Bruges.

4. Conclusioni

Alla luce di queste considerazioni è dunque evidente come la risposta fornita da Perret alla questione del rapporto tra la città antica e quella contemporanea si risolva non tanto tramite un'esteriore imitazione stilistica, quanto mediante un procedimento che attraverso la ricerca tipologica, l'istituzione di rapporti analogici e da ultimo, attraverso la condivisione della medesima cultura costruttiva, vede una reinterpretazione delle ragioni più profonde della tradizione delle città francesi.

La ricostruzione di Place Alphonse Fiquet non si risolve dunque nella riproposizione di un'immagine particolare della città della Piccardia, quanto nell'invenzione, intesa etimologicamente come ritrovamento, di forme che manifestano un legame e un'appartenenza a un più ampio mondo culturale, che è quello delle città francesi del nord. È dunque questa la ragione che spiega la scelta fondativa, nel progetto per la piazza, di collocare un *beffroi* là dove non era mai stato, come se ci fosse sempre stato, e di ripensare coerentemente e storicamente la forma urbana all'interno della relazione tra la torre civica e la cattedrale gotica.

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Mapping places and memories through language: the AFOr (Archivio di Fonti Orali) project

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The relation between architecture and place mapping has not yet been fully developed by researches on oral history. Mapping is a powerful tool to represent and describe a place; however it often lacks a diachronic dimension that can provide an insight into the dynamics of transformative processes. In order to overcome this issue, we propose the inclusion of a diachronic linguistic dimension in the mapping process.

We present AFOr, a digital archive of documents on Villaggio Artigiano (lit. Artisan Village), located in Modena (Italy). The archive contains materials from the last 50 years, including newspaper articles, official documents, as well as transcriptions of interviews to the inhabitants of the Villaggio Artigiano. Through corpus and cognitive linguistics methods and theories, we investigate the language features that characterize the area; in particular we focus on identifying how the Villaggio Artigiano has been represented and narrated throughout the years by its inhabitants, the media, and the historiographic community. The results are then used to analyse the relations between the language of the community and the places in a diachronic dimension, and allow for a graphical mapping of the network that the archive outlines.

Introduction

AFOr (Archivio di Fonti Orali, lit. 'Archive of Oral Sources') combines different elements that characterise a wider project, one that has as focal point the ex-mechanical workshop *OvestLab* and the triggering of bottom-up processes in the *Villaggio Artigiano* neighbourhood in Modena. The current project - the digital archive of 'oral sources' - arises from the mutual relation among different disciplines that arose from previous projects, and from the will of fostering a dialogue among the history of the neighbourhood, its current state, and its possible future developments. At its core, the archive has the purpose of establishing a dialectical and dialogical relation between the two dimensions (diachronic and synchronic) of both the neighbourhood and its representation. For this purpose the concept of 'memory' is examined in depth both at a theoretical and a practical level, in order to investigate the relation between 'change' and 'transformation'. This premise has led to the development of a modular project, one that can easily be adapted to the different types of data required for the analyses, and can be used for research purposes by different disciplines and institutions. In relation to this, OvestLab collaboration with the CivicWise network entails that the archive can benefit from the knowledge gained by other experiences of researching the relation between 'change' and 'transformation', and that a series of events related to the use of digital tools in this field will be organised in conjunction with other partners across Europe. *AFOr* has as its main aim that of advancing the recognition of the *Villaggio Artigiano* neighbourhood (lit. 'Artisan Village') in Modena as a place of historical memories[1]. First urban prototype of the *Villaggio Artigiano* model[2] (5 additional *Villaggi Artigiani* were created in Modena between 1953 and 1980), it has had a high symbolic value[3] in the characterisation of the economic, politic, and social history of Modena and the region Emilia-Romagna after World War II. Through the digital archive AFOr we intend to offer a set of tools to analyse and interpret the neighbourhood's undergoing transformations (economic, productive, and social), and to re-construct an identity and a community. Community understood here not with an *exclusive* meaning, but rather as memories and experiences in 'dialogue' with one another in a shared process of mutual recognition . The output is an online infrastructure containing materials (interviews, documents, images, etc…) on the creation and the development of the neighbourhood. Each interview is transcribed to text, indexed, and a set of metadata values is attached to it, allowing different analytical approaches. The materials are then plotted onto an interactive map to provide both a thematic path through the archive, and to visualise the relations that the different sources have with one another. The archive will be available for both academic and artistic fruition through an ad-hoc interface that impinges on the data structure (texts and metadata), while the structure will allow for the addition of further materials (video/audio files, scanned documents, newspaper articles, images, etc…). The digital archive is part of a wider research that Amigdala has been developing at *Villaggio Artigiano* to explore the relation between space and language; a research that started with the 2017 edition of the festival *Periferico*[4]. Here the mapping project *OvestMaP*[5] was developed, with the aim of understanding the relation between citizens and territory through datasets collected during the festival (interviews, questionnaires). The mapping was additionally enriched by a public event on the notion of 'mapping' itself, held during the summer of 2017, where prof. Nicola Marzot (Università di Ferrara) discussed a series of 'tactical actions' undertaken in different parts of Europe. During the same event, the project *Narratori del Villaggio* (lit. 'Village narrators') was launched to investigate the relation between 'territory' and 'words'. Here couples of participants explored the *Villaggio Artigiano*: one would lead the other who, blinfolded, would listen to the verbal description of the area made by his/her partner. The participants would then swap roles, and in the end each participant was submitted a questionnaire where s/he was asked to describe what s/he saw and heard, and how this relates to the emotional perceptions during the performance. The investigation of the relation between 'words' and 'tactical urbanism actions` is becoming more and more central to the actions carried on by Amigdala, and *AFOr* has been developed to add a new perspective to these investigations.

1 cf. Ruggeri 2009

2 i.e. an urban area that merges together work and everyday life, workplace and residential space. Cf. Sintini 2016. See also Comune di Modena 2003 and Montedoro 2004

3 cf. Moretti and Giammusso 2016

4 http://www.perifericofestival.it/

5 Tagliazucchi, Argentieri, Fiorillo (in press)

Methodology

The digital archive comprises different layers of analysis and objectives, from promoting the history and the memories of *Villaggio Artigiano*, to offering the opportunity of fostering a 'public history'[6]. A history that must distance itself from the current literature (which, while an irreplaceable resource for economic purposes, has often ignored the lives of those living in the neighbourhood), from the rhetoric that has been adopted throughout the decades to describe the relation between the city of Modena and the neighbourhood (*Villaggio Artigiano* and its workers as creators of the post-WWII economic success), and from the present (regrets of a now-gone Golden age while facing the current depopulation and delocalisation processes). Recognizing *Villaggio Artigiano* as a place of historical memories is the main aim of *AFOr*, and the project can rely on different and complementary perspectives and disciplines (urban planning, arts, and history) to fulfil it thanks to the collaboration with OvestLab[7] - a *civic factory*[8] created in 2015 by *Consorzio Attività Produttive Aree e Servizi*[9] (the institution formed by thirteen municipalities from the province of Modena) and managed during the period 2017-2019 by the association *Amigdala*[10] -, *Archivio Architetto Cesare Leonardi*[11], and *Istituto Storico di Modena*[12]. The collaboration and reciprocal 'hybridisation' of these disciplines constitutes a distinctive trait of this project; furthermore the collaboration between history and architecture, together with the central role of *Villaggio Artigiano*'s physical space and its community - in particular the religious one, formed around a group of worker-priests -, allows to respect one of the cornerstones of *oral history*: the inseparable relation between space and memory[13]. The digital archive is not in fact a mere collection of stories as told by the neighbourhood inhabitants: through the integration with digital tools and maps it becomes an analytical tool allowing users to interpret and understand the history of *Villaggio Artigiano*. It will, for example, be possible to visualise the diachronic development of the neighbourhood, or to focus on a specific time range. Similarly it will be possible to conduct language analyses thanks to the creation of a linguistic corpus containing the transcription of the various sources. The project is structured in four different stages:

1. Involvement of the inhabitants and tracking of the available materials (documents, interviews).
2. Recording new interviews.
3. Creation of the online digital archive, and subsequent analysis and visualisation of the data.
4. Public performance involving an artistic rendition of the project, curated by Amigdala.

During the realisation of the archive, a series of events will be organised in *OvestLab* to promote the project and to foster a reflection on the use of digital tools in urban regeneration and social inclusion. In October a coding day for programmers will be organised to develop new tools for the analysis of the materials, while in November *OvestLab* will host a series of talk on open source and libre tools for 'digital humanities'. The final event (16th December) is devoted to the official presentation of the project, with talks by the people involved to describe how and why the archive has been created.

Forming process

The archive will initially be composed of approximately 30 video-interviews, and is structured to allow for the addition of further materials and sources (such as written documents, images, further recorded interviews) that can automatically be added to the interactive map and be made available for the analysis through various digital tools. The structure of the archive is developed to be as discipline-agnostic as possible, making it a potential resource for researchers and professional in various fields (i.a. urban morphology, history, architecture, sociology, linguistics, economics). The final archive will be made available online through

6 cf. Salsi 2013, Bianchetti 2014, Marzot 2016
7 www.ovestlab.it
8 cf. Tagliazucchi, Bucci, Di Cristofaro 2018
9 http://www.capmodena.it/
10 http://www.perifericofestival.it/
11 www.archivioleonardi.it
12 https://www.istitutostorico.com/
13 cf. Secchi 1996, Sennet 2014

different services: multimedia files are uploaded on the Internet Archive[14], and a collection of items will be created to identify all the materials that belong to **AFOr**; documentation (technical manuals for the digital tools) and the digital tools' source code will be stored on a Git repository[15]. OvestLab's website will host a dedicated section with articles about the archive and the results of the analysis, along with links to the Internet Archive collection and Git pages. Below the four stages of the project are described in more detail.

Involvement of the inhabitants and tracking of the available materials (documents, interviews)

The first part of the project is devoted to identifying those inhabitants willing to collaborate in the creation of the archive. The initial focus is mainly on those people that have not yet been involved in the activities carried out by *OvestLab* and *Amigdala*: besides (ex-) artisans and people who were present when *Villaggio Artigiano* was established, the interviewees are chosen among those inhabitants who do not work/have worked in the neighbourhood, as well as younger generations (i.e. those born after 1980s) and migrants - who can offer a different perspective than the one brought by non-migrants. As part of the interviews, the interviewees are also asked to share documents and materials about their history.

Recording new interviews

Once the interviewees are selected on the basis of their profile and of their availability, sessions are arranged to record the interviews. These are conducted by Prof. Antonio Canovi, and begin with a questionnaire developed by the actors involved in the project. Acting as a guideline, the questionnaire has the function of setting an area of discussion and - most of all - to "break the ice" with the interviewer, who then leaves the interviewee to freely talk about her/his memories and intervenes only to ask for clarifications when needed.

Creation of the online digital archive

After the interviews are recorded, they are processed through ad-hoc digital tools to perform the following actions:

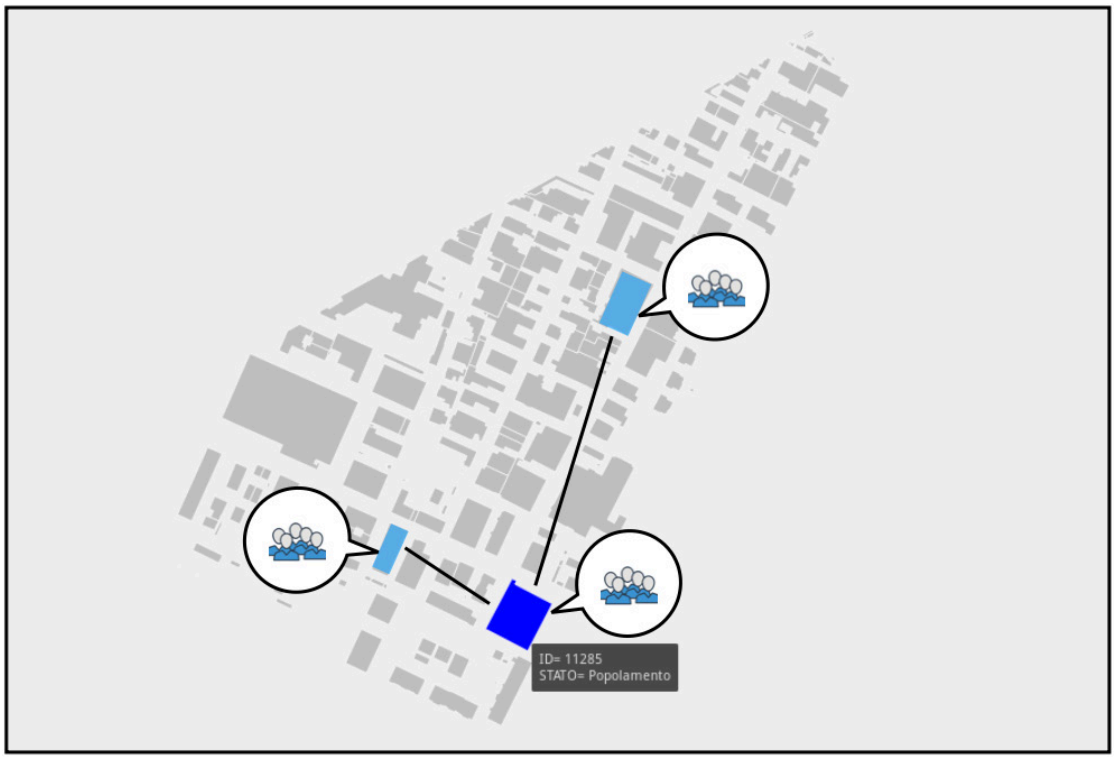
1. Transcription of the spoken part into plain text files (semi-automated process).
2. Creation of the metadata file (one for each interview).
3. Creation of the final (pseudo-) XML files that contain both the transcribed text and the metadata.
4. Creation of the linguistic corpus.
5. Visualisation of the materials on a custom-made map.

Crucial to the final output is the linguistic analysis of the interviews. For this reason their transcriptions are collected in a linguistic *corpus*, i.e. "a collection of texts (a 'body' of language) stored in an electronic database […a] large bod[y] of machine-readable text"[16]; the *corpus* serves as the basis for Corpus Linguistics analyses, where the data is queried and analysed through the help of specially designed software tools[17]. The corpus - formatted in (pseudo-) XML format as required by standard linguistic software tools - will then be loaded into the *Corpus Workbench* (cwb[18]) to conduct the quantitative and qualitative linguistic analysis, and made available in open format on the project's Git page. Each interview contains a set of metadata fields, some of which are collected during the interview process (e.g. the name of the interviewee; the date on which the interview was recorded; a set of keywords that describe her/his relation to the neighbourhood, such as ex-inhabitant, blacksmith, carpenter; the geo-coordinates of her/his workshop/home). Another set of metadata is added through linguistic entity recognition to identify and tag names of streets, industries, places, people, whenever they are mentioned in an interview. All together these

14 a non-profit digital library hosting open creative contents; https://archive.org/
15 https://git-scm.com/
16 Baker, McEnery, Hardie 2006:48
17 cf. McEnery and Hardie 2012:1-56
18 http://cwb.sourceforge.net/

metadata fields will allow for the filtering and querying of the archive, and for the visualisation of the materials and their relations with one another onto the map. The entities in particular will allow to draw the network of relations, as exemplified in fig.1.

Figure 1. Example of relation among different materials in the archive.



Prior to their inclusion in the final (pseudo-) XML files, the metadata values (excluding the linguistic entities) are collected inside of a spreadsheet hosted inside of the Git repository, which will serve as reference for the final corpus. At last, the metadata will be used to create the interactive map, made using Leaflet[19] and the source code developed by Montera34[20] for the project *Cadaveres Inmobiliarios*[21].

Conclusion

The interdisciplinarity of *AFOr* has brought to the creation of new thematic areas still in need of being fully developed. The collected 'oral sources' represent in fact only the beginning of an open archive dedicated to the form of the city, its language - from a linguistic, and not architectural, perspective - and the anthropic analysis of the phenomenon. Open to anyone wishing to view and/or use the materials, the archive can easily be adapted to different approaches and disciplines, as well as tactical urbanism actions[22] such as the installation of multimedia totems to watch and listen to the sources in the space where they were recorded. The multidisciplinary approach to the materials is in fact crucial to investigate such a multi-faceted phenomenon; a phenomenon characterised by the will of its inhabitants to create a place that merges work and everyday life in a new idea of *village*, and by a shared idea of community. It is only by taking into account the 'voices' and the tangible representations of a 'collective imagination' that the relation between space and memory can be analysed: *AFOr* offers materials and tools to operate this investigation.

19 https://leafletjs.com/
20 https://montera34.com/
21 http://cadaveresinmobiliarios.org/mapa/
22 cf. Tagliazucchi 2017

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Analysis device: mega-structures on the threshold

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Keywords: *Threshold, Density, Interface, Mega-structure, Landscape*

The urban framework experiences a permanent face-off with transformation and evolution processes, both inside and outside it, and also on the thresholds. The connections toward a more territorial frame, such as the network of infrastructures are more evident at this stage because of a lower density.

The visible interfaces within the city boundaries, as a sort of urban gates, are not only infrastructures, but also large industrial complexes. Beyond every single case, with its own characteristics, all these situations concern huge artifacts in which architectural qualities are also recognized.

Following my present PhD research path on the scientific mega-structures and their role inside the architectural practice, I will explicit how they could be an efficient device as a provocative case of study to struggle the citys capacity to menage its thresholds. The relation with both the city, on one side, and the nature on the other but also within more complex area in which these two entities are not so distinct can be studied in a register of different scales: from the architectonic level of a laboratory building to the landscape of an antenna, 3 kilometers long, for gravitational wave. It is not just a matter of discussing the placement of these structures, but also how their strong symbolic meaning can be managed and absorbed by the city.

Architecture is facing off a crisis about its relevance on the matter of the city – in spite of connections that obviously exist between both. It does not seem able to deal the complex and dynamic mix of issues and needs inside the contemporary city.

In order to recover its role architecture should focus on a deeper research over the cities' matter, so as to identify some arguments on which it can be determinant again.

Each research about the city must consider the series of contradictions that emerges in the last decades. The main trend describes a large-scale urbanisation, with a frenetic speed: the prevision says that about 69 per cent of the population will live in a city by 2050. The idea of this conurbation process, apparently unstoppable, can generate anxiety and fear because it seems to change our lives in term of quality and lifestyle. Architects do not appear to be able to prevent and manage these changes with a true urban strategy. All their actions take place in retrospect, when it is often too late.

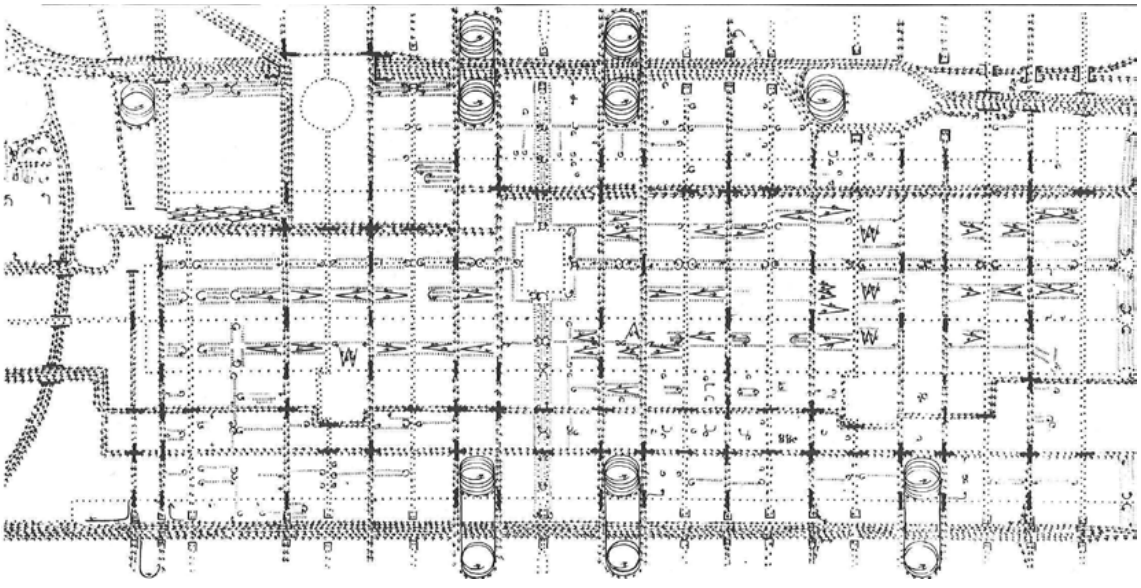
If it is no clear that the future will be as worrying as it seems, then it is not necessary to hypothesise a completely different model of the future, because I think that it will be true that a growing part of the population will live in a "city". But we have to reconsider what is "city" inside this premonition.

Probably the idea of the city as a hyper-technological megalopolis is no longer so relevant. Rem Koolhaas proposes his "new" point of view through the upcoming research/ exhibition "Countryside: Future of the World"[1]. On the opposite side, as evidence that the question about future is absolutely open, I can suggest "Don't Waste Time in the Countryside", written by Patrick Schumacher in 2016.

Inside this uncertainty moment about the very meaning of "city", especially in relation with what it will represent in the future, we are experiencing the dynamics of change and evolution of the present cities.

As architects, we must go deeper with the research on the city in order to deal with the high level of complexity of the matters related to the urban context. Our starting points are two consolidated models, plus certain more "advanced" trends.

Figure 1. Reformed traffic circulation project, Philadelphia (Louis Kahn, 1952).
This scheme underlines how much "circulation" can affect a project, even if the author is not a modernist *tout-court*.



The first model is the historical and traditional city. It is certainly a fact, a parameter, inside the design process. But it is also a clean model of "city", by different elements, shapes, relations, quality. The traditional city is a living mark to be considered very

1 The Solomon R. Gunggenheim Museum has invited Rem Koolhaas and AMO to collaborate on this project. The team involves the Harvard Graduate School of Design. The exhibition will open in fall 2019.

carefully.

Then, the second model: the *city-in-the-park* paradigma, always presented in bewitching images that never really materialize.

If the traditional city is built, is accomplished, this second model represents first of all a design strategy not completely accomplished; it is still under development.

From this *city-in-the-park* model descends an approach that, mixed with the tragicomic Italian bureaucracy, brought at the paralysis of the town-planning/urban design.

The exasperated diagramming, without any efficient model of mediation, of understatement and of contextualization, produce the alienation of the town planning from the reality of life and of the design. A gap that is clear in the major part of the present planning works.

Figure 2. Downtown Fort Worth project (Victor Gruen Associates, 1956).
The model/collage represents the level of the organization – spaces and functions – reached by this proposal, and the impact that this kind of operations has on the surrounding.

To overcome this *empasse*, and to try to dominate the evolutionary processes within the cities, many researches started to work really hard on the analysis.

It can be developed in many different ways. One is quite "historic": the approach of Giovanni Astengo, who worked with a kind of analysis that I call "neo-realista", in the sense of the cinematographic and literature stream from the first decades after the Second World War. A human and accurate point of view on the contexts, both built and social. Unfortunately, this vision fails to affect the design, or it does, but in a non-simple way.

A more recent and "advanced" approach is the KAAU[2]'s one. Inside this path – characterised by a technological and digital point of view – maps don't show a series of physical and dimensional reliefs. The focus looks at relations, connections, "animation" models of an environment instead of the environment itself. The attempt to keep up the

2 Knowledge Alliance for Advanced Urbanism; please see http://ka-au.net and the report of the research.

complexity of the city produces results, in term of design, characterized by the same high level of complexity of the matter of study. The overall results are an addition of different levels – both while reading and designing the city – intertwined and very thick. Unfortunately, this approach is often not easy to understand and to enforce.

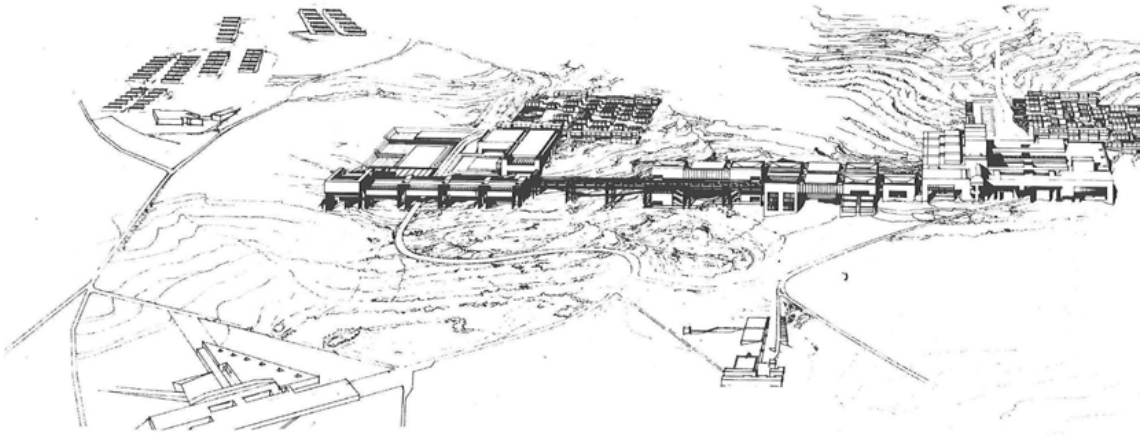
Furthermore, the *formal* subject is outstanding: completely ignored by this advanced approach and not held in due consideration even by the most classical visions.

Marco Romano, on the contrary, pointed the attention on a system based on logic bonds, displayed in sequences. The core of this logic system is the exterior shapes of the buildings, but more in general is related to the entire form of the city. It is his *aesthetic theory*.

Before trying to summarise the Romano's point of view it is necessary to spend few words on two important forewords.

The first regards a methodological argument: "theory". It is an interesting concept, whose etymology bring us to the Ancient Greece: within the *polis* the "*teori*" were the people sent, as city's delegates, to attend to important religious and sport events. Their role was to observe the rites, and this condition means that they had to take part to the rites, but from the outside. "Observe from the outside" can be a proper synthesis of the heart of what is the architectural theory: it looks at the discipline from an external point of view[3].

Figure 3. University of Calabria project (Vittorio Gregotti and partners, 1974).
The competition entry, more modest than Florence's one, sketches a megastructure larger than ever built.



The other concept to be briefly discussed is "form". Regarding the city probably it will be better to use it in the plural, "forms". This "grammar" detail depends by the kind of research that one wants to achieve and by the degree of in-depth analysis one wants to reach, but it is clear that different levels can naturally co-exist inside the whole theory. If you want to make a main description of a city, something more synthetic than analytical, you can draw quickly a representation made by few signs, few shapes, but with both a strong element of personal interpretation and a strong communicative power, such as an icon. Then, inside the same frame on interpretation, you can work a little bit on the details that emerge from the city when you try to improve your knowledge about it. What will probably happen is that more forms will become evident and you can represent the city through different and maybe contradictory, but always overlapping, forms. Behind every sign there is a process marked by a certain degree of complexity: various interests at stake, different cultural approaches, unstable lifestyle and trends, etc. And also working on the urban form means dealing with disciplines like history of the city, social analysis,

3 This analysis about a definition of "architectural theory" is taken from a conversation with arch. Ph.D. Antonio Lavarello, later reported in an essay not yet published

hygienic principles and so on.

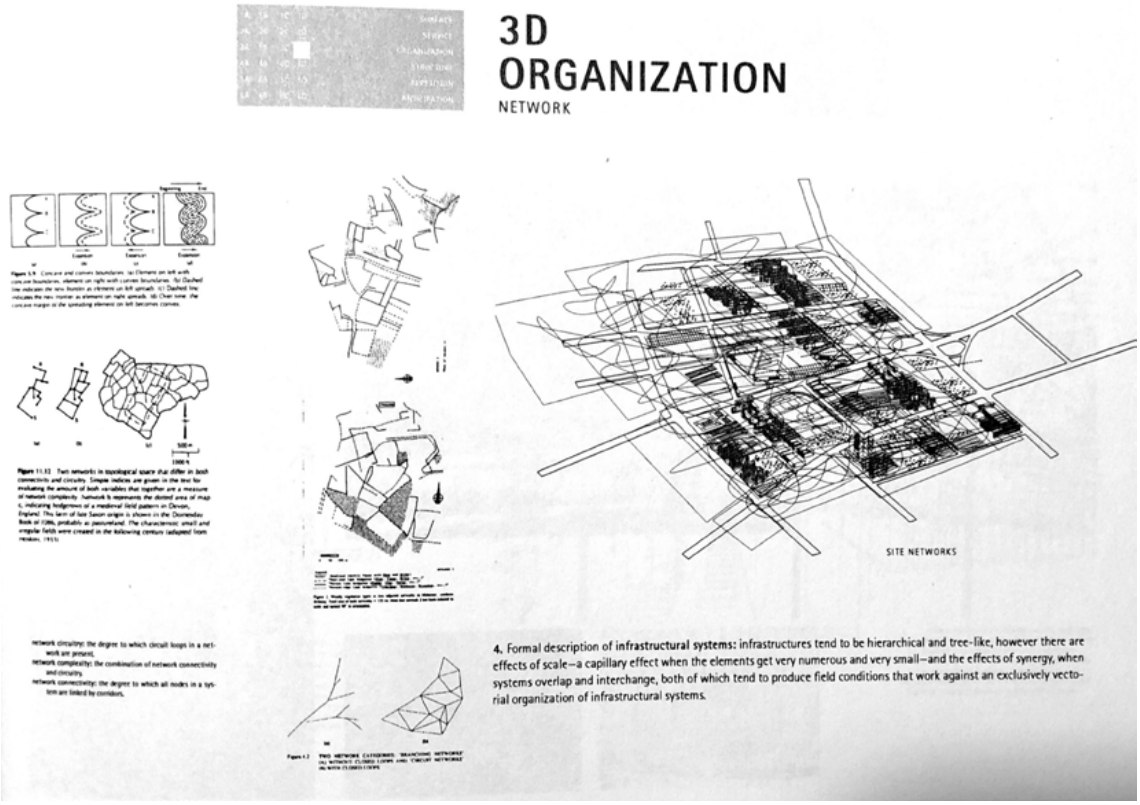
The theoretical approach of Marco Romano fits perfectly the concept of "theory" as previously expressed and the needing for a *formal* investigation. He oriented the research toward a focus on the observation, as literally intended, of emerging characteristics of the city, to build a description based on what people see, not on single-side analysis, each very specific, put together afterwards. An architect has a different gaze than common people and his feeling is probably – or hopefully – more accurate or simply more focused on certain circumstances.

Romano's method is focused on the *surface* of the state of the art of the city and this approach allows a real and tangible comprehension of the elements that compose it and the system of relations that operates within it. This *skin-deep* contact does not produce approximative method and results, because a certain degree of interaction with other disciplines is nevertheless established. It happens especially with commonly considered secondary disciplines like, in this case, anthropology and sociology. Far from being really secondary, they look at the very base stage of human communities and it is what Romano looks for to retrace the development of the city, specifically the European one, under the aesthetic point of view.

The formal/aesthetic approach – expression of a much broader system of values – led the development of the city for a long time. The city worked for centuries on its inside: it grew enlarging its edges, but the actions as a collective force – the whole entity made of all citizens that Romano, following the classical tradition, calls "*civitas*" – were pored over the redefinition, over the re-shaping of the inside area, which is identified consequently as "*urbs*".

Even if new elements or functions were disposed on the edges, soon the expansion of the city brought them inside the fabric and suddenly the *civitas* started to think how to assimilate them. It was not so difficult because, typologically speaking, additions were not so different than the existing city – buildings, streets, squares and so on.

Figure 4. "Organization" panel for Logistic Activities Zone project in Barcelona (Stan Allen, 1996).



Then this recursive process, engine of the city's life for centuries, got a crisis. For Romano it happened because of the problem of "circulation", within the city and between them at a wider scale – so approximately around Twentieth Century. If circulation challenged the traditional process of settlement of the city mainly in-between of its consolidate forms, I think that also the factories must be considered as one of the elements of the crisis of the city, in a quite exclusive relation with the threshold.

Since the second half of the Eighteenth Century England started to build factories that tried to be as more familiar as possible in respect of other buildings. The Albion Mill on the South side of London near the Blackfriars Bridge, a flour mill power by a steam engine[4], was designed as a traditional building with classical architectural principles and decoration. This approach of a sort of gradual and peaceful coexistence between the classical city and these new elements was extended to a lot of industrial cities, such as Manchester, Leeds and so on. But that idea was undoubtedly ephemeral and soon the dimensions of the factories made any sort of *camouflage* impossible. The rise of the so-called "heavy industry" established greater awareness about the existence of those big and complex *objects* that were unrelated with the history of the city and with the management process of the evolution of its forms as described by Romano.

"Aesthetic" parameter stopped to determine the design of the city. Two main factors create, in my opinion, the crisis: factories and infrastructures. They act in the threshold between city and nature, and that is the location of the crisis of the city.

Crisis arose from the inability – descended from the absence of experience – to deal successfully with this kind of objects, but it also depends on the speed of the appearance of those elements – which is basically the speed of the progress itself.

The city and, by consequence, architecture aren't able to find a solution in continuity with the traditional approach. Most of this situation is connected with the deep differences that characterised these entities in relation to what was previously absorbed by the city.

The estrangement was so hard that architecture has almost renounced to take care of factories (or similar) and therefore of the threshold, which have become, through factories and infrastructures, an expression of engineering. The main exceptions are probably the residential sector and the "zoning" – as the unique form of urban project today. The sad fact is that probably these are two of the themes in which architecture does not give its best at the moment.

Starting from the complexity of the *city* and from the consciousness of the relevance of the urban form, architects are called for an incessant attention to this subject, in order to improve our instruments about description, conceptualisation and theorisation and finally to reaffirm our deep competence on the project of the city.

My proposal is quite different than building a theory or establishing a further analysis, because I think that the way of nit-picking, in term of breaking a situation in small pieces, can't be successful in this case. My attempt regards the usage of a "device" that is able to struggle the context: urban fabric, threshold and nature.

"Device"[5] is an important term. Giorgio Agamben wrote a tiny book devoted to it, from a philosophical point of view, in which he retraces various elements from the work of Foucault and Hegel. Foucault in particular during an interview in 1977 said:

«First of all what I try to identify with this name [device] is an absolutely heterogeneous whole that involves discourses, institutions, architectural structures, regulatory decisions, laws, administrative measures, scientific statements, philosophical, moral and philanthropic prepositions [...]. The device is the network that is established between these elements. [...] The device has a strategic nature and it implies a certain manipulation of strength's relations and of a direct intervention over the balance of power, either to orient them in a certain direction, either to block them or to fix them or to use them. [...] The device is precisely this: a set of strategies regarding the power relations that conditions certain types of knowledge and that is conditioned by it.[6]» (Agamben, 2006)

4 It was only the third steam engine produced by Matthew Boulton and James Watt

5 It has some other synonymous, such as "apparatus" or "system", all referred to Italian "dispositivo"

6 This excerpt was translated by the author, from the text published in Giorgio Agamben, Che cos'è un dispositivo? (Milano: nottetempo, 2006), pp. 6-7. The original version was presented in Dits et écrits, vol. III, pp.

I think *this* device is a proper *escamotage* to examine in depth the context of the threshold and, more in general, of the urban area.

Architecture took on the urban design with its "megastructure moment" during Sixties and Seventies, probably starting from other forewords than to resolve the crisis that I addressed before, but in any case producing something that can help that work.

Fumihiko Maki, in 1964, defines "mega-structure" as «a large frame in which all the functions of a city or part of a city are housed. It has been made possible by present day technology. In a sense it is a man-made feature of the landscape. It is like the great hill on which Italian town were built.» (Maki, 1964) In 1968 Ralph Wilcoxon improved the definition with an explanation more schematic and articulated.

At the beginning of the megastructures' tale there is the city, and this is quite surprising, mainly because they have not similarity with the traditional form of the city. If this aesthetic factor makes impossible the automatic assimilation of the megastructures into the city according to the traditional processes, it creates a detachment that helps an independent judgement.

However, the city was the heart of the reflection and of the design of megastructures. This fact is evident by the taxonomy of cases «admitted, appointed or discovered to the megastructure canon from past periods» (Banham, 1976) as conveniently collected by the masterpiece on this subject: Megastructure by Reyner Banham.

Banham said that megastructures are the perfect answer to the separation between architecture and urbanism, because they work on a ground abandoned by both the disciplines. Banham called it "urban situation of about half miles square". Inside that space megastructure reasons in parallel with multiple factors, about both landscape and architectural composition. There is a continuous dialog with the context, and in fact the megastructure doesn't take care only its internal structure, but it looks outside at the relations that emerge – naturally or artificially – with the context.

Admitting that each megastructure realizes a perturbation of the dynamic equilibrium of the context, we know that every system tends to return to equilibrium[7], carrying out actions of different types. These relations and reactions are the more interesting product of the hypothetic contribution of the megastructure as an analytic device.

Megastructure means experimentation, looking at macroscopic and symbolic aspects, like in Instant City[8] project, that also highlights a functional attitude that explain a close relationship between the megastructure and the theme of "infrastructure". A link that guarantees them, beyond cyclical sequence of trends, a constant topicality.

The ability of megastructures to associate different concepts, functions and forms with each other, emphasizing the system more than the elements, is unique. The resulting symbolic effect in the collective imagination is disruptive: large astonishing machines devoted to a purpose – specific or generic. A complex of form and function effectively condensed.

This is not just about the single object, but it is addressed to the whole context. In 1968 Ungers produce the study "Berlin 1995", from which comes this image. Inside the relation of the study he stated: «the concept of "megastructure" used in this study will not be designate a universal, multi-purpose and omni-competent super-building, but will describe this new type of three-dimensional architectural planning». Compared to planning, megastructure is presented as a device based on the idea of relationship, able to activate its context, prepared for an analysis of interaction between the components rather than an "a priori" point of view. The project for the Bay of Tokyo by Kenzo Tange in 1960 is a proper demonstration for this designing values, both when it occupies the existing city and when it designs the expansion.

I think that we might use megastructure as "structure" under the meaning described in Words and Buildings[9] (Forty, 2004): an interpretative key extended to the whole urban

299-300.

7 Please refer to the Le Chatelier's principle as universal expression of this natural rule.

8 Project by Stanley Tigerman, 1968.

9 Forty's thinking can be summarised in: the structure is the system of relations that manages a subject, like a building, and which allows to understand it.

fabric, by whose complexity trying to understand a bit more how we can struggle the crisis of the city and the crisis of architecture itself.

I'm appealing to the work that Stan Allen has started on infrastructure, claiming that «infrastructural urbanism offers a new model for practice and a renewed sense of architecture's potential to structure the future of the city» (Allen, 2012). A semiotic architecture can really reactivate the relationship between city and architecture.

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The role of urban analysis in the requalification of schools in historical centers, the case of Via Giulia

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Keywords: *Via Giulia, School regeneration, Urban morphology*

The research involves the Piazza Della Moretta zone, specifically the Virgilio High school adjacent to the Via Giulia street in the historical center of Rome as a subject of urban regeneration. The interest in this area arises for the existence of the void, amidst a continuity of consolidated urban fabric, that remains an evidence of the rejection towards the demolitions of the 1940s. The general scope is to identify a certain grammar of the urban form, that will further explain how the formative principles have determined the city as we know it, and that describes the value of the relations between the historical and contemporary spaces. The approach that combines tools of morphological analysis with readings of the historical archives, is meant to clarify the way the heritage is reflected in the project of the city. The designated fabric is rooted to the expansion axes of the Claudio-Nerone era that are projected from Campo Marzio. Subsequently, Via Giulia became the manifestation of many modifications and witnessed the complex constitutive process of the city.

Departing from a base of critical reading of the process, the aim is to re-stitch the fabric recomposing the forms and the significance of the places. Thus, the design strategies of the Virgilio school will be defined following the new national guidelines for educational systems. Therefore, its imperative to rethink spaces that would offer flexible, multifunctional, and modular solutions; that will in turn satisfy both educational and urban needs hence becoming the civic center that would give way to a local cultural development.

Introduction

This paper is a reflection on the formative process for the urban roman tissue located on the northern side of the Campo Marzio zone. It suggests a reconstruction of the strategic system of the urban tissue while concentrating mainly on the rules of the anthropic behaviors that contributed in the development of the city and that could suggest also presently, some tactical lines for the contemporary project in the historical city.

The investigation has been conducted by the authors of the paper, undergoing their first academic year as PhD candidates at the DRACo department of architecture, the University of Rome "La Sapienza". The authors also collaborated with the masters department of restoration in order to amplify the study's outcome, there, an interest was expressed in the course of "Progettazione I AR" for Professor Paolo Carlotti. The subject was the main topic of applied experimentation for the requalification of the Virgilio Highschool and the adjacent Piazza della Moretta.

In the study presented below, the built form is examined through the morphological analysis, the expeditious reading of the cadastral particles and the study of the mural map. The first, based on the current work, allowed to recognize the previous phases of the present urban form while the second, confronting the mural map and the particular division, permitted the reading of the older mural structures that are actually concealed in the confusion of the actual cadastral makeup and that were used as a foundation for the more recent elevations.

The recognition of the building types and the basic type, permanent in the plot of the design of the city and also now often recognizable in the recast form of one or more buildings, allows the understanding of the architectural character of the manufactured projects as an outcome of the transformation process of the city.

The studies actually demonstrate, in fact, how the recasts and the restructuration of the elements of the built fabric have occurred in the past in order to create a series of new and specialized buildings. The special types are therefore expressions of the buildings' transformation process from the basic type that evolved characterizing itself for a greater superficial extension and adapting to the context and for the reorganization along the dominant path.

This research sustains the necessities to understand the formation of the existent ambient and the preliminary transformation process in order to be informed of the obtained results with the morphological analysis, and to also be congruent with the rules that control the dynamic process that determined the contemporary built form.

This reflection thus looks into the extraction of the rules and the methodological criteria to implement for the compositional and architectural exercise to finally restore a renovated form and a new space for the urban fabric, all this through the potential cognitive instruments of urban morphology. The project is presented thus as an adaptation; as a conciliation between the emergent human needs and the structure of the historical city that should be conserved as a recognizable and unique cultural identity.

The comprehension of the key aspects affecting the specialization process of the urban fabric offers the main reasons integral to the introduction of new public structures in the nodal area under study. The introduced special building could then present a structural role following the eradication of the dense and consolidated urban fabric of the years 1939-1940 and also contribute to the revitalization and requalification of the context.

Methodology

The significance of the form

The topographic drawing sums up the history of the city. The urban landscape; the actual form of the city, is the collective outcome of subjects that gradually mutated with time the structure and the meaning. This is narrated through the form, the land lines and the constructed perimeter.

Recognizing and reading these elements allows the reconstruction of the phases belonging to the events or urban happenings that, both diachronically and synchronously, have contributed into the formation of the urban fabric. The cadastral drawing that exhibits the lots and blocks describes a series of episodes whose interpretation defines the process that generated and then transformed the form.

The study of the built volumes and of the lotting, observable through the actual cadastral cartography, permits the direct recognition of the traces that overlap the previous buildings. These building diaphoras, imposed by a project, emerge from the design by prescribing new orientations, dimensions, axes and nodes. These operations both eliminate the preexisting signs, and retain the traces of residual masonry that vindicate and attest to their belonging to the most ancient fabric. A regular and orthogonal lot in respect to the adjacent route tells of its belonging to the same route and it is therefore matrix to it; meanwhile an irregular lot denounces through its own shape the very belonging and is therefore an adjustment to the route or an adaptation to a residual situation of spaces (restructuration).

Proceeding then with the gradual subtraction of the more recent superposition, the aspect of the previous configurations is deduced. Lastly, the remaining traces depict the plot of the minor construction, consisting mostly of elementary constructions (monocells or bicellulas), which preserve the fundamental reason for their form in the private and serial character.

In addition, we can distinguish some dystopian differences involved in the transformation of the building type and of the urban fabric, which allows us to observe formal synchronic outcomes due to both design intentions and physical-orographic interferences.

In fact the drawing of the mural warp and the form of the particle aggregate have reason to be in the orographic condition that characterizes the place, the spontaneous paths are often more related to the physical characters of the terrain, but right where the land presents constant and flat physical characteristics, the map reveals the ideal form of the original organization of the settlement.

In 1873 the regulatory plan of Viviano forsaw for Roma Umbertina a series of eradications, which, around the church of San Giovanni dei Fiorentini, would have connected the historical center with the Prati di Castello neighborhood through the realization of Corso Vittorio Emanuele and the prolongation of Via dei Coronari.

In 1888 the construction works of the Tiber walls began and the subsequent demolishment of the inhabited margins facing the stream. The succeeding plan, dating 1909 and only partially executed, envisaged the realization of a new varied axis that would connect the Mazzini bridge with Via di Ripetta passing through Piazza della Chiesa Nuova. The demolishment then regards exclusively the area that spans from the Cerceri Nuovi to the Santo Spirito dei Napoletano church next to which was situated the Virgilio High school, designed by architect Marcello Piacentini (1936/1939).

Nodalities and pertinent bands in the contemporary formative process

Through the morphological analysis of the cadastral design delimitated between Rione Ponte and Rione Regola, we can distinguish Corso Vittorio Emanuele and the Lungotevere, along with their extensions, as the two distinctive limitations to the reviewed area. These two elements emerged between the late 1800s and the first decades of the 1900s as epitomes of the development of the city and as reflection to the pressing need for a social and economic transformation on the level of the modern European capital.

Even though the streets' widths and the forms of the new lots adjacent to these streets could explicitly declare the restructuration nature, however, through an extensive morphological evaluation, these courses present some diverse characters and a different understanding of the fabric and how it is dwelled.

The first course, Corso Vittorio Emanuele, originally traced to link Piazza San Pietro and Piazza Venezio, but also linking the intermediate poles of the Chiesa Nuova and the Cancelleria, manifests in plain clarity its defined position as a new "urban matrix" which triggered the formation of some new orthogonal and countermeasure constructions

along its continuation.

The drafting of the new nodal and centralized track, and the extermination of the urban tissue have pushed the need to revisit the forms and expressions of the buildings in a new assigned purpose in the complete indicated fabric.

The second course, the Lungotevere, antinodal and dividing, presents in part some regular forms of grand scale determined by the metropolitan intention, and in another part, the restructuration of the preexisting buildings as an adaptation to the new track.

Nodalities and pertinent bands for the city of the popes

The sign of via giulia (1503/1511), dating back to the "Renovatio Romae" and depicting the works of Giulio II della Rovere under the Bramante project, is highlighted as a sign overwritten among the Roman fabric. This course, belonging to a partially concentrated fabric, exhibits its restructuration nature on the eastern and southern sides. The misalignment between the buildings' walls and the reproduced elevations along the course and the non-orthogonal orientation of these walls compared to the courts demonstrates that the occurrence of these elements is conditioned by the extension of the older tracks.

On the contrary, the formation of the new tracks that implement new fabrics along the Tiber demonstrate the character of the western and northern matrix. This route is polarized on one side by the Sisto Bridge on Via dei Pettinari, which connected it to Trastevere and on the other side to the Port of Ripa Grande, then to the area of the old banks and finally to the Vatican.

Furthermore, foreseeing an intermediate polarity constituted by the Palazzo dei Tribunali, the project is then conceived by employing a wider view along with the contemporary realization of the Via della Lungara.

In fact, the pope Giulio II looked at Rome as a starting point for an absolutist church-nation based on the complete modernization of the medieval organizational structures of the city thus favoring a process of thorough reorganization of the state.

Via giulia belongs to this new urban layout of Rome; a road axis that would connect the Vatican to parts of Rome with buildings of greater political and economic influence (Palazzo della Camera Apostolica, La zecca, the Palazzo della Cancelleria Vecchia, the Palazzo dei Tribunali) would have assumed a representative financial value. This renovation program was however interrupted at the death of Giulio II and of Bramante and found its continuation only afterwards with the attestation of the church of S. Giovanni dei Fiorentini as the terminal pole of the entire axis.

The verification of the declared data is possible through the review of the archived documents cited below; in the Bufalini plan (1551) appear the churches of San Giovanni dei Fiorentini (XIV/XVIII century), San Biagio and San Nicola, in addition to the Palazzo dei Tribunali (which appears under the name of "Palazzo di Giulio II") and Palazzo Farnese ("Palazzo di Paolo III"), while in the map of the Tempesta (1593) in addition there are l'Oratorio del Gonfalone (mid-16th century), Palazzo Ceoli (later Sacchetti) and the churches of Santa Lucia, Santa Caterina and the Spirito Santo.

Carceri minorili 1825/1827
Ospizio deli aremeni, 1830
Santo spirito dei napoletani, 1853
Palazzo delgi stabilimenti spagnoli, 1846/1862
Unificazione san giacomo delgi spagnoli e santa maria del monastero, 1817

Nodalities and pertinent bands in the matrix geometry of the Campo di Marte

The observation of the abovementioned restructuration courses allows the circumscription of an area of ancient origin. The study of the cadastral cartography and the emphasis of the permanence of the main wall sections (main masonry structures of a private nature) allows us to highlight the hidden relationship between the built and the

shape of the terrain. In fact, it's in this area that we can retrace a sequence of mural tracks belonging to the same ordinate system and that could present the remainder of construction connected to an original organized geometry. It is possible to state that the fabric, mainly for residential use, was distributed in two different ways.

On the one hand, the mural map highlights the presence of more "spontaneous" paths, perhaps more related to the physical characteristics of the territory. On the other hand, the nature of the strongly geometric structure suggests a residential expansion of the city based on the original design of the Campo Marzio and organized according to regular routes. The implementation of this urban system was however subordinated to the hydraulic Augustoe reclamation works and to the channels necessary for the use of the areas adjacent to the Tiber. In fact, near the current Sisto Bridge, there was a military port with a large arsenal for ships called "Navalia". Near the Neronian bridge, which was in the place of the current Vittorio Emanuele Bridge, was the Tarentum, a very ancient place of worship. The vast elongated area that developed between these two elements was called "Trigarium" and, probably occupied by uncultivated and sandy areas, horse races were reserved. Following a necessary residential expansion, the fabric in question found its roots in the ancient Roman expansion axes formed in the Claudian-neronian age, coming from the area occupied by the great Roman specialized buildings. These correspond to the current Via di Monserrato, Via dei Banchi Nuovi and via del pellegrino, Via dei Cappellari, Via dei Giubbonari to the portico of Ottavia. It is presumed that until the middle Ages this area housed small houses and, along the Tiber, large water mills for grinding grain. It's only with the urban policy of Pope Nicholas V, all oriented to the movement of the city in the direction of San Pietro, that it was expected a complete restructuring of the city in the desire to enhance the areas attested on the Tiber and that connect the new headquarters of the Curia with the historic city.

The fabric both conserves and hides the tracks of this transformation. The link between the basic edificial frame and the specialized building expresses the continuous mutation of the edifice lastly proposing a variety of results and a heterogeneity of shape. We can proceed then to the reading of the complex fabric looking at an order of diachronic juxtaposition of elementary edificial cells.

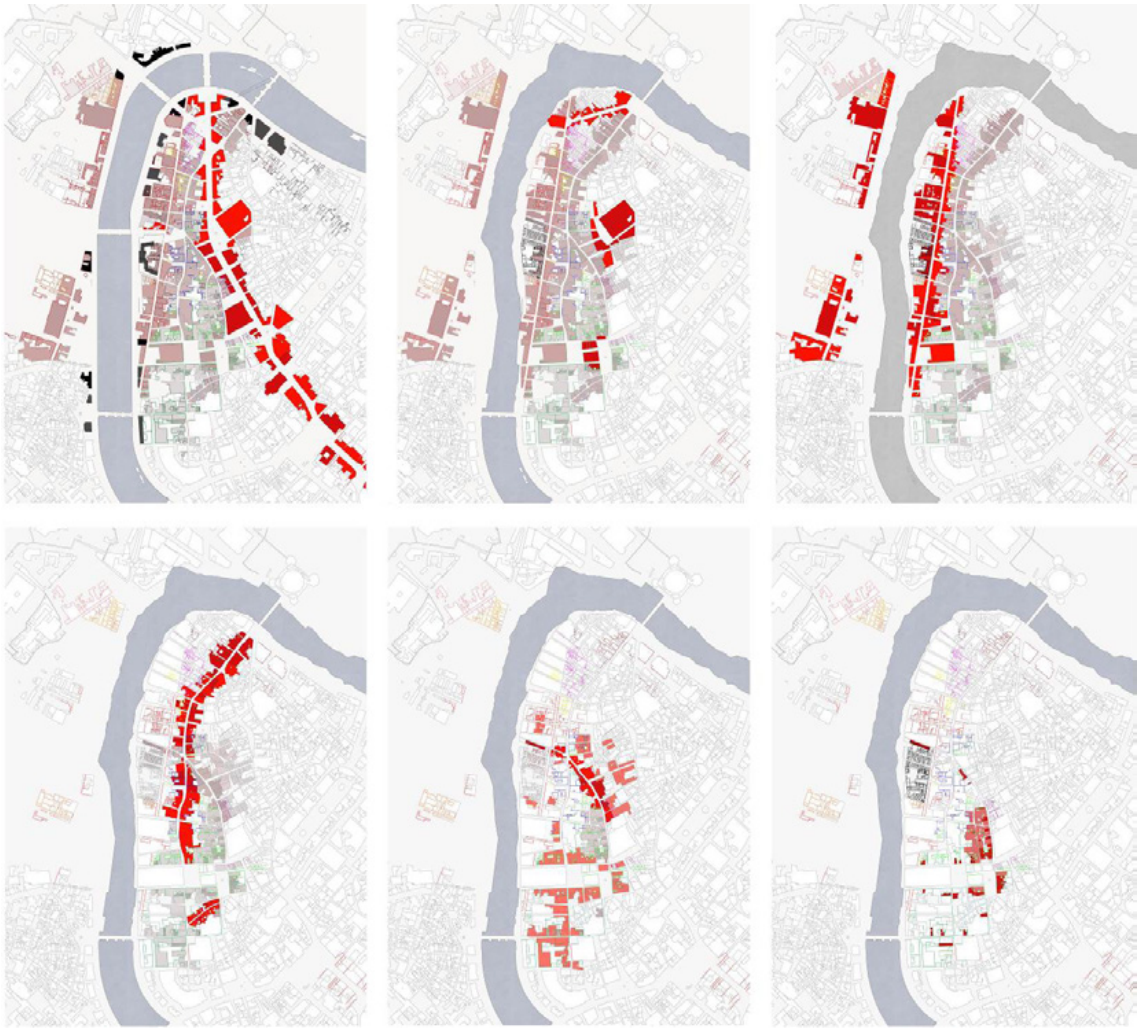
The lots with a larger surface are in-line construction types obtained by re-casting of terraced types, while smaller ones retain their original terraced character, sometimes even increased in depth in the lot. An irregular lot signifies the transformations it has undergone, the shape expresses the history of this minimal portion of urban landscape produced by the need to expand the minimum unit for sub-multiple additions by the distributive character or by recasting several units at the expense of public spaces likes squares and streets.

This continuous and complex mutation is directly and indirectly reflected in the fabric. The introduction of new edificial types and the formation of palazzos represent some significant elements in the construction of the city and are proof of the successive adaptations and the formation of the different relations between the parts and the city

Forming process

Following the extensive study of the urban tissues in the Via Giulia area, the collaborators managed to form a list of criteria for the design process of the intervention to such a school. After closely reading the nodalities, it would be easy to conclude that the Virgilio is on an important urban cross and could form a significant node in the area. Taking this into consideration, the requalification of the school should hold in consideration this potential role and put it into play. In the case of an extension to the designated premises, the design's mission would be to both make up for the old building's deficiencies and to regard the historical tissue with sensibility. This accounts for a design that would respect the main cadastral lines of the contextual surroundings and attempt to mend any urban fracture existing in the area, while creating a new focal point that would help redefine the social aspect of the neighborhood and amplify the urban experience. Special considerations were to note; an educational institute has its own users and audience,

Figure 1. Extraction of the historical phases in Via Giulia



therefore the designer has to always keep in mind the weight of the quest and attempt to architecturally filter and connect the dynamic of the new urban hub in the most efficient way.

Some of the main concerns that would help guide the design's progress and formation would be its existence on the Lungo Tevere facing the Giuseppe Mazzini bridge, the nearby Piazza, the Via Giulia lane with its heritage and history, the existence of an archeological quarter in the available site, the new implementation of an underground parking lot and its access point from the new school and from the outside, the question of style and compatibility, and the missing pieces for a new modern-day functional school.

Following this mission, the masters in restoration's design studio conducted by Professor Paolo Carlotti adopted the concept in order to obtain a wide and more intriguing variety of results, joining renovation with conservation. The resulting data was a group of suggested projects targeting the problematic and contributing into the drafting of an extension building to the main historical one.

A meeting with some municipal members of Rome was conducted, and an extensive discussion was led acquiring the main apprehensions and limitations of such a project and reviewing the historical makeup of the entire area.

Thus, in order to arrive to a satisfactory conclusion to the matter, the students and the collaborators worked on carefully morphologically reading the lots and lines of the area, in order to establish an understanding of the tissue in hand. This required the extraction of the alignments of the existent lots, the reconstruction of a web of primary orthogonal grids

Figure 2. Following the phase study, the authors attempted to reconstruct a basic image of the potential grid that existed initially in Via Giulia

Figure 3. Poles and Nodes: the main monuments and landmarks that Corso Vittorio and Via Giulia connected

and finally the realization of a clearer hypothetical timeline of the historical phases and the restructuration that had occurred to the region. This was done with the employment of the available maps and plans of the roman district. (Figure 1)

Another study included the study of the main axes of the territory and how the main nodes and landmarks helped to shape and define the lines and main streets we have today. For instance, Via Giulia was probably an answer to the inter-river connection between the Principe Amedeo Savoia Aosta bridge and the Sisto bridge, creating therefore a double ligament from both sides of the river, and linking the San Giovanni Battista dei Fiorentini Basilica and its square with the other churches and Palazzos existing on this line, one of which being the catholic church belonging to the Virgilio organism and its adjoined palazzos. (Figure 3)

This understanding allows to conclude the main guidelines for the proposal. The project is ought to: respect the archeological boundaries of the site and plan away from them, creating a primary outline for the building.

The new hub should have in it a new square or node, inviting the spectators and the visitors into the area and creating a link between the Via Giulia line and the river with its bridge.

Traffic has to be taken into consideration, knowing that it could potentially disturb the new establishment of the project. The choice of the manipulation of the vehicle's movement was left to the students to target.

The existence near the river suggested a potential link between the new constructed zone and the natural resource. With such a vast denomination, the spectrum of design ideas for such a pursuit would be wide and diverse.

The existence of an underground parking will further deepen the study structurally and vertically, profiting from the function to serve the school's new extension.

The Via Giulia scene has to be preserved and amplified; this would be done by designing the pavement, elevation, and the facing Piazza. This will suggest a dynamic continuation between the semi-public realm of the internal neighborhoods with the public realm of the Tiber River, introducing the new Piazza as a meeting point and a focal destination.

As to the functional addition and regeneration, an internal work has to be done to better identify the courts and passages and the dynamic of the old building, while studying the requirements needed in a modern school and how to implement these facilities in the expansion. The result would be a wide spectrum of organizational strategies suggesting the modification of the internal old courts, the system of classes, and the distribution of the new services to help revive the student life. Some of these new services would possibly be introduced as a nucleus with multiple audiences, making it accessible to the public on pre-planned times and events.

Along with all these constraints and conditions, a design would also incorporate several styles and approaches to the new building, individualizing the resulting prospects by their structural system, dominance in the general perspective of the district, their cover methods and internal reorganizations, and the refurbishment of the nearby piazza in a way that would serve the main scope of the design.

The outcome would incorporate therefore a group of conceivable urban developments that would delineate a new vitality to the Via Giulia region. Innovations on the level of structure, style, and services will portray a new character to the region and a better educational value to the school.

This analogy described above in a brief documentation, shows the capacity of morphological analysis in the design field. Urban fabric reading, though often conserved to academic

Conclusion

This analogy described above in a brief documentation, shows the capacity of morphological analysis in the design field. Urban fabric reading, though often conserved to academic purposes and to archiving, may and arguably should be an integral part of

the design process; for it gives insight on the specificity of the place and suggests the right way to manipulate it with a non-damaging outcome. As exhibited in the case of the Virgilio School and Via Giulia, a view in retrospect to the different historical phases that defined the urbanism of the zone allowed the clear setting of a morphological understanding of what had formed the current aspect. This not only allowed an image of what the extension would incorporate by function, but also importantly helped the shaping of a new and logical set of rules and criteria to be considered in the possible project; such as main lines and axes, unit locations, general specialized rules and requirements and a group of design preference that would help shape the project in the best way possible.

Therefore, urban morphology can rise from the mere role of academia, and rather be reintroduced as one of the important tools for architectural design.

Subsequently, a school belonging to a historical center is not a school on its own in the middle of nowhere. In order to regenerate and revitalize the school, a double reading of today's schools' requirements along with the morphological study would help best shape the ultimate solution for final execution.

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Possible Instruments for Understanding and Managing Complex Phenomena in the Contemporary City

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Emerging properties are an unavoidable reality when we examine systems composed of a large number of interacting entities that demonstrate complex behaviors. In this paper we will try to illustrate how the architect's work often confronts problems of a complex nature, the management of which is inevitably linked with the property that these systems have to bring out behaviors, organizations and structures that are not the mere sum of the contributions of the single entities of the group. The theory and science of systems can be considered a new scientific paradigm that not only offers tools for reading the reality, but also demonstrates a strong operative component replacing the analytical approach in at least four research fields such as: Cybernetics, where the information exchanged between the system and the environment generates continuous feedback; the Information Theory according to which information and order are uniquely linked in complex systems; Cellular Automata, entities capable of processing information by simulating complex processes; The Game Theory according to which the conflict and the collaboration between rational agents is able to bring out behaviors of higher order and greater complexity. The paper tries to investigate the repercussions that the emergent properties with the related tools of complexity management have on the reading of reality and on architectural and urban design.

Through the simulation of complexity we can investigate not only the problems of morphological nature but social and cultural phenomena can be seen as emerging properties of contemporary urbanity.

Introduction

Emerging properties are an unavoidable reality when we examine systems composed of a large number of interacting entities that demonstrate complex behaviors. In this paper we will try to illustrate how the architect's work often confronts problems of a complex nature, the management of which is inevitably linked with the property that these systems have to bring out behaviors, organizations and structures that are not the mere sum of the contributions of the single entities of the group. The theory and science of systems can be considered a new scientific paradigm that not only offers tools for reading the reality, but also demonstrates a strong operative component replacing the analytical approach in at least four research fields such as: Cybernetics, where the information exchanged between the system and the environment generates continuous feedback; the Information Theory according to which information and order are uniquely linked in complex systems; Cellular Automata, entities capable of processing information by simulating complex processes; The Game Theory according to which the conflict and the collaboration between rational agents is able to bring out behaviors of higher order and greater complexity. The paper tries to investigate the repercussions that the emergent properties with the related tools of complexity management have on the reading of reality and on architectural and urban design. Through the simulation of complexity we can investigate not only the problems of morphological nature but social and cultural phenomena can be seen as emerging properties of contemporary urbanity.

Methodology

The difficulties in relating to complexity have always been a challenge for researchers and the work for the delineation of a methodology of complexity analysis has consolidated over the years not a standard practice but rather common issues. We try to formulate a coherent and solid methodology to study complex problems which very often are chaotic and counter-intuitive.

Given the peculiar nature of the complexity problem, generally the methodology of the approach has a mixed nature between experimental, theoretical and what, called the third scientific methodology, is carried out through computer simulation. Robert Axelrod believes that the simulation (in particular the social one) would be the third scientific approach, different from both the inductive and the deductive approach (Axelrod & Cohen, 2000). The simulation, instead of data taken in the real world, uses a quantity of data deriving from a series of rules that govern the simulation, subsequently analyzed inductively or deductively. The computer simulation thus becomes an instrument (Saggio, 2007) that not only facilitates scientific research but allows it to make conceptual leaps because it is able to open previously impossible research directions.

Agent simulations or Agent-Based Model (ABM) are considered as the family of computer simulations best suited to recreate simplified conditions of complex spatial behavior thanks to a number of their characteristics. This class of abstract mathematical models demonstrates particular affinities with complex systems because both are composed of a large number of entities / agents that are not centrally controlled but act following a limited number of well-defined rules. Both the agents of the simulations and the entities of the real complex systems do not have a global conception of their world but they interact by exchanging information with a limited number of agents / entities close to them. In both cases it can be shown that local interactions are able to bring out global behaviors not previously present neither in the reality of the complex system nor in the simulation of the abstract model.

Forming process

The simulation of emerging processes that shape and govern parts of cities where centralized control is lacking can be made using a series of models that are born as an idealized description of self-organized biological systems. The analogies between the

behavior of complex urban systems, biological systems and simulations allow the use of similar methods of research, transferring the meaning of the results obtained from one field of scientific research to another.

Winy Maas of MVRDV, in his introductory chapter to SPACEFIGHTER, The Evolutionary City Game, defines in a direct and univocal way the type of city that he is facing, the adopted methodology and consequently the tools that can be adapted to the characteristics of development of the city described by him.

The city referred to by Winy Maas is the Evolutive City, a city that is the result of the changes introduced into urban planning and architecture, at the beginning of the twenty-first century, from a process-oriented approach to continuous improvement, optimization and adaptation. According to MVRDV, this city is governed by an immense database activated by software and interactive participation and the hierarchy generated by democracy means that urban planning does not take place only through the tools of professionals but that everyone can become a "citymaker".

The Evolutive City is always changing, considering transformation as one of the few constants of the development of cities, regions or empires. It is therefore in this continuous change that the architect or urban planner find themselves having to interact with economic, demographic or IT flows. These flows are the result of the growth of urbanized areas, which thanks to the help of technology are increasingly able to communicate and exchange information, thus contributing to the emergence of a global line, a complex spatial configuration, in which cities develop.

The method by which, according to Winy Maas, the actors can influence the Evolutive City, is based on a series of assumptions. Competition is one of the factors that most influence the development of cities. By joining the global network, we inevitably have to deal with entities that in a way similar to the Darwinian evolution of the species are in continuous competition and co-evolution. The struggle for the survival of the entity means that it must use all its weapons (internal characteristics) according to appropriate tactics and strategies (processes). In this way the neighborhood, the city or the region can maximize the chances of survival in the global scene. The idea of conflict and competitiveness thus become fundamental for recognizing, understanding and influencing the evolutionary processes of cities. This is not a fact of little importance and the change of perspective clarifies the true nature of evolution, a struggle for survival, where the most inclined to change survives.

In order to make the best use of "armaments" and "survival tactics" a new theory of urbanism is needed, a theory based on change and the ability to adapt to ever-changing conditions of development, real estate policies or the construction industry. The theory of Light Urbanism, according to Winy Maas, should accommodate urban change by transforming it into a productive tool. The Light Urbanism should fill the void created in the urban theory that until the beginning of the new millennium was based on the traditional idea of the public dimension and its declinations.

The need for a re-foundation of urban theory is again reaffirmed by Winy Maas arguing that even some of the most well-known techniques of recent practice such as "mapping" and "diagram" are inadequate to recognize the emergence of unforeseeable phenomena with a logic deterministic, then these tools are obsolete to face the complexity of the processes underway in contemporary cities.

Once certified the impossibility of the current working tools of architects and planners, to be able to interact with the processes of changing currently underway in the global scale, Winy Mass introduces the project "SpaceFighter", a digital platform that bases its operation on an idea in appearance simple, "The Game".

One of the most common examples to describe the mechanisms of game theory is the so-called Prisoner's Dilemma where two accomplices, suspected of committing a crime, are arrested and interrogated separately by the authorities, without the possibility of interacting with each other.

According to Nash, the equilibrium is reached when both players do not cooperate. The two players, collaborating could have a common gain with total value greater than all the possible cases but the risk of the collaboration is not to win anything if the opponent opposes. For this reason, from an economic point of view, where one seeks to

maximize profit by minimizing risk, the most "rational" choice would be to not cooperate.

The question becomes more complex and therefore more interesting when the problem is less abstract. Relationships are rarely unique in reality, indeed, we commonly have the opportunity to deal with the same people in more cases. For this reason repetitive games can be considered more faithful simulations of real behaviors.

When the prisoner's dilemma is iterated, it becomes possible to create strategies, in other words to plan future moves based on the opponent's behavior. Robert Axelrod organized in the 1980s a series of prisoner's dilemma championships where he invited those interested to send him game strategies that were then put to the test by playing. Each pair of strategies was iterated two hundred times to proclaim the winners. At the end of two championships, the winning strategy is proclaimed the TIT FOR TAT, in which we start collaborating and in every game the opponent's previous move is repeated, if the opponent cooperates, TFT cooperates and if the opponent opposes, the same does TFT. The strategy, quite simple, is the one that guarantees the greatest gain against any other solution. Axelrod, after analyzing the results of iterated games, gives a number of conclusions to ensure maximum profit through collaboration in repetitive games: Be good, or collaborate in the first move; Be mutual, that is collaborate with those who collaborated and not collaborated with those who did not cooperate; Forgive, or collaborate with those who did not cooperate when they change position; Be clear, that is, do not hide your strategy so as to facilitate interaction (Axelrod, 1984).

TIT FOR TAT is not the only strategy that guarantees high earnings in the game of the prisoner's dilemma. Chris Adami, for example, uses the principles of evolution to analyze the results of different strategies that are compared, selecting for survival in the next generations only the strategies that prove to gain more than the average. Of particular interest is the "Win-Stay-Lose-Shift" (WSLS) strategy, which makes the same move as long as it gains and changes when it does not earn any more (Adami & Hitze, 2013).

Robert J. Aumann, who in 2005, won with Thomas C. Schelling the Nobel Prize in Economics thanks to his contribution to the better understanding of conflict and collaboration through the analysis of game theory, dedicates his lesson to the reception of the prize precisely to the question of War and Peace. Aumann argues that evolution, whether genetic or memetic, leads to a strategic balance and that therefore behaviors such as altruism, collaboration, trust, revenge or blackmail would emerge thanks to the repetition of games over the centuries. One of his main thesis is that repetition leads to the emergence of collaboration (Aumann, 2005).

Paraphrasing another Nobel Prize winner for economics, Jim Tobin, Aumann says that the economy can be described by one word: incentives. And it is precisely on the incentives that collaborative rather than opposition behaviors emerge, where the regulatory role of authority in the city must be concentrated. The collaboration in this case is exactly an emerging property of the city as a complex system, which can respond in an unpredictable or even counter intuitive way to the inputs of the incentives.

Some incentive effects can be studied in the PD Basic Evolutionary simulation of NetLogo. This simulation manages a system of high complexity since the agents are confronted with the prisoner's dilemma, but at the same time they can also learn from the environment around them, modifying their behavior with respect to the results they and their neighbors have achieved in previous generations. The rules of the game are as follows: 1) Each agent can collaborate (blue) or oppose (red) (green and yellow represent the agents that have changed behavior in the last generation). 2) In every generation, each agent plays a dilemma of the prisoner with his eight neighbors and the gain is the sum of what is won by the collaboration or the opposition to collaborating neighbors. 3) In the next generation, each agent adopts the strategy that made its neighbors earned the most.

The parameter that can control the overall behavior of the system is the relationship between the winning obtained by collaborating and the one that is received when opposing the collaboration.

As can be seen in Image 2, when winnings received by the opposition are 160% higher than the payout for the collaboration, the strategy that the majority of the agents adduced is to always oppose (majority of reds), while for ratios lower than 160% (majority of blue), the collaboration spontaneously emerges in the system. It is precisely the

relationship between the gains of the two behaviors that plays the role of the incentive, replacing authority, and managing a complex, otherwise unpredictable system.

The subsequent simulation in NetLogo introduces another tool for managing complexity in repetitive games of conflict and collaboration. In this case the system evolves follows rules similar to the previous one but each agent can remember a number of previous generations and decides its strategy not only according to current conditions but in accordance with a historical memory of behavior. It can be noticed in this case that the agents that remember at least 50 previous generations, tend to collaborate more Image 3. This system has therefore managed to evolve not only mimicking the behavior of neighbors but "learning" from its past. An even more important phenomenon that the collaboration itself is the fact that the total gain of the system is greater in the cases where collaboration is greater, confirming the intuition that thanks to the collaboration, the community gains more.

During the Tirana Architecture Week 2014, biennial event organized by the POLIS University of Tirana, the opportunity was created to conceive and direct a workshop with students of the fourth year of the Architecture and Urban Design course. The architect Renis Batalli also contributed to the creation of the idea, the organization and management of the workshop. The "Complexity as Self-regulation" workshop did not intend to give answers to all the complex problems related to the design of new pieces of the city but starting from the recognition of space organizations present in the abusive areas, trying to reconstruct the current situation using a cellular automata algorithm, similar to The Game of Life in RhinoScript. The same algorithm was then modified in an intuitive way to understand how small changes in the code, therefore the rules of urban development, could bring out new organizational structures.

The workshop participants first had to recognize the "rules of the game" that most similarly recreated the urban density of a neighborhood in a newly developed area in the North of Tirana. This "genetic material", evolved through the changes in the rules of the game, introduced directly into the code, generated new dynamic structures over time. The students understood deductively that minimal changes could give rise to completely different neighborhoods. The role of the architect therefore resided in recognizing meanings in a system that, without the act of being observed from outside, could seem chaotic.

The results of the workshop can be considered small-scale examples of how the simulation of complex systems is a tool for understanding the reality, which investigates the immanent properties of the system by defining the rules of the simulation. The assessment moment naturally also becomes a moment of proposal as the simulation that was able to recreate real situations, is also able to use the same modified rules to create a project that emerges from the simulation and is recognized by the architect.

Undoubtedly, more complex simulations will be able to more effectively recognize the emerging properties of larger units, thus creating new design tools.

In conclusion, therefore, some complex behaviors that can be noticed in cities, such as conflict or collaboration between individuals, in the absence of a strong supervisory authority can be encouraged bearing in mind that the results will never be deterministic and almost always difficult to predict or even against intuitive. Complex systems are also able to learn from their past on condition that there is a collective memory available. Culture and education can therefore be excellent tools for managing complexity without necessarily needing an authority that guarantees compliance with contracts.

Conclusion

The present work has an anti-dogmatic nature and does not intend to dictate norms of making architecture but intends to indicate new possible directions of research and new questions that will then serve as a basis for future evolutions of the present research. In summary, one of the methods of managing complex systems is the use of the emergent properties of the system itself. The connection between complex problems, complexity management tools and emerging properties of complex systems is a further example of how complexity is able to generate solutions. Order, meaning and organization can emerge thanks to cellular automata and genetic algorithms that by

manipulating information can respond to problems of lack of authority, of contingencies and of dynamic development. Thanks to game theory, collaboration can emerge as a direct response to the conflicts of abusiveness. Fitness and efficiency can become common units of measurement when discussing contingency problems through genetic algorithms, optimization and continuous updating.

The following pairs of keywords can then be understood as notes for future searches.

Complexity and Emergence

The reality we perceive is complex. The difficulties that are found to describe it or to recreate it often lead to simplifying problems and losing the wealth of phenomena that complexity means. Although the definitions of complexity are many and not always exhaustive, some characteristics of complex systems are certain, such as their composition of a high number of agents that interact and change their behavior based on memory or feedback. The most important feature of complex systems remains their ability to bring out behaviors beyond the capabilities of individuals, such as self-regulation, information procession, evolution and learning. Since architecture cannot help but deal with complex problems, given the nature of reality, it can make the behaviors that emerge from complex systems its own tools.

Rules and Order

Over-regulation of a system tends to eliminate accidents, mistakes, emergencies and, consequently, novelty. Complex systems, on the other hand, rely on the application of a limited number of simple rules that can also be performed by very elementary agents. Complexity is generated by the high number of interactions between agents or by the high number of process iterations. Since the events within the system are interconnected in a chaotic way, the complex systems are never random and the information that is transferred between the agents is inversely proportional to the entropy or to the measurement of the uncertainty of the system. Thanks to information exchanges, complex systems are able to self-regulate, creating hierarchical structures without the intervention of higher authorities. The order can therefore be seen as an emerging property of complex systems, intrinsically linked to the ability to process information. Similarly, the architect, always looking for ordering principles, can find in self-regulation of complex systems the same mechanisms by which order emerges in nature.

Fitness and Evolution

The von Neumann proposal for the assembly of the Universal Constructor involves the possibility of recreating complex computer entities that are able to reproduce following a series of instructions. The string of information that contains the instructions of creation can be transmitted to other individuals in the system or to future generations and if we allow the possibility of transmission or decoding errors, chances are created for mutations of future generations and crossover between entities. If it is possible to assess the skills that these entities have to solve problems, or fitness, we have the ability to create a complex system that can reproduce but also to evolve more and more his skills. The possibility of using evolutionary mechanisms, the ability of which to solve complex problems is demonstrated in the science of computers by genetic algorithms, can become a source of new tools for the architect. Through the emergence of the fitness improvement of a structure that responds to changes in environmental conditions, it is shown that the evolutionary processes are by their nature predisposed to handle complexity, giving back not only the instructions to do this (genotype) but also the form which is better suited to the dynamism of the system (phenotype).

Conflict and Collaboration

Self-regulation and evolution are not only morphological properties of a complex system since it can be shown that the behavior of agents can also emerge from continuous interaction. Through game theory we can analyze the behavior of rational agents that compete with each other for access to limited resources. It has been shown that in complex systems, where agents can learn from their competitors or their history, they tend to collaborate more than in unique relationships, and the general fitness of the system tends to grow over time. Therefore, in urban conditions characterized by lack of authority, one of the possibilities to improve the general conditions (fitness) is to encourage the emergence of collaboration through education and the creation over time of continuous exchanges between the inhabitants.

Simulation and Generation

Complex systems, by definition, cannot be analyzed and fully understood through an analytical procedure. Simulation, as a third scientific approach that uses large amounts of data generated by the rules that govern the same simulation, becomes a tool for analyzing complexity through the recreation of the conditions that emerge. Even more important is the fact that, at the same time, simulation also becomes a generative tool since the IT environment simulates complexity through its generation. The properties of complex systems can therefore be used as a tool for architectural design through the emergence of behavior, form and organization.

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Contemporary Public Spaces, Mobility and Porosity: shaping equal cities

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Most contemporary cities have their 'best' and their 'worst' regions in terms of functional territories (served by all facilites, amenities, and high quality public spaces) and of marketable territories (with varying real state prices); they also have different means of public transport that link the best and the worst regions in the city. As such, the territorial, daily mobility of the poorer, who generally live in the worst regions, is fundamental to the ideal of sharing the city on a more equal basis. But mobility is not enough. The porosity of the city, i.e. the proportion and distribution of quality open spaces available and accessible to the varied flows of people, activities and events of different origins (Secchi, 2014), and as such its urban form, will also determine how the poor's desires and projects can be fulfilled in the city.

Their possibilites of travelling within the city, of being welcome everywhere and their need to be in the wealthier parts of the city will shape not only their personal success but the city morphology – be it to increase or diminish its porosity.

This essay tries to picture the main aspects involved in building a more porous and mobile city for all, and wonders what that would mean to the evolving mechanisms and the more or less hierarchical structures of the urban form.

Introduction

In our last book (Capanema Alvares and Barbosa, 2018), we sought to understand how the everyday politics of difference are shaped by institutional policies and how they shape concrete public spaces. There, and here, we depart from Santos' proposition (1996) to consider space as a whole, as a social instance, at the same level of economic, cultural, ideological and political instances; as such, social dialectic is not only established in space, but is undertaken with space. This social dialectic that individuals and collectivities establish with space is phenomenological in nature, exposing spatial geographies (Soja, 2010) of perceptions; perceptions that permeate the individuals' and the collectivities' cultural universes, their psychological and historical conditions, and the image construction of place imposed on them. Further, we assume that these constructions of place dialectically interact with the morphological space, living with and through them, and then somehow reconceptualizing it. Moreover, we try to equate these concepts with Lefebvre's semiotic-bound space triad and his more phenomenological spaces. Still in agreement with Lefebvre (1968), we argue that these dialectical and relational processes open the possibilities of change towards a radically different urban environment through the collective participation in and appropriation of the social production of space.

As Purcell summarized (2002):

> Political economists in geography […] have argued that the post-1970 round of global restructuring has involved specific changes in the way cities are governed (Goodwin and Painter, 1996; Jones, 1999). It suggests that governance is being reconfigured in three main ways: (1) it is being rescaled, (2) policy is being reoriented away from redistribution and toward competition, and (3) many state functions are being transferred to nonstate and quasi-state bodies. This last change is referred to as a shift from government to governance. The three changes have provoked concern that urban inhabitants are becoming increasingly disenfranchised, specifically with respect to the control they exert over the decisions that shape the geography of the city. (p. 100).

Despite the newly spread ideologies arguing that the informational era cancels distances, transforming the world into a "global village", urban public spaces will always constitute a concrete wholeness in which society develops itself; this development is indeed a socio-spatial process: there is no history or technique detached from concrete spaces. The public life sphere is realized in concrete spaces as it has been demonstrated worldwide by recent popular movements (such as the "Arab Spring", the numerous "Occupy" protests and the most recent Latin American outbursts).

A critical perspective also requires contextualization of UPS policies and practices under the capital and labor structure; rather, and using the ideas of Lefebvre, Harvey and others, the struggle being staged in urban space is ultimately between capital in its various forms and labor. Large contractors, the financing system, multinational corporations, real estate speculators and a whole myriad of capitalist actors have and exert direct and indirect interests in the city and, therefore, in urban public spaces. At the other side is the work force, which has in space not only its production means, but also its reproduction means, depending on itself to lead many of their activities and to survive. The third major component of the equation is the State, which could theoretically support any side, but has consistently sided with capital.

The distribution of services, facilities, amenities and open public spaces, which has been a social construction historically unequal and responsive to the capital accumulation needs, as pointed by a number of authors, has also worsened as a result; the glocalization phenomenon, as Swyngedouw (1997) calls it, has deepened competition and concentration at the local level. Hence, the mobility issue in its broader meaning – which encompasses porosity, i.e. the way people are welcome throughout the city - becomes more and more important: It determines not only who gets what, how often and at what cost, but also how citadins

perceive, conceive and live the city, in Lefebvre's terms, and how people ontologically relate to the city and the Other.

The right to the city, which is "a cry and a demand [...] for a transformed and renewed right to urban life" (Lefebvre 1996, p. 158), concerns, most of all, participation and appropriation: participation of all inhabitants of the city regardless of their citizenship status in all decision making processes about the territory, including corporate decisions that will result in structural changes in the city; and appropriation of public spaces, services, facilities, and amenities on an equal basis. In this sense, appropriation becomes the struggle for spatial justice, so that collective and public policies consider the inequality of risks and opportunities historically, institutionally, and continually established in the urban landscape (Kobayashi and Ray apud Cresswell, 2006, p. 165) and are positively engaged in a radical change that empowers the disenfranchised.

If the city formal structures, fixes, and fluxes are at the basis of how the citadin perceives, conceives and lives the environment, its dialectical counterpoint is also true: the citadins' social practices (informed by their spatial representations and their spaces of representation) will shape the mechanisms and structures of the urban form. While corporations CEOs' decisions may affect the city's morphology to big extents and extensions, the common urban inhabitant and the marginal collectives may affect their quotidian spaces on a daily basis, in more subtle, alternative and intermittent ways. Through momentary or lasting appropriations of public spaces they imprint their marks on the concrete city. To uncover these influences in public spaces is the first step towards recognition and valorization of their experiences and their demands for a city of rights and of "the right to produce urban space that meets the needs of inhabitants" (Purcell, 2002, p.103). A city where all citadins can come and go safely, and can feel welcome to pursue their projects, wishes and desires in the whole territory: a more mobile and porous city for all, socially constructed by all of its dwellers. In the search to establish the common, marginal, citizen's influence in the city's mechanisms and structures, this study proposes possible approaches and methodologies, hoping that the readers' criticisms and advices will help further the research project.

Our contemporary cities and the distribution of services, facilities, amenities and open public spaces

For Bourdieu "it is in the relationship between the distribution of agents and the distribution of goods in the space that one defines the value of the different regions of the reified social space" (Bourdieu, 1997, p.161). Here he is concerned with the unequal distribution of symbolic and cultural goods arranged in the social space, as in a force field or on a chessboard, in which the agents, disposed by their quantity of capital, move in a certain way according to the movements of his/her antagonistic agents. The distribution of capital and the organization of agents in the social space allows the spatial analogy between the dominated and the dominant, their proximity and distances that reflect social structures. The logic of the field of forces can produce in the dominated agents an effect of position homology - creating complicities - as well as they can constitute identity processes that establish the possibility of conflicts and ruptures, deconstructing and recreating the disposition of social space (Bourdieu, 1996). While Bourdieu focuses on the forms of symbolic and cultural capital that influence the distribution of services, amenities, and open public spaces, Soja discusses spatial capital, as product and producer of unequal forms of economic, social, and cultural capital (2014).

As shown in Tângari (2018), open spaces, while having an important role in shaping the urban morphology, the urban fabric layout and in the definition of centralities, are determined by the contradictions of a process of occupation that expresses the high concentration of income and resources in some sectors and areas, and the omission of public governance in others. These contradictions result in an imbalance in the supply, accessibility and appropriation of open spaces by the population, directly affecting the quality of the physical environment and the conditions of sociability that can occur in open spaces, and more specifically in those belonging to the public sphere. She sees the political-administrative dimension as a dominant force in the production of public spaces, furthering class struggles

when imposing the capitalist logic based on vehicle circulation, to the detriment of "sociability and encounters". In a quali-quantitative approach and taking historical, social, and political aspects into consideration, Tângari demonstrates how the poorer urban areas are historically bound to lack quality public spaces that could enhance their inhabitants' citizenship, demonstrating in Rio de Janeiro what Fernández-Álvarez (2017) found in Mexico City regarding green public spaces. That is how, echoing our previous authors, the common citizen is deprived of an urban life. Turner and Wu (2002) argue, moreover, that a growing body of literature places "the sources of environmental injustice in a complex process through which structural factors such as capitalism, policies and regulations, and social stratification" increasingly interact with private and governmental decisions that shape public policies throughout the world (Turner and Wu, 2002, p. 18).

The right to the city, a spatial justice issue (and/or the other way around)

The idea of 'rights' is in itself abstract: They can be placed in the Constitutions as citizen's rights (also an abstract concept constructed on the idea of the non-citizen, one that does not belong to the state or is a slave and therefore has no rights in deed) or in international treaties - such as the UN Declaration on Human Rights (1948). But in being universal and abstract, 'rights' ignore the specificities and inequalities between people and places. The right to the city, on the other hand, materializes itself through the concrete possibilities and opportunities that its inhabitants, citizens or not of the country, immigrants or natural to the city, have at their disposal in that territory (Cresswell, 2006). The right to the city refers to space justice, to the struggle for a fairer city space, so that public and collective policies consider the inequality of risks and opportunities established historically, institutionally and continuously in the urban landscape (Kobayashi and Ray, 2000 apud Cresswell, 2006). Thus, the right to the city necessarily considers the issues concerning class, gender and ethnicity because the right of the black female from some ghetto or slum to decent housing is different from the right of the successful WASP businessman to the gated suburban condominium; they are different rights because they demand different spaces for their realization. And they demand different efforts.

Marx already said that human rights are for individuals rather than groups, communities or species. Along these lines, Henri Lefebvre (1968) defends the right to the city as a collective right to the urban space including the marginalized groups living in the outlying districts of the city. When Lefebvre wrote his seminal "The Right to the City" he shed light on the inequality between the spaces founded by capital and on the collective power to change the city and change ourselves.

If the Right to the city is collective and territorialized, spatial justice considers the risks and the spatial advantages of the unequal city which are continuously reinforced by the differentiation of services and mobility in the residential areas. Still, in the Lefebvrian sense, the right to the city is the very struggle of territorially oppressed groups to free themselves and build another territory of possibilities, starting from a new logic in the distribution of investments in housing, services and mobility.

Drawing primarily on Lefebvre's works, Purcell (2002) argues that Lefebvre's right to the city "stresses the need to restructure the power relations that underlie the production of urban space, fundamentally shifting control away from capital and the state and toward urban inhabitants" - all of its inhabitants, regardless of their status in formal states, participating in any social processes that produce urban space and in which the liberal state has a saying (p. 102).

> The right to participation rejects the Westphalian notion that all political loyalties must be hierarchically subordinate to one's nationstate membership (Hettne, 2000; Krasner, 2000). It proposes a political identity (inhabitance) that is both independent of and prior to nationality with respect to the decisions that produce urban space. (Purcell, 2002, p. 103)

While in Lefebvre's geography of socially structured spaces, the first aspect of the right to the city concerns direct participation in planning decisions that accrue on the city space,

"the second is the right to appropriation, […] including the right to physically access, occupy, and use urban spaces". Immigrants and 'marginal' populations share with the elites the right to privileged city centers, "instead of being dispersed and stuck into ghettos (translated from Kofman and Lebas, 1996 apud Purcell, 2002, p. 102).

Combining the arguments made by Young and Purcell, Soja (2010) argues for the expansion of Lefebvre's and Harvey's focus on class struggle to consider the "multifaceted and multiscalar demands for justice in the contemporary world" (p. 109). The author also recalls that Mitchell stresses three basic aspects of the right to the city: Free speech, securing a home, and the use of public space; this last aspect being of our direct concern.

Mobility and porosity: the form and the fluxes shaping social relations

In Cresswell (2006), the difference between mobility and movement is social meaning: movement describes displacement between locations before the type, strategies, and social implications of that movement are considered, whereas mobility has different meanings: on the one hand, it used to mean (and still do) deviance, threaten, and resistance and is more currently related to progress, freedom, opportunity, and modernity:

> Mobility as a socially produced notion is understood through three relational moments. First, when talking of human mobility, we are talking about mobility as a brute fact—something that is potentially observable, a thing in the world, an empirical reality. […] Second, there are ideas about mobility that are conveyed through a diverse array of representational strategies, […] through the production of meanings that are frequently ideological. [...] Third, mobility is practiced, it is experienced, it is embodied (Cresswell, 2006, p. 3).

David Delaney has written that "human mobility implicates both physical bodies moving through material landscapes and categorical figures moving through representational spaces." (Delaney apud Cresswell 2006, p.15)

Mobility, as a form of communication and an intrinsic part of the production and reproduction system that city dwellers are dependent of, is first of all inscribed in Lefebvre's social practices. Since these social practices reside in the built environment, mobility also structures to a good extent the representations of space: the transportation axes structure not only the city's morphology but also people's fluxes and access possibilities (porosity), therefore shaping signs and mental images. Finally, the spaces of representation relate to mobility to the extent that the imaginary of the city revolves a lot around its axes and the open spaces connected to them, and around its flows and its speed, as we can grasp and recall from Benjamin's flanneur and Cartier-Bresson's city photographs, from The Beatles' Abbey Road and Penny Lane, and from the hectic streets of Los Angeles in Ridley Scott's Blade Runner, to cite a few.

Thus mobility, and the absence of it, is an important part of people's imagination and becomes more than cognitive coordinates; it becomes action significants in the real world and inform the common citizen as well as decision-makers when they shape, in different ways, our cities. Mobility and immobility "escape the bonds of individual dreams and aspirations and become social. They become political" (Cresswell, 2006, p.21). "Justice and injustice may be concretely realized - in the flesh" through permission, coertion or prohibition (Delaney apud Crosswell, 2006, p. 15).

Summarizing, Cresswell (2006) "equates mobility through three dimensions: The observable facts (and movements), the representations (mobility as an idea and an ideology), and the experience (mobility as a way of being-in-the-world)" (Kaufmann, 2014, p. 58). Bassand and Bruhlardt (1980), on the other hand, "define mobility as the set of movements that brings a change in the state of the actor or of the system under consideration" (Kaufmann, 2014, p. 59). This definition, according to Kaufmann, would restitute the richness of the mobility concept as it brings both spatial and social qualities to it. In Kaufmann's conceptualization, mobility can be geographic, daily or quotidian, residential, pertaining to migration fluxes, or touristic. It is "a whole social phenomenon, […] interdisciplinary, [with] two levels of analysis, the micro and the macro, […] which takes into account flows, the determinants of these

flows and their consequences in their context " (p.59). In fact, he asks:

> How can we describe and understand the contemporary world, of which mobility is a whole social phenomenon (i. e. a phenomenon through which we can basically read societies' foundations) without using the concepts, methods, and methodologies that allow us to also equate its contours and issues? (Kaufmann, 2014, p. 57)

Still dwelling on Kaufmann (2014), we take mobility to be the encounter of motility, conectivity and reversibility, where motility would be "the set of characteristics specific to an actor that renders him or her mobile [and] therefore refers to the social conditions of access, [...] to knowledge and skills, [...] and to mobility projects". In other words, "the manner in which a person or group appropriates the field of the possible in terms of travels and makes use of it; it highlights therefore the intentionality and the self-determined projects" (pp. 61-62). Conectivity "is spatially constituted in the near and the distant, or more precisely by the place of residence of those who use technologies and information and by the places that are made closer through the speed of transportation. It differs according to one's relationships to space" (p.82),

> whereas reversibility "equally concerns the travel times themselves, which are more and more used as whole social times in which multiple activities of leisure and work are undertaken. It also differs according to one's relationships to space. (p.84)

Secchi conceptualizes porosity first according to the proportion and distribution of open spaces environmentally qualified available and accessible in the city (including by public transportation) to the varied flows of people, activities and events of different origins. Secondly, he sees porosity as the urban territories' potential of welcoming the actors' projects, i.e., the hospitality they encounter in space (Secchi, 2013), signaling that the amount and physical accessibility of open spaces ('the brute fact,'in Cresswell words) are not enough; the concept also amasses a phenomenological aspect (Cresswell moments of representation and experience). According to Kaufmann (2014), "recognizing that the diversity of urban forms and their aesthetics, their environment, the way in which they are inhabited, their prices, etc., define the welcoming potential of a territory is an evidence" (p. 86).

While porosity is a quality of the territory, motility is a quality of the actor, the two of them together and inseparably carrying the city dwellers' possibilities concerning their projects in the city territory. Socio-geographical inequity, which brings the injustices highlighted by Delaney (1998), happens in situations of low motility and low porosity. Connectivity and reversibility, while part of the equation, can also be determined by technological, de-territorialized devices.

Social relations shaping city mechanisms and the structures of urban form

That the way people live spaces, as a dialectical result of their perceptions and cognitions, is based on the "brute facts" of our socially constructed urban forms is well enough established in the literature as we have seen in the previous section. What we seek to research, comprehend, document, and may be present some evidence is how daily social relations shape the city, realizing Santos' dialectic society-space. A space that is always to be shaped. The study of Bourdieu's habitus can give us some hints in this direction.

If the habitus is a structured structure, a product of the division in social classes, it also is a structuring structure, organizing practices and the perception of practices (Serpa, 2013). In building his field concept, Bourdieu proposes the habitus as a "system of the social order constitutive differences" (Bourdieu 1987) in which the ownership of financial and cultural capital will dictate structural hierarchies of actions and symbolisms; in this case, objective possibilities – those pertaining to Lefebvre's spatial practices - conform imaginaries and subjective expectations – Lefebvre's representations, the latter conditioned by the subject's perceptions of his/her own social position. According to Bourdieu (2001), personal identity and social position identification would come from each individual's complex and multiple

representations/imaginaries of reality, given his/her position in the urban habitus, which is made of the following symbolic power criteria: 1) hierarchies, authorities and relative positions of the subject; 2) material properties and capital; 3) prestige, reputation and fame; 4) ethnic and religious affiliation, dwelling location; 6) principles of social division; 7) present and future collectivities. Serpa (2013) interprets that each position/condition is defined by its intrinsic properties, but also by its relational properties and a system of differences, of differential positions, for all of what it is not, everything that distinguishes it and that opposes it to Other positions/conditions.

Bourdieu also understands habitus as a result of class trajectories, as he makes a clear distinction between middle classes' habitus - based on freedom of consumption - and working classes' habitus - based on consumption needs -. Again resorting to Serpa (2013),

> the true generating principle of differences is in the consumption realm, is the opposition between luxurious tastes […] and necessity tastes. The first ones pertain to individuals that are products of existing material conditions defined by their distance to necessity, by freedom, by the ensuring comfort found in the possession of some capital; the second ones express the necessities of which the individuals are a product. (Serpa, 2013, p. 176).

When Bourdieu establishes a contrast between middle classes' and working classes' habitus, he also shows that capital forges a system of perceived differences dependent on the habitus and the objective material conditions (Bourdieu, 1979 apud Serpa, 2013).

If the production of culture is submitted to power expressions and maintenance, its results are necessarily the creation of dominant and sub-dominant (or alternative) cultures. Dominant cultures are akin to the middle classes' necessities free tastes and sub-dominant cultures are marked by necessity. According to Cosgrove (1998, apud Serpa 2013) sub-dominant cultures may be classified as residual (leftovers from the past), emergent (anticipating the future) or excluded (that are active or passively suppressed), all of which will find some representation in space, concrete or imaginary. Finally, "if the spaces of representation contain the spaces perceived and lived by different groups and social classes, they […] also contain and express [their] struggles and conflicts […] over the control of the spaces conception strategies" (Serpa, 2013, p. 176). According to Cresswell (2006), the tactics of the 'weak' take form in the consumption realm, by never 'producing' spaces but through the use and manipulation of spaces 'produced' by others. In that aspect, Tschumi emphasizes the importance of bodies that unrestrainedly move in space:

> 'Movement [is] the inevitable intrusion of bodies into the controlled order of architecture.' While buildings, at least in their orthodox guise, present a 'precisely ordered geometry', moving bodies 'carve unexpected spaces through their fluid or erratic motions'. (Tschumi, 1994, apud Cresswell 2006, p. 52).

Here, again, mobility appears as resistance to order, as a threat to designed urban forms.

Revisiting once again Lefebvre's concepts, and oversimplifying them for this particular discussion purposes, we can say he proposes two sets of dialectical triads: the first one, closer to semiotics and concerning the space, brings a) spatial practices (the material aspect of social relations and activities), b) representations of spaces (definitions, descriptions and theories), and c) spaces of representations (symbolic signs, pertaining to the complex production of space), altogether describing how society and spaces relate. The second one, more phenomenological and concerning both individual and social processes, considers the perceived spaces (perceived through vision, hearing, etc.: an integral part of the quotidian spatial practices), the conceived spaces (a priori thought of/planned), and the lived spaces (the space actually experienced by society, considering both the perceived and the conceived spaces, but never exhausting itself in their encounter) (Schmid, 2012).

Movement, as put by Tschumi (1994), is, at first, a spatial practice of the body in its perceived space; taking from Serpa, however, bodies in movement might as well respond to individuals' lived spaces, taking their spaces of representation to the struggle over the spaces conceptions themselves, or to the conflict over the representations of spaces. In so

doing, bodies would be pushing their material conditions to the point of redefining Bourdieu's habitus. Carlos (2018) and Barbosa & Damasceno (2018) have recently demonstrated how marginalized youth and otherwise marginalized groups consciously use their bodies to challenge the conceived spaces and the representations of spaces. As Serpa reminds us, the spaces of representation are not static; thus mobility, through the body and through transportation fluxes, can "contrast, juxtapose [and/or] imbricate them in a force field, establishing a tensional relation" (p. 178) between perceived, conceived and lived spaces, towards more porous spaces.

The collective nature of rights and struggles in Lefebvre

> The right to the city is designed to further the interests 'of the whole society and firstly of all those who inhabit' in the city (Lefebvre, 1996, p. 158).

The tension between conceived and perceived spaces and between spatial practices and representations of space are of a political nature; both are embedded in the tension between the horizontality of the common citadin or groups quotidian practices and the more vertical production of symbols and planned spaces. Their third parties, the lived spaces and the spaces of representation are, again, always in construction. Lefebvre sees "urban space as both a political product and a possible instrument of change [...] by way of a collective reappropriation of the city" (Busquet, 2013, p. 2) We now turn to the 'collective instrument' argument.

Space has been since pre-modern times a political issue in the sense that it is the medium, the instrument and the objective of struggles and conflicts as one can see, for example, in Locke's defense of private property and of exclusionary policies. In Busquet's (2013) reading of Lefebvre, the modern city witnessed its spaces being less and less considered by their use value (where 'value' supposedly meets social needs) and increasingly subject to their exchange value. As Economics teach us, there must be some force introducing a surplus between what space values for the urban society's realization and what it values for the market. This force, in Lefebvre, comes from the planning and decision-making structures: they create dominant spaces (the vertically imposed representations of space) and let the dominated spaces be (the perceived, the representational, and the social practices spaces). Reasoning on these oppressive mechanisms, the philosopher calls for action that will turn things around:

> Realization of the urban society calls for planning directed towards social needs. [...] It requires a knowledge of the city (relationships and correlations in urban life) [and] the social and political strength to implement these means (which are but means). (Lefebvre 1974 *apud* Busquet 2013, p. 9).

According to Busquet (2013), this political strength is in the working class. We add that the knowledge he refers to is also a 'socially practical' knowledge, a citadins' 'perceived' knowledge, much along Dewey's and Freire's proposals. In so arguing, Lefebvre bridges his utopia to a revolutionary practice, calling inhabitants "to materialize the 'possibles' the philosopher believed he had discovered in society's evolution and in space". The end of the capitalist mode of production and the appropriation of spaces for new social relations are collective tasks for the collective good.

Towards a more porous and mobile city for all

Assuming motility consists of factors relating the conditions in which it is possible to use what the city offers in the broad sense to the skills required for the use of this offer and to the use of the offer to carry out one's projects (Kaufmann, 2014, p. 65), Kaufmann proposes the evaluation of the city's functional and morphological centralities, given by its functional territories (which can be measured and mapped through the availability of light, gas, water services, transportation etc.) and by its market territories (which can be measured and mapped considering housing units at their marketable prices) against the inhabitants'

way of life, given by his/her territories of sociability (which can be measured and mapped through interviews with the actors about their places for developing social relations and leisure), and the inhabitants' territories of familiarity (which can be measured and mapped through interviews with the actors about their daily chores territories) .

Once the best served areas, where housing prices are highest, are recognized and one group of actors is selected, it becomes possible to check on the juxtaposition and/or the distance-time between the city's morphologically central areas and the group's way of life territories (of their spatial practices). Furthermore, it becomes possible to map open spaces, public spaces, cultural and educational venues and the like to qualitatively observe how porous these spaces are to the study group and how welcome to develop its projects the group feels. It is also important to consider (and register whenever possible) that the group projects depend on its habitus, on its spatial practices and on its spaces of representation and that the welcoming potential of places is highly determined by the hegemonic and vertical representations of space. The distance-time between the two territories together with the welcoming potential of the morphologically central areas will thus determine that group's motility. Again, social inequality is established where low motility and low porosity are combined.

The extent to which the group influences the city morphology and its spaces of representation, both permanently and ephemerally, seems intuitively close to its cultural appropriation of such spaces. Serpa reminds us that the relationship between culture and power is evident in the actors' tactics that produce subdominant or alternative cultures in face of the dominant and erudite classes' hegemonic strategies of cultural production (Serpa, 2013). The concrete and spatial manifestations of these tactics - as "actions that transform and subvert the hegemonic strategies of representation" (Serpa, 2013, p. 145) - may be observed and registered. Finally, according to Purcell, in Lefebvre the right to the city dwells not only in the territory and in the conceptions of space but also in the right of inhabitants "to make known their ideas on the space and time of their activities in the urban area". (Purcell, 2002, p. 102) The right to a discourse on their spatial practices and on their spaces of representations enlarges the porosity concept, as it certainly seems to complement it concerning the citadin's visibility and recognition. Recording group oral, written, ephemeral and artistic manifestations is, therefore, called for in order to establish how the city is porous and mobile, and thus promotes its inhabitants rights.

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Nuno Portas and the research on urban morphology at the Portuguese National Laboratory for Civil Engineering: Retrieving a possible glossary of urban form

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The integration of Nuno Portas (born 1934) as a researcher of the Portuguese National Laboratory for Civil Engineering (LNEC), during the early 1960s, marked a turning point within the study of urban form in Portugal. Foreseeing the advantages on making use of works on the perceptions and uses of space, Portas promoted, for more than a decade, studies regarding territory and urban morphology in the first Portuguese Public Research Center dedicated to Architecture, the Construction and Housing Division (1962-1969), later renamed Architecture Division (1969-1979), were he directed a research team.

The research lines developed at LNEC have been, since its foundation, strategically defined/articulated to the Portuguese State. The contact with international renowned research centers promoted the study on 'Housing Studies' and 'Urban System Analysis'. The work conducted by Portas at LNEC was not yet subject of a detailed examination, thus, through an ongoing investigation based on the analysis of LNEC's Reports, this presentation aims to identify the terms related to 'Urban Form', which could contribute to build a 'Glossary of Urban Form', as foreseen in Portas Urban Morphological research period at LNEC. Furthermore, it is expected that these terminologies might complement or be compared to those identified by Peter Larkham and Andrew Jones, in the late 1980s, which were published in the ISUF webpage, and as a Research Monograph by the Historical Geography Research Group of the Institute of British Geographers, in order to ease the study of urban form among different disciplinary/linguistic readers, as already requested by Marat-Mendes (2011).

Introduction

Established to "undertake, promote and coordinate the necessary investigations and experimental studies for the achievements and progress of civil engineering" (Decree Law 43.825, 27/07/1961), the research fields of action of the Portuguese National Laboratory for Civil Engineering (*Laboratório Nacional de Engenharia Civil*, LNEC), were redefined in the early 1960s. Until that time, LNEC had the responsibility to provide the needed technical support for the construction of public infrastructures to be developed in continental Portugal and its Colonies. The introduction of studies related to 'Housing Studies' and 'Urban System Analysis' aimed to respond for a housing shortage, which resulted from a demographic and migratory specific context, together with the need to rehousing precarious and degraded buildings, particularly in the cities of Lisbon and Porto. Therefore, scientific research in 'Architecture and Urbanism' was introduced at LNEC, in 1961, at the Construction and Housing Division (CHD) of the Buildings and Bridges Department. The studies related to 'Construction' focused mainly on the approval of new construction materials and construction processes; and those related to 'Housing' aimed to support the inevitable transformations of the cities caused by the population growth.

It was precisely at CHD that the architect Nuno Portas (born 1934) was integrated as a researcher in 1962. Invited by the engineer Ruy José Gomes (born 1985), Nuno Portas foresaw the opportunity to organize a research team to develop fieldwork of his interest, namely the study of 'Housing' and the 'City' (Carvalho, 2012). In the beginning, the research was conducted similarly to what had been done previously in Italy, in particular with the surveys carried out by INA-CASA (*Istituto Nazionale delle Assicurazioni*, 1955-1958) conducted by the sociologist Salvatore Alberti. However, in Portugal, there was a lack of research in 'Architecture and Urbanism'. In order to overcome such context, Nuno Portas followed the lines of research and research methodologies, which were being conducted in other recognized European centers. Thus, for the first period of work of Nuno Portas at LNEC (1962-1974), a number of research trips were organized. These travels were done at the same time that Portas collaborated with the atelier of Nuno Teotónio Pereira (1922-2016), as well as directed the magazine *Arquitectura* (1957-1974). Among these study trips, one to Italy (1958) should be highlighted, as it aimed to study the neighbourhoods experienced by the INA-Casa program. The participation of Nuno Portas in the International Union of Architects Congresses was also fruitful, specifically for the identification of the themes and methodologies which would be developed at CHD and at the Architecture Division (AD), the subsequent organic unit, established on November 24, 1969 and headed by Nuno Portas until 1974.

Nuno Portas took advantage of his travels and personal participation to the 8th UIA Congress (Paris, 1965) to continue his program of contacts with organisms and personalities interested in studies related to those that were being developed at CHD (Portas, 1965). The report from this trip, published by LNEC in 1965, summarizes the contacts established by Nuno Portas with researchers from other centers and the following centers: i) *Centre d'Études des Groupes Sociaiux* (CEGS) - Paul-Henry Chombart de Lauwe (1913-1998), Claude Cornuau (born 1948) and Maurice Imbert (born 1930); ii) *Centre Scientifique et Technique Du Bâtiment* (CSTB) - Claude Lamure and Gérard Blachère (born 1914); iii) *Research Institute of Construction and Architecture* (VUVA) - Hanna Staskova; iv) *Building Research Station* (BRS) - George Anthony Atkinson (born 1946). By the sharing of research points of view with these researchers, Nuno Portas concluded that the program of studies established by LNEC for CHD could be considered pertinent, namely by "following the double path: inquiry of human needs and preparation of methods and instruments to integrate the growing information available in a more objective project design process" (Portas, 1965, 9). Thus, between 1962 and 1974, CHD and AD researchers were responsible for more than one hundred publications, which included Reports, Technical information and Memories. These, covered in particularly the following thematics: a) functional and constructive types of dwellings; b) family housing needs; c) dimensioning of the dwelling and its divisions; d) social housing; e) technical reports and approval of building construction materials; and f) programming and rationalization of housing projects.

The work conducted by Nuno Portas at LNEC was not yet subject of a detailed examination.

Thus, through the results of an ongoing postdoctoral research (based on the analysis of the LNEC's Reports of the 'Architecture and Urbanism' divisions) and the inputs of an ongoing research project 'SPLACH – Spatial Planning for Change' (which aims to identify possible lessons to promote sustainable transition into contemporary urban planning) this paper aims to identify some 'terms' related to 'Urban Form' and its 'definitions' as identified in LNEC's Reports (1962-1974). These 'terms' and 'definitions', could contribute to build a 'Glossary of Urban Form', as foreseen in Nuno Portas Urban Morphological research period at LNEC and therefore inform contemporary Urban Planning to promote sustainable transitions within urban systems.

Methodology

Putting aside the publications related to 'technical advice and approval of construction materials' and 'programming and rationalization of housing projects', as these are related to 'Construction', for this paper and following the ongoing research projects, the publications concerning to the study of the 'Territory' and 'Urban Morphology' were carefully analyzed. In particular the publications: 1) Pilot survey on family needs in housing (Portas, Gomes, 1963; Portas, Pereira, 1967); Study of the functions and requirements of housing areas (Portas, Gomes, 1964; Portas, 1969); 3) Rationalization of housing solutions (Costa, Portas, 1966); 4) Urban housing survey (Pereira, Portas, 1967; Pereira, Portas, 1969; Pereira, Gago, 1972; Pereira, Gago, 1974); 5) Rationalization of dwellings organization solutions (Cabral, 1968); 6) Organization and quality of urban space (Pereira, 1970; Pereira, 1971a; Pereira, 1971b; Pereira, Monteiro, 1971; Pereira, 1973); 7) Types of buildings: Progressive Housing (Dias, Portas, 1971); 8) Grouping of spaces from adjacency graphs (Pereira, Monteiro e Portas, 1972); 9) The use of space in housing (Pereira, Gago, 1974a); and 10) Implementation of an urban model for the Lisbon Metropolitan Area (Portas, 1974). From this analysis it was found that CHD and AD researchers used a variety of 'terms' and 'definitions' related to 'Territory' and 'Urban Morphology'. Although most of these researchers were trained in architecture, many of the works developed in CHD and AD were also carried out with the support of sociologists and engineers. Thus, easily, the same 'term' may offer different 'definitions', depending on the researcher's training and/or the context. This diversity is one of the characteristics of the study of Urban Morphology, however, may also be a difficulty when we seek to get a general understanding, as pointed by Ivor Samulels (1990).

According to Marat-Mendes, seven vocabularies of Urban Morphology (Marat-Mendes, 2011) can be identified as paradigmatic for urban morphology researchers: i) *Dictionnaire de l'urbanisme et de l'aménagement* (Merlin, Choay, 1988); ii) *A concise glossary of architectural* (Parker, 1989); iii) *Town-planning glossary* (Venturi, 1990); iv) *The dictionary of urbanism* (Cowan, 2005); v) *A glossary of urban form* (Larkham, Jones, 1991); vi) *Vocabulário Técnico e Crítico de Arquitectura* (Rodrigues, Sousa, Bonifácio, 1990), considered as "the only dictionary of terms specialized in architecture published so far in Portugal" (Toussaint, 2009, 28); and vii) *Thinking about urban form: Papers on urban morphology 1932-1998* (Conzen, 2004), extracted from several sources dated between 1949 and 1986. But by the fact that some of these studies may be out of date and others are not available in the English language reveals that it is necessary to update the information in order to make it accessible to a broader range of Urban Morphology scholars (Marat-Mendes, 2011).

Although it was not the aim of Nuno Portas and of his research team to build a glossary or a dictionary, it is possible to retrieve today a number of 'terms' and 'definitions' related to Urban Morphology, identified from the studies conducted by Nuno Portas, Maria da Luz Valente Pereira and Maria Amélia Correia Gago, respectively two architects and one sociologist from CHD. As mentioned by Valente Pereira, these 'terms' and 'definitions' "were not based on systematic studies nor did they explain a body of theory, they were closely related to the development of the mentioned studies and as we were forced to restrict and specify the field in which they stood or to relate them to other aspects that would not be dealt with and which would therefore have to be highlighted, appointed and, where possible, defined" (Pereira, 1973, 6).

By 'terms' of Urban Morphology we designate here all the terms that allow to define and

classify different elements of the urban form. Table 1 summarizes 'terms' with interest to urban morphology as identified in the analyzed publications.

Table 1. 'Terms' related to Urban Morphology identified in CHD and AD publications (1962-1974)

PORTUGUESE TERMS (original)	**ENGLISH TERMS (translation)**	**REFERENCES**
Sistema de Acessos	Access System/Back Lane	Cabral, 1968
Acessibilidade	Accessibility	Pereira, 1973
Apropriação	Appropriation/ Appropriate	Pereira, 1973
Apropriação do Território	Appropriation of the Territory	Pereira, 1973, Pereira 1971b
Área	Area	Portas, 1969
Área de Intervenção Arquitetónica	Architectural Intervention Area	Pereira, 1973
Edifício	Building	Pereira, 1971a
Cidade	City	Pereira, 1973
Projectar	Designing/Projecting	Pereira, 1971b
Divisão da Casa	Division of the House	Pereira, Gago 1974; Pereira, Gago, 1974a
Ambiente	Environment	Pereira, 1970
Forma	Form	Pereira, 1973
Espaço	Internal Space	Pereira, 1973
Bairro	Neighbourhood	Pereira, Portas 1967
Espaço Público	Public Space	Pereira, 1973
Espaço Privado	Private Space	Pereira, 1973
Projectar a cidade	Projecting the City	Pereira, 1971a
Espaço	Space	Pereira, 1973
Território da Habitação	Territory of the Housing	Pereira, 1971b
Projecto Urbano	Urban Project	Pereira, 1971a
Área Urbana	Urban Area	Pereira, 1970; Pereira 1971b; Pereira 1973
Centro Urbano	Urban Centre	Portas, Pereira 1967
Planeamento Urbano	Urban Planning	Pereira, 1971a
Forma Urbana	Urban Form/Form Complex	Pereira, 1971a
Espaço Urbano	Urban Space/Urban Landscape	Pereira 1970; Pereira, 1973
Sistema Urbano	Urban System	Pereira, 1973
Urbanidade	Urbanity	Pereira, 1973
Zona	Zone	Pereira, 1970
Zonamento	Zoning	Pereira, 1973

Source: Authors

Altogether, these 'terms' and 'definitions' could contribute to the construction of a new 'Glossary of Urban Form' or complement the existing one compiled by Peter Larkham and Andrew Jones (1991), which is considered one of the main urban morphology glossary by ISUF (published on its WEB page). Table 2 shows a selection of 'terms' and 'definitions' related to Urban Morphology, as identified in CHD and AD publications (1962-1974).

Table 2. A selection of 'terms' and 'definitions' related to Urban Morphology identified in CHD and AD publications (1962-1974).

TERMS	DEFINITION	REFERENCES
City	"The city as 'urban object' is mainly the structure of political-economic forces that determine its conditions and characteristics of development. The city as an urban object is above all the body and the organism that inhabits it, vivifies and transforms"	Pereira, 1973, 8
Designing/Projecting	"To design, to build an 'urban zone' is to make a 'call', an invitation, so that people go there to carry out their daily lives. For this 'call' to take place, it is necessary to determine the characteristics that make urban space able to contain (in a physical, functional and cultural sense) the urban behaviours of its users"	Pereira, 1971b, 3
Environment	"An element of the urban system that corresponds to the aspects that has to do with the symbolic values and the physical comfort of the urban system, its modes of consumption and appropriation"	Pereira, 1973, 48
Projecting the City	"It implies knowing and representing the urban system (theoretical activity), designing the proposal for modifying the system (practical activity), evaluating and transmitting the modified system (theoretical activity)"	Pereira, 1971a, 4
Space	"Subsystem of the urban system whose elements refer to the aspects of form, environment, formal and environmental values, their symbols and signs"	Pereira, 1973, 49
Urban Form/Form Complex	"An element of the urban system that corresponds to its emptied body, to full and empty, to the 'shape' not animated but with capacity to signify, in other words, culturally expressive"	Pereira, 1973, 49
Urban Space/Urban Landscape	"It is the set of aspects that in urban reality can refer to space, exist in space, are directly or indirectly spatially. The urban space participates in the urban and architectural domain, it is not only form but inhabited form, 'organized' form, living form that changes and evolves"	Pereira, 1973, 9
Urban System	"It is a set of co-present elements that have the property of having relations among themselves and between their attributes. Elements of a system are its parts, its components, and its attributes, the properties of its elements"	Pereira, 1971a, 1
Urban Zone	"Limited area forming a coherent urban whole. That means that the area must have the size and elements necessary to fulfil all the economic, cultural and social exchanges necessary for the daily life of the population that is 'there'"	Pereira, 1970, 4

Zoning	"It seeks to "match in a physical area a set of activities linked only to the activity to reside, making it self-sufficient, unit of residence, and distinguishing it from other areas dedicated to other sets of activities that stood out: recreational work, tourism, etc."	Pereira, 1973, 19

Source: Authors

Towards the construction of a possible glossary of urban form

From the above, it is possible to verify that only a few of these 'terms' and 'definitions' can be identified in the Larkham and Jones glossary (1991). This effort can be extended to other specialized dictionaries, namely some of the Urban Morphology vocabularies identified by Marat-Mendes (2011), but also: 1) the *Dictionnaire Historique d'Architecture*, by Quatremère de Quincy (1755-1849), translated into Italian in 1842 and commonly considered as one of the most exemplar reference for architecture glossaries and dictionaries; 2) the *International vocabulary of town planning and architecture*, edition prepared in three languages (French, English and German) by Jean-Henri Calsat and Jean-Pierre Sydler (1970); and 3) the *Glossary of Land Use and Planning Terms* (Institute for Local Government, 2010), which was the most recent glossary that we have identified. The identification of new terminologies complements the work done by other authors, including theorists of architecture or urbanism, geographers, sociologists, etc. while promoting a better understanding of the study of the Urban Form among readers of different disciplines (Marat-Mendes, 2011).

Table 3. Common 'terms' and 'definitions'

TERMS	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Access System/Back Lane					●			
Accessibility (*Accessibilité*)		●	●				●	●
Appropriation/Appropriate (*Appropriation*)		●	●				●	●
Appropriation of the Territory		●						
Area		●		●			●	
Architectural Intervention Area (*Architettonica*)	●							
Building (*Edifizio*) (*Bâtiment/ Construction*)	●	●	●	●	●	●	●	
City (*Ville*)	●	●	●	●			●	
Designing/Projecting (*Design*)	●	●	●				●	
Division of the house (*Divisione*)	●							
Environment (*Environnement*)		●	●				●	●
Form		●		●			●	
Internal Space				●				
Neighbourhood (*Quartier*)	●	●	●			●	●	
Public Space (*Espace Public*)		●	●					
Private Space								
Projecting the City (*Projetter*)	●							
Space (*Espace*)		●	●	●			●	
Territory of the Housing								
Urban Project (*Planification Urbaine*)		●	●		●		●	
Urban Area (*Zone à Urbaniser*)		●	●	●			●	
Urban Centre (*Centre Urbain*)		●	●	●				
Urban Planning (*Aménagement du Territoire*)		●	●				●	
Urban Form/Form Complex (*Forme Urbaine*)			●			●	●	
Urban System (*Système*)			●					

Urban Space/Urban Landscape						●		●
Urbanity (*Urbanité*)			●	●				
Zone		●						
Zoning (*Zonage*)		●	●	●			●	●

Legend: [1] Quatremère de Quincy, 1842; [2] Calsat, Sydler, 1970; [3] Merlin, Choay, 1988; [4] Rodrigues, Sousa, Bonifácio, 1990; [5] Larkham, Jones, 1991; [6] Conzen, 2004; [7] Cowan, 2005; [8] Institute for Local Government, 2010

Source: Authors

The existence of 'terms' and 'definitions' identified in more than one type of publication can be analyzed and compared. The same 'term' can, naturally, achieve more than one 'definition' and this may not even be identical, as for example we can verify with the word 'building', one of the 'terms' identified that is present is almost every analyzed publications. Table 4 offers different definitions of the term 'Building', namely in the identified AD publication and in other analyzed glossaries/vocabularies.

Table 4. Different definitions of the term "Building"

REFERENCES	DEFINITION
Quatremère de Quincy, 1842, 599	"Building is the noblest voice, and it is applied to time, houses, palaces, towers, etc."
Calsat, Sydler, 1970, 14	"Any public or private construction aimed at sheltering man, animals or things"
Pereira, 1971a, 26	"It means a built complex, a construction that is equivalent to a cohesive set of activities and not just the building block"
Merlin, Choay, 1988, 171	"A building refers to any construction that serves as a shelter for people, animals or objects. The term has also been used in the sense of building actions"
Rodrigues, Sousa, Bonifácio, 1990, 116	"It results from the material of the building action; (Build: construct, in the narrow sense of the architectural work)"
Larkham, Jones, 1991, n.p.	"A house or stationary structure with walls and a roof" (Oxford English Dictionary). The absolute requirement for a roof may be questioned. `Building' is the abbreviated usage in town-plan analysis for the block plan of a building. Generally, in urban morphological usage, all three dimensions of the building are considered"
Conzen, 2004, 240-241 and 244	Block-plan of a building "The area occupied by a building and defined on the ground by the lines of its containing walls. Loosely referred to as the 'building'. It is a plan-element" (1960) Accessory building "A subsidiary building on a residential plot, such as a garage, garden house, tool-shed, or gazebo, serving as an accessory to the house, as the 'dominant' of that plot. Distinct from *dominant building*" (1977) Dominant Building "The house or main structure on a residential plot. Distinct from *accessory building*" (1977)
Cowan, 2005, 42	"The act or process of constructing. Something that is built. A building is defined by the Royal Institute of British Architects for the purpose of its design awards schemes as 'any structure, whether new, restored, rehabilitated or converted, which includes an element of executed design work'"
Institute for Local Government, 2010	(not contemplated)

Source: Authors

Conclusion

Although the construction of a glossary of urban form is still in progress, it was already possible to identify a number of 'terms' and 'definitions', which are common to those identified for example by Peter Larkham and Andrew Jones (1991) in the current updated version of ISUF Glossary of Urban Form. This reveals the need of further comparative analysis to other works.

This presentation highlights how in the beginning of 1960´s, when Sustainability debate was gaining international relevance, in Portugal, the importance of research in 'housing studies' and 'urban systems' developed at LNEC between 1962 and 1974, supported by the development of informed methodologies in other international research centers. Such research still appears to be a determining factor in the contemporary research context of urban problems, including those that guide the new urban agenda Habitat III (2016) and the United Nations 2030 agenda for sustainable development.

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Fragmented Cities: Reviewing sub-communities in the Contemporary Metropolis

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This research studies the inter-cultural urban aspect often seen on the level of big cities worldwide. It presents the main characteristics that dominate the phenomenon of diaspora-ruled neighborhoods in international cities.

The issue of globalization and the momentum caused by the flux of people in the recent century due to mega migration waves has shaped the metropolis in a new and intriguing way. Throughout the world's capitals, many sub-communities have been appearing due to economic and safety issues. Cities like Beirut, New York, Berlin, London and Paris have all been an epitome for the study of diaspora movements and their effect on the urban scene.

The general scope of this paper is to study some of these cases and attempt to identify a certain parameter of shared characteristics belonging to each group of zones based on culture and history, in order to arrive to an understanding of what triggers these forms. It studies the nature of boundaries, ranging from massive fences to a seamless transition through a street. It also explores the possibility for a hybrid style or identity caused by the interlock of cultures on an architectural level.

The approach combines a set of tools by morphologically reading the gradient or abrupt transition between the local urbanization and that of the sub-community. This should be done by thoroughly examining and collecting the data necessary for such a study. Then, following an objective read into the provided data, the aim will be to try to mend the fracture between the different realms and to collect a group of projects that previously targeted the issue of intercultural urban fractures. Last, a preliminary project will attempt to re-stitch two hostile realms in one of the case studies based on the set of characteristics obtained following the study of a more successful case.

As a general goal, this study aims to spread awareness towards migration movements and their subjects. It also invites the reader to rethink the city in an innovative way as a collective canvas affected by many aspects for its inhabitants rather than a systemized space defining life.

Introduction

This document attempts to reread the ethnic agglomerations that tend to form at the level of international cities due to the mass migration of a certain group of people from a rather homogeneous background. These agglomerations, known as ethnic neighborhoods, are zones specified by the dominance of a certain foreigner population which affects the general dynamic of the city culturally and financially. The zones could be the result of a discriminatory urban policy, the collective financial capacity of the residents, or personal preference.

The document studies three cases of sub-communities in three different locations, in order to differentiate the characteristics of the neighborhood and to establish a set of common ones, while still acknowledging the specificity of each and every culture, and how that affects the resulting space. Through this review, the case studies will shed light on the main problems and social stigma that challenge the healthy co-existence of the local culture and the emerging one.

Through the methodological reading of these locations, a general understanding of the main challenges against sub-community integration will be put forward, in hopes of extracting some main guidelines for the effective and healthy integration process that should be instilled. This process could be a collective effort pursuit by local urban authorities, civic game-changers, social public figures, and so on.

This paper reviews the Bourj Hammoud zone in Beirut, Lebanon. Knowingly the strongest ethnic point for Armenian sub-communities in the world, in an attempt to grasp the main factors that contributed in the success story of this district, by acknowledging the way the people and their lifestyle merged seamlessly with the Lebanese metropolis. Contrary to Palestinian camps; namely the Ain El Helwi camp in Sidon, which is infamous for being a hazardous area and an inaccessible enclave for non-Palestinians; in a clear sign of failure of integration between the enclave and its surroundings, despite the religious homogeneity of the city.

In Rome, the Esquilino neighborhood sparks attention for being the "Chinatown" of the city. With its increasing Chinese population, accompanied by an abundance of Chinese businesses in the area, this zone has been infamous lately for its rising fragmentation from the whole of the city. Problems like prostitution, theft, misconduct and more are gradually encouraging the Italian residents to leave the area. Also, the powerful transitional aspect of the area prevents any endeavors to form a healthy society.

To better understand the problems and challenges of the Esquilino zone, Chinatowns in the USA are to be studied thoroughly in order to apprehend the general attitude of the population and to examine potential solutions and policies. The USA, however, is well-known for being the world of ethnic enclaves; be it the African ghetto, little Italy, Hispanic zones and the model of the Chinatown. This paper briefly reviews the urban policy of ethnic enclaves in the states to better apprehend the dynamic of these zones in the metropolis.

Lastly, reviewing the previous case studies, we shall attempt to present a series of recommendations that would help limit the cultural and urban gap between Esquilino and Rome, with the assistance of a quick read to similar interventions and projects in Italy and abroad that helped mend the urban fracture between ethnic groups and their host city.

Lastly, a revision to the metropolis as a whole unit composed of complementary sub-units instead of a gathering of enclaves is suggested and encouraged; with the city being a flow of inter-cultural acceptance which would potentially strengthen democracy and participation in the decision-making process.

Methodology

Preface

Ethnic neighborhoods are zones in the middle of the metropolis with characteristics differing from the rest of the local dynamic. Usually, what defines the identity of a city is its collective urban culture that generally sprouts from its history, generations of people and

their interactions in the urban space. An attitude of the city is the familiarity the locals attach to their surroundings in a way that enhance the sense of belonging.

Urban culture is depicted by the public spaces, the architectural style, the language, the market and the predominant discipline of the people. When mass migrant waves occur to a certain city, this familiarity is often broken and the host areas are marked with crime, segregation and negativity.

These areas are called ethnic neighborhoods; agglomerations of foreigner residents or ethnically different ones that either decide or are influenced by urban policy to settle in areas away from the original citizens.

Many factors influence the formation of ethnic neighborhoods; often, ethnic zones are created by the mass migrant wave of a population to a certain city; in the past, these groups of people would belong to a single domain of work and would form a collective ambiance underlined with their commute patterns. This resulted in similar economical capacities for the sub-community and encouraged their settlement in a single zone. Other factors that influence the gathering of a certain ethnic group in the same zone is the urban policy of the city, which directs the settlement of sub-communities in far zones from the privileged local community.

Sometimes, however, ethnic neighborhoods form due to the personal preference of the ethnic group; this usually helps them preserve their language and sense of belonging, it also helps new arrivals, contributes in the creation of a sense of familiarity for the incoming population and even a sense of authority and possession over the zone.

Resulting of these factors is a set of general aspects often perceived in the ethnic neighborhood; these zones, often being self-monitoring and ruled, are marginalized from the rest of the city's dynamic, including the law enforcement plan. This is the main reason for the rise in crime and drug dealing in these areas. Also, due to the governmental neglect to the zones, them belonging to non-voters and sometimes illegal settlers, the zones are usually of low maintenance and lack many amenities for an effective public life. Therefore, these zones are looked down on and are usually connected to prostitution, outlaws, drugs, and danger.

In retrospective, this encourages the stigma towards foreigner ethnicities and further widens the urban fracture between their zones and the host city.

Lebanon: the seamless and the fortified

Lebanon has been historically marked as a base point for travel and trade, with its location on the eastern Mediterranean coast. Up from the last century until this date, Lebanon has been subjected to endless immigration waves from and to the national territory. The main minorities existing in Lebanon today are the Armenian and the Palestinian communities, with now the vast flow of also Syrian immigrants due to the ongoing war.

This section of the paper studies the performance and effect of the ethnic neighborhoods emerging during the 20th century in the hosting Lebanese city. Specifically, two cases will be assessed; the Armenian neighborhood "Bourj Hammoud" in Beirut and the Palestinian enclave "Ain El Helwi" in Sidon.

The issue of these two minorities is intriguing in its own respect; Palestinians, being relatively close to the Lebanese population in aspects of culture, heritage and language, have failed to integrate with the community and are presently heavily segregated in walled and fenced enclaves almost inaccessible by the Lebanese. These zones, called Palestinian camps, are cut-outs areas of the Lebanese territory and face a generally negative attitude from the Lebanese side. This may be due to many factors that widened the societal gap between the two neighboring nationalities; historically, Palestinians, among their arrival to Lebanon, used their newly settled zones like the one in Sidon as war bases to attack the Israeli units. Additionally, it is registered that the lands that were inhibited by Palestinians previously belonged to the Christian Lebanese in south Lebanon that had to migrate themselves to the northern part of Lebanon. This triggered an inter-religious conflict in the Lebanese realm and later was one of the key factors for the Lebanese civil war. Naturally, this created a hostile attitude towards the Palestinian presence and inherited a negative response amongst both

Lebanese and Palestinians. Presently, Palestinian camps are seen as base point for extremism after the emergence of a group of Islamist terrorist cells and are even further segregated and avoided in the urban life. These zones are also depicted as crime and outlaw zones and are often circulated by army units and gates.

This failure in the integration is also influenced by the local policy of the Lebanese government that rejected the naturalization of Palestinians and prohibited them from the acquisition of property which made it impossible for the Palestinian generations to escape from the ethnic enclave and heavily challenged their integration into the Lebanese realm. This is sparked by the ongoing perception of Palestinians as transitional people who will eventually leave the Lebanese territory when the state of Palestine is redeemed.

On the contrary, the Armenian minority has been very successful integrating seamlessly with the Lebanese life. Since their abrupt arrival in 1921 following the ottomans' brutal acts towards their people. In 1932, Armenians in Lebanon amounted to a count of 31992 citizens in Lebanon. At their arrival, Armenians staid in camps in the north coast of Beirut and adopted the transitional identity and didn't go well with the surroundings. However, following the French mandate in Lebanon, the Armenians gained a wide support from the Catholic Church and were assigned a territory in Beirut to build and settle in. Today, Bourj Hammoud is the base point for the Armenian existence in Lebanon, even though many of them left the area around the second generation and dispersed in the surrounding zones and towns. Another aspect of governmental acceptance is the naturalization of Armenians and giving them the Lebanese nationality soon after the Lebanese independence and the acknowledgment of their advocacy through giving them 2 minority parliament seats.

The Armenians built their zone in an urban system that matched the one that existed in towns Armenia; they even named the streets after Armenian towns and copied their architectural styles in houses, schools and churches. However, Armenians regarded the main axes of Beirut into consideration and offered continuation to them, which extended the arteries of the city towards the Armenian neighborhood. This is evident from a simple review of the sky images of Bourj Hammoud that show a neighborhood with smaller scale houses, but still with continuous axes towards the city.

On a social level, the second generation of Armenians abandoned the transitory attitude and started participating in the political and economic realm of Lebanon; offering their crafts, cuisine, expertise and culture as creative careers that fascinated and refreshed the Lebanese market. Many stakeholders in Lebanon today are Armenian and many factories in Metn area were initially erected by Armenian settlers.

Today, the Armenian population in Lebanon amounts for about 150'000 residents. The current 4th generation has completely overcome the language barrier and no accent can be longer detected. The Armenian community contributes to the Lebanese cultural identity with 28 schools, over 20 churches, their own university along with radio stations, cultural clubs and centers, newspapers and restaurants.

It is argued that the Armenian presence in Lebanon seriously affected the local culture in a positive aspect; the Armenians succeeded in balancing between integration and cultural integrity; they gained local support and advocacy, shared their culture openly and established their urban fabric while still regarding the wider existing urban surrounding.

It is suggested through this passage that lessons can be learned from the Lebanese experience with sub-communities; that language is not always the main barrier rather than the host's and the guest's attitude and policy towards the new circumstances.

Below are the aerial images of Ain El Helwi (fig.1) and Bourj Hammoud (fig.2) in connection with their surrounding cities in a clear view of the rupture of the first and the continuity of the second.

Esquilino: the emerging Chinatown

Moving towards the northern coast of the Mediterranean, is Italy with its eternal city Rome; the historical city overflowing with heritage and culture. Rome is a complex topic to tackle when discussing sub-communities for both the singularity of the Italian culture and the developing aspect of Rome as a touristic destination and a transitional city for explorers.

Yearly, around 9 million tourists go to Rome; most of them land in termini station however, and many of them decide to reside there for their stay. Next to Termini is Esquilino; a neighborhood adjacent to Piazza Vittorio Emanuele that is characterized by the abundance of foreign residents, especially the Chinese diaspora. It's the clearest sample of multiethnic Rome. The Chinese population in the area is particularly flagrant in the zone for their financial power over the neighborhood, giving the area its Chinatown-like depiction.

Esquilino, in latin ex-quilinus which means foreigners or newcomers, started off in 1974 as a neighborhood for government employees resettling in Rome and coming essentially from north Italy. Later, it was inhabited by workers coming from poorer Italian regions in the center and the south. Today, Esquilino's population is marked by a high percentage of foreign nationals with the Chinese ruling the general image.

When speaking of the area, many issues are put into focus by interviewees; Italians primarily have a very negative conception of the area, deeming it unsafe, illegible, not Italian and simply peripheral and excluded.

Foreign residents in Esquilino however complain about the lack of public services and governmental care, the absence of law-enforcement, the marginalization and dismissal of their demands and needs and so on.

What probably encourages the feeling of loss of identity in the area is several ruling factors; in Esquilino, many languages are usually spoken and Italian is not a universal language anymore, which forms a difficulty of communication and therefore integration. Also, a very big proportion of the market place and stores, almost the majority, are owned and run by Chinese or Asian workers. Law-enforcement units and neighborhood maintenance is almost inexistent since the sub-communities resolve their issues in their closed clubs and groups, which encouraged the rise of crime and illegal trade in the area, further extending the fracture and the stigma towards Esquilino. Additionally, the nature of the Termini zone as a transitional place for tourists and the existence of many unstudied hostels and hotels encouraged the rise of prostitution and eliminated any sense of familiarity in the area, therefore heavily challenging the formation of a unified sense of community and shared value between the residents.

As for career profiles and commute patterns, the majority of Chinese people in Esquilino are originated from the same town and hold similar career profiles and owned businesses. As for other minorities, the location of Esquilino next to the main transportation network facilitates the agglomeration of the communities in this area.

It is also said that the attitude of the newcomers and their feeling of insecurity towards the host country is an integral factor for the continuous segregation happening on this level; today the Chinese resolve to their self-established authorities for guidance and assistance and they secretly take the initiative of transforming their originally Italian apartments into Chinese-friendly ones with a very isolated and enclosed attitude towards the curious eye. This exclusion on the dwelling level is also seen on a public level, where even though Chinese and other minorities co-habit the area, the Chinese often choose to keep to their own in most matters, and even share the same mutual base of clients and friends within their community.

The existence of the faculty of oriental studies near Esquilino as well indirectly prompts the student base – mostly Chinese and Asian – to stay in Esquilino and in this ethnic enclave by means of commute facilitation and might challenge the displacement of the Chinese into less homogenous areas.

Up to this date, and unlike the USA, Italy doesn't seem to have a strategic policy that exclude the Chinese diaspora from merging into the Italian city. Instead, the authority in Rome seems to be applying the European "reasonable integration', leaving things be for now, and not contributing heavily on the urban and social issue of Esquilino.

This however raises dismay from many Italians that are near the zone, deeming the government to be encouraging the financial dominance of the Chinese over their own businesses, and feeling a sense of state abandonment and a feeling of exclusion in their own country. This is causing original home owners to leave Esquilino and to either discard, sell or rent out their properties to even more foreigners which widens the societal gap in the district.

Today, efforts of integration don't overpass an annual Chinese movies week and a few scarce events in the Piazza. In fact, the main square also evokes a sense of danger with

its alleyways, dark corners, absence of security and neglected landmarks. The tram line adjacent to it made an effect of rupture between it and the residential buildings, further making matters worse for the passerby.

Chinatowns: quick review

In order to understand the reason behind the Chinese attitude in Esquilino, it is important to have a quick reading of the Chinese diaspora, influenced by its original culture, and how that collectively influences the sub-community regardless of the new settlement. Chinese communities exist in most of the big cities in the world with varying degrees of influence and momentum; in fact, the Chinese diaspora is thought to be around 20 million individuals. Society in China is identified based on lineage or family name, hometown and language group. These are the main qualifiers that the Chinese identify with when considering ties with people. Abroad, the matter is more complex; very often, Chinese individuals looking to leave China follow where their family relations or friends are already established. They also acquire the same career path and occupation, and share experiences and enclose themselves from the impact of the outsiders. Additionally, unlike other nationalities, and due to the religious nature of the Chinese to worship their ancestors and venerate the lineage, Chinese emigrants generally don't go abroad in a quest of adventure or a new life; instead, they are usually pushed by circumstances and are considered in transit until they go back and perish in their hometowns. This sentiment has been seen to continue among generations of Chinese emigrants, with the deceased being transported to their hometowns and with the new generations being very familiar with their families and roots back at home.

On a social level, Chinese communities usually form community organizations that form the frontal interface with the local community. They advocate for needs, solve conflicts, participate in politics, organize inter-community events and collect financial dues from the community.

Up until this date however, no Chinese sub-community has had successful or valuable representation in the political realm of the host country. They usually self-govern themselves and cope with the lack of governmental assistance with their own resilience.

Objectively, this attitude towards emigration and resettlement as an unfortunate and inconvenient matter just to earn a living heavily affects the chance of integration with the community.

Forming process

Studying potential interventions in the Esquilino zone would require reviewing local integration policies in Italy. In Bologna, a communal effort has risen in order to adopt the guest culture making a creative city out of Bologna. As a member of the UNESCO coalition of cities against racism, Bologna is striving to attract creative arts and markets into the historical city. This is done by financially encouraging the ethnic expression of the residents and university students, attracting investments for diverse markets, creating networking platforms for all the inhabitants in order to collectively redefine the future of the city and the idea of comfort and livability, increasing the participation and awareness of citizens towards decision making and keeping the best talents of Bologna among them – all while maintaining the historical center as is and pursuing polycentric development on the level of the city.

This brief study of the data available allows the evocation of a series of recommendations for Rome. For instance, the commune is ought to reestablish its grip on Esquilino; spreading security officers around the clock, firmly overlooking the general behavior of the neighborhood. Also, the government should apply some serious refinement works to the area; cleaning, maintaining, and refurbishing the architecture and urban furniture, representing the historical remains in the area with light installations and signs inviting passerby over.

Limiting the extent of hotels and hostels in Esquilino would be favorable in terms of requalification of the residential aspect of the zone, and would limit drug dealing and prostitution.

Organizing hearing sessions, encouraging individual advocacy rather than organizational

ones, increasing the participatory aspect of the game changing process in the area would help loosen the secluded attitude the Chinese express in the area.

Also, reconsidering the plan of Piazza Vittorio Emanuele – it being the biggest public space available and therefore the highest potential meeting point for the communities – would be helpful by redefining the main axes of the garden, eliminating the blind zones and dark corners, having officers on-site and adding light to the passages.

The park should also serve more social layers by maintaining an effective zoning that would serve pet owners, parents, elderly people, and youth.

Additionally, any requalification for the existing buildings or any new project should take into consideration the inter-cultural aspect of the inhabitants by aiming for a flexible design of the partitions and openings.

As for the market, the government should adopt the emerging merchandise as a potential for a creative and new wing of economy in the Roman realm.

Additionally, inter-cultural events ought to be more persistent and effective. This could be done by building cultural centers or clubs that would host multiple languages and encourage the sharing of cultures between the different ethnicities. Such a center would have to accommodate to the needs of all ethnicities and demographic layers (for example, prayer rooms and kid zones).

A more extreme suggestion would be to move the faculty of oriental studies away from Esquilino or even establishing another department in the main campus in order to separate the youth from their comfort zone and to encourage them to interact with the local wider community.

In order for any of these suggestions to work, all the communities in play should first adopt a risk-taking policy in aims of better integration and inclusion.

Conclusion

This paper primarily aimed to present another definition to the metropolis; it gives insight on a city not defined by the agglomeration of quarters and communities, but rather a storyline of inter-cultural acceptance and development that forms with time a yet more original urban identity, familiar to all yet unique to other cities. This paper proposes that participation and openness are key factors in a better democracy of the city, and discards the traditional view of the city as a nationalist persisting depiction of a one homogenous people. This all is possible through the adoption of the incoming culture as a chance for a better urban dynamic for all the citizens.

Figure 1.

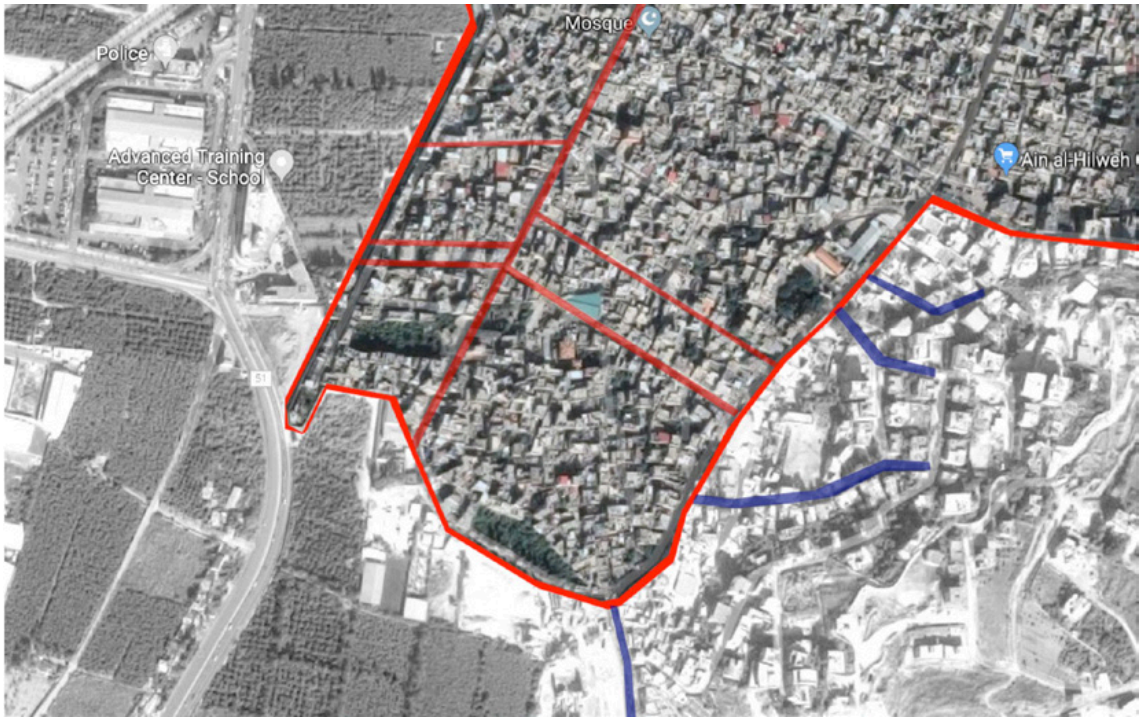

Figure 2.

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The emergence of cities, in between the urban morphological studies, the design poetic achievements and the ethnometodological social surveys

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Keywords: *Urban morphology, Architectural design*

The morphological studies about the transformations of cities have been made in the last fifty years following different "morphological schools" according to countries, cultures and theories.

We will present our own theoretical and practical view points, based upon a socio-physical dimension of architectural design following architectural and planning ideas by Spiro Kostoff, Alberto Magnaghi, Mikhail Bakhtin, Paul Ricoeur, Bill Hillier, Rainer E. Zimmermann, and others, in the sense that, in between the design poetic prefigurative act, the morphological configurative studies of cities and the anthropological refigurative surveys of the users, specific emergent powers develop in the making of the cities, in a socio-physical and space-time structural chronotopic manner.

Instate of a confrontation in between the prefigurative poetic views of architects and planners with the configurative outputs of the morphological studies or with the refigurative analyses of the social behavioral and cognitive social sciences, their dialogical interplays will help the three different spatial view points to observe the city as a common study case. We will analyze some Iranian cities (Kermanshah) and some Spanish cities (Barcelona) that have been studied in recent PhD dissertations in architecture or that they are now investigated in this way.

This chronotopic and dialogical holistic perspective opens new ways to a more refined human engagement, where the local to global confrontations can achieve in a positive emergence not always predicted, neither by the morphological studies nor by the ethnometodological social survey.

Chapter one, some theoretical considerations

The first consideration, is shown in diagrams I, that summarizes the hermeneutic theoretical framework developed by Paul Ricoeur,

The second consideration describes the embryogenetic cognitive developmental framework by G. Gottlieb, diagrams II to IV where the interplay between dawn-top relationships and Top-dawn relationships expresses the psycho-socialphysical kernel of the design act of the designers.

"Natural" orders indifferent to cultural and social historical environments, but open to experimentation

The third consideration is the replication of all these theoretical frameworks in the neurological analysis by Professor K, Friston where the interplay inside the brain between top dawn and dawn-top are clearly stated.

Finally diagrams VI and VII show the construction the city models by children, where the cognitive distributive knowledge is identified, and where the topological bidirectional influences of the embriogenetic model by Gottlieb work

Chapter two, the emergense of cities and the new holostic environtmental and developmental paradim

Alan Penn in a recent lecture in Barcelona stated:

"*Architecture: the exosomatic in cognition, culture and design education: This paper reviews what has been learned through 'space syntax' research about the relationship between the morphology of the environment, human behavior and social use. From this background it reflects on the role of computation in research and design, and the implication of this for the education of architects. It argues, rather than thinking that the mind must be extended beyond the body, that the built environment takes on structure through design that in turn is learnable and learned by human minds. It proposes that architecture may offer an important mechanism through which social forms and cultures 'get inside people's heads', and so transmit from generation to generation*".

According with this statement, the diagram VIII bellow summarizes the definition by M. Bakhtin of the chronotopic and dialogical nature of the human architectural culture, defined by Alan Penn, inside the theoretical networks defined in chapter one above. Now we can analyze the three cognitive spatial human processes shown in this diagram.

Many misunderstandings exist in relation to this hermeneutic approach to architectural and urban spatial design in our cities and landscapes by Paul Ricoeur. If these misunderstandings are not eliminated, the whole theory of architecture enters in a very dangerous and wrong situation. First misunderstanding arouse when we uses de arbitrary semiological nature of verbal language, when the sound has a meaning but has nothing to do with it physically. The meaning of a physical design is never arbitrary because the physical form is related to the meaning by motivated cultural or experiential conditions that are never arbitrary in linguistic terms. The codes are then totally different in space or in narrative verbal texts, and architecture as a language is a failure today.

The three axis in diagram VIII are linked by linguistic verbal dimensions in a virtual way, where poetics, intelligibility and intertextuality generates human meanings in what Mikhail Bakhtin calls "the big time and space " of the human language. However the architectonic and urban spatial "Big time and space" is rooted in the human history of cultures and experiences, motivated by the memory and interpretation of the subjective physical experience in a direct way. In this case, we live inside a language, it is not a language that lives inside us and this difference changes everything.

Another misinterpretation comes from the mistake of subjective" a priori" values of space and time concepts following a wrong lecture of E. Kant epistemological ideas. Now we know that even Kant itself changed a lot these ideas the last years of his life, and accepted the concept of social interaction as a necessary link between the body and the mind. So the experiential synthesis between the mind and the body, in design, it is never realized in a subjective abstraction, but in an interactive social world where dialogical communication is taking form.

The three axis then in diagram VIII are interrelated not only at a physical level, but also at a mental level and at a social cultural level. In this way, the articulation between different parts of a city are generated by a social interactive understanding of the feedback between the parts and the whole, what Hillier calls "configurative meaning of cities". However, as he himself indicates this is not enough, and we need to take into account the ethnographic social behavior of each culture, where interpenetrative forces are very important. This is why M. Bakhtin pointed the significance of the Goethe criticism of the medieval Italian villages, when he was able to "see" the contradictions and failures among the different urban transformations, when the new implied the devaluation of the whole and the ignorance of the authors of these transformations, in way similar to the ideas a Hiller in simulation with the space syntax, but with an integration between morphological analyses and ethnological historical interpretation.

It is just at this intersection that the poetic knowledge of the designer can survive as a bridge between both axis in diagram VIII, always as an innovative proposal.

Now we will represent with some examples the human and creative interplay in between the three axis of diagram VIII where the local and the global qualities of architecture and planning can be interlocated.

The Intelligibility axis can be analyzed by the configurative morphological methods such as Space Syntax, morphological methods from Italy, England, France, etc., Just look to a very simplified example in diagrams IX, X according to the distinction by W. Braunfels between in episcopal/imperial city and a republican city. Of course a lot of historical morphogenesis are needed in order to understand the meanings of these situations.

The intertextuality axis is shown in the work in Barcelona in relation to the Urban renewal in the old town where ethnographic surveys conform the morphological changes with the behavior of the users, where a final equilibrium between the old and the new result in a equilibrated situation, as Bill Hillier announced.

The Intrigue axis made of the poetic abilities of the designer is represented by the diagrams XII and XIII by Peter Zumthor and Juha Leiviskä, where the equilibrium between the two previous axis is shown.

Conclusion

We think that there is a possibility of a synchronic correlation between the three axis of the diagram X. When one axis disappears the other too are disconnected and architecture enters in a monological regime with cultural degeneration, where designers cannot make prefigurative links between configurative systems and refigurative social needs

Figure 1a. Diagram I, Design as a creative chronotope; **1b.** Trends A: Natural" orders indifferent to cultural and social historical environments, but open to experimentation (left), Diagram II, Biogenetic Natural Theoretical Trends. Unidirectional influences (Mainly Physical Impact) (right); **1c.** Trends B: Diagram III, Sociogenetic Theoretical Trends. Unidirectional influences (Mainly Social Interactions); **1d.** Trends C: Crossing geography and social history of the place where buildings belong (left), Diagram IV, Topogenetic Trends. Bidirectional influences (Mainly Cultural Environment) (right).

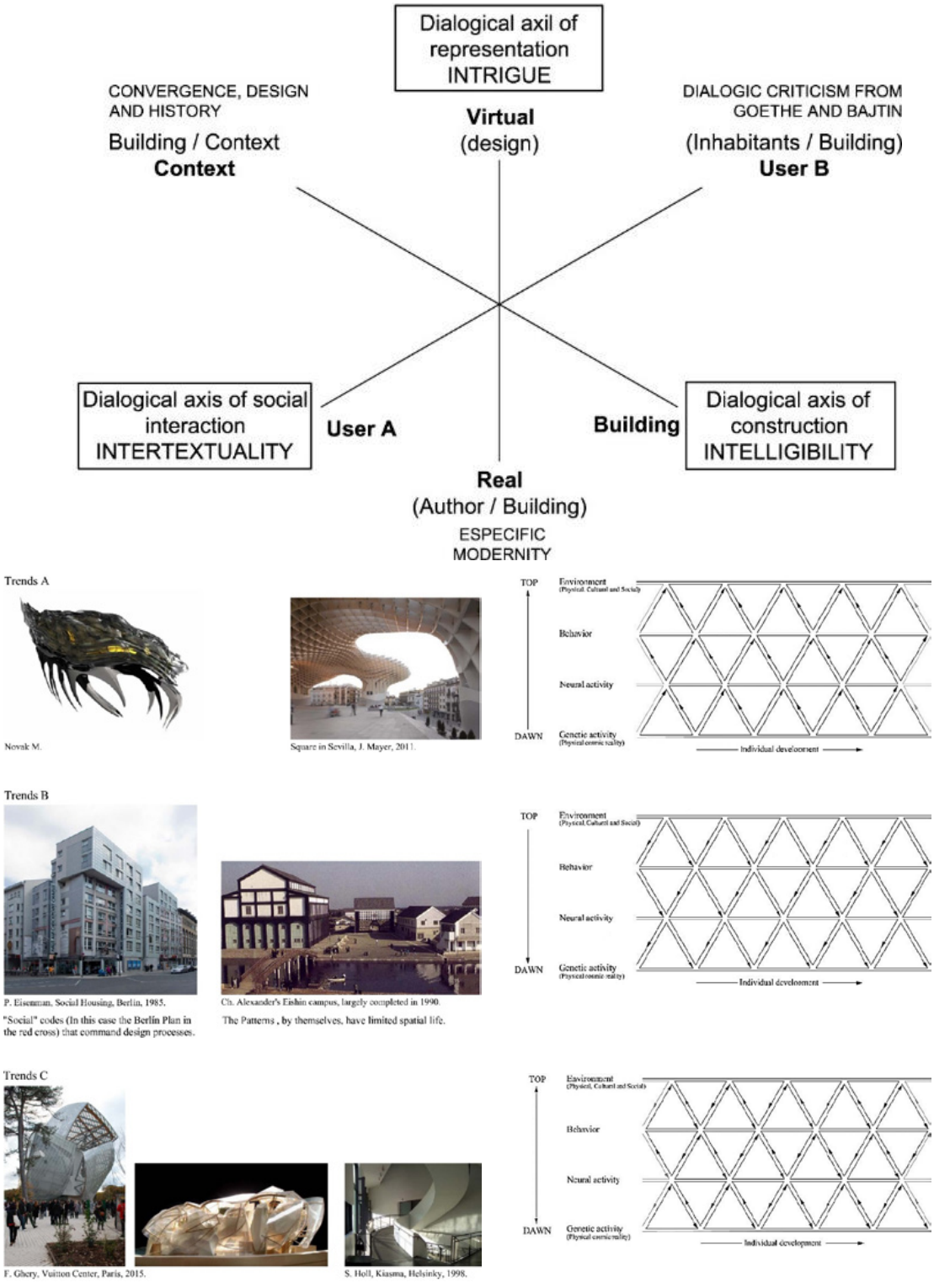
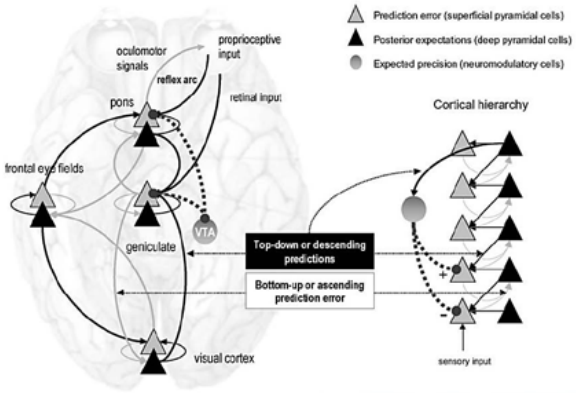
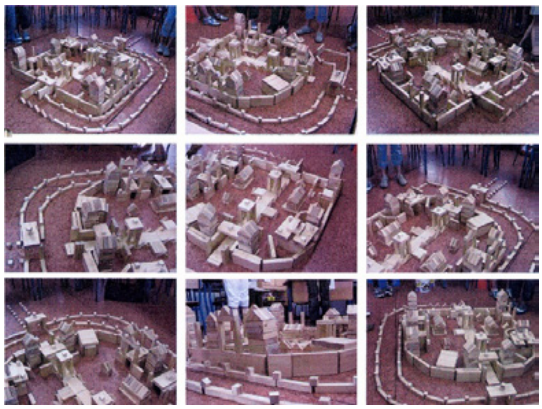
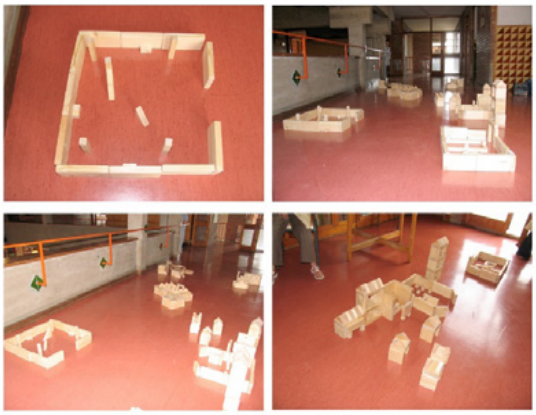


Figure 2a. Diagram V, Neurological fundamental feedback between senses and simulation; **2b**. Diagram VI, Children model of cities: dialogic and monologic structures; **2c.** Diagram; **2d.** Diagram VII, Children model of cities: dialogic and monologic structural analysis.







Dialogic cities

Subjects	Objects	
S1 → 01 S2 → 02 S3 → 03		Physical and social space and time are interrelated chronotopically.
Points of view and "voices" interrelated.		Norms for objects are interdependent of the subjects' norms.
There is a configuration between subjects and objects.		Objects and subjects configure a context.

Monologic cities

Subjects	Objects	
S1 — 01 S2 — 02 S3 — 03		Physical space & time, and "social" space & time, only relate at the individual level. The objects' relations and the subjects' relations do not correlate.
Points of view and "voices" are independent of each other.		Norms for objects are independent from norms for subjects.
There is no configuration between subjects and objects.		Objects and Subjects are context free.

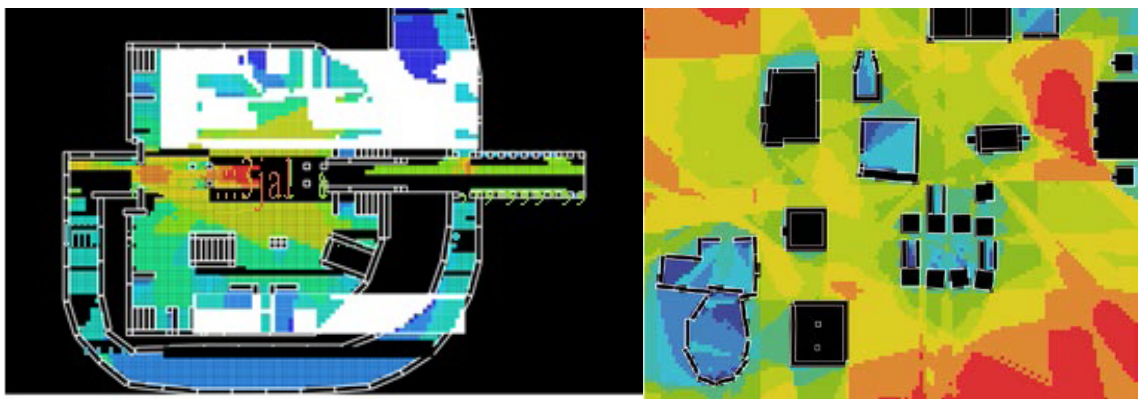


Figure 3a. Diagram VIII, The Chronotopic nature of human architectural culture; **3b.** Diagram IX, Republican city of Florence according to W. Braunfels; **3c.** Diagram X, Episcopal/Imperial city of Halberstadt according to W. Braunfels.

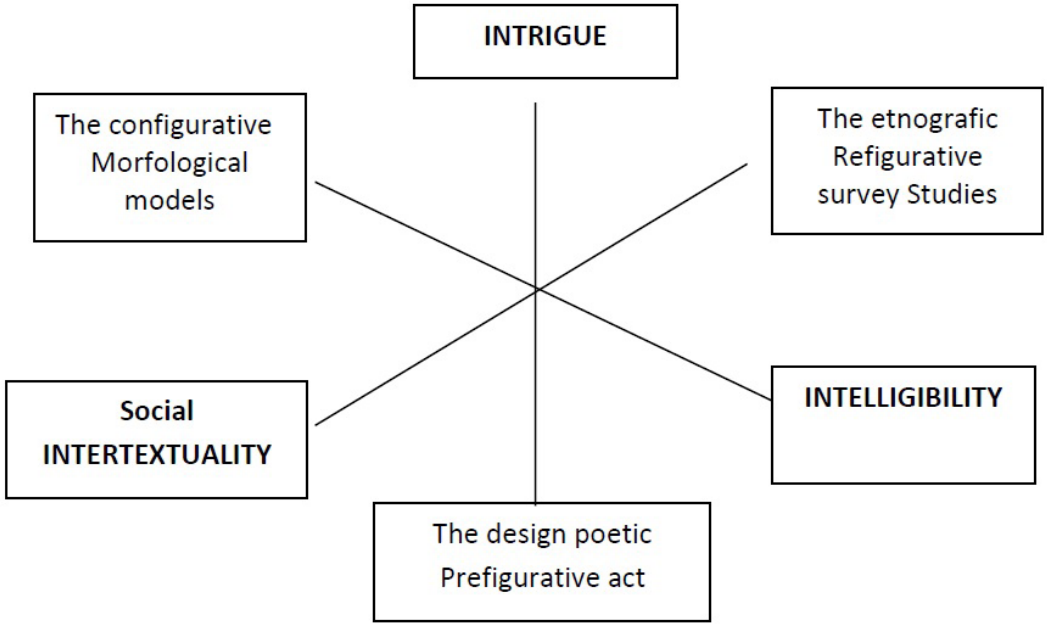
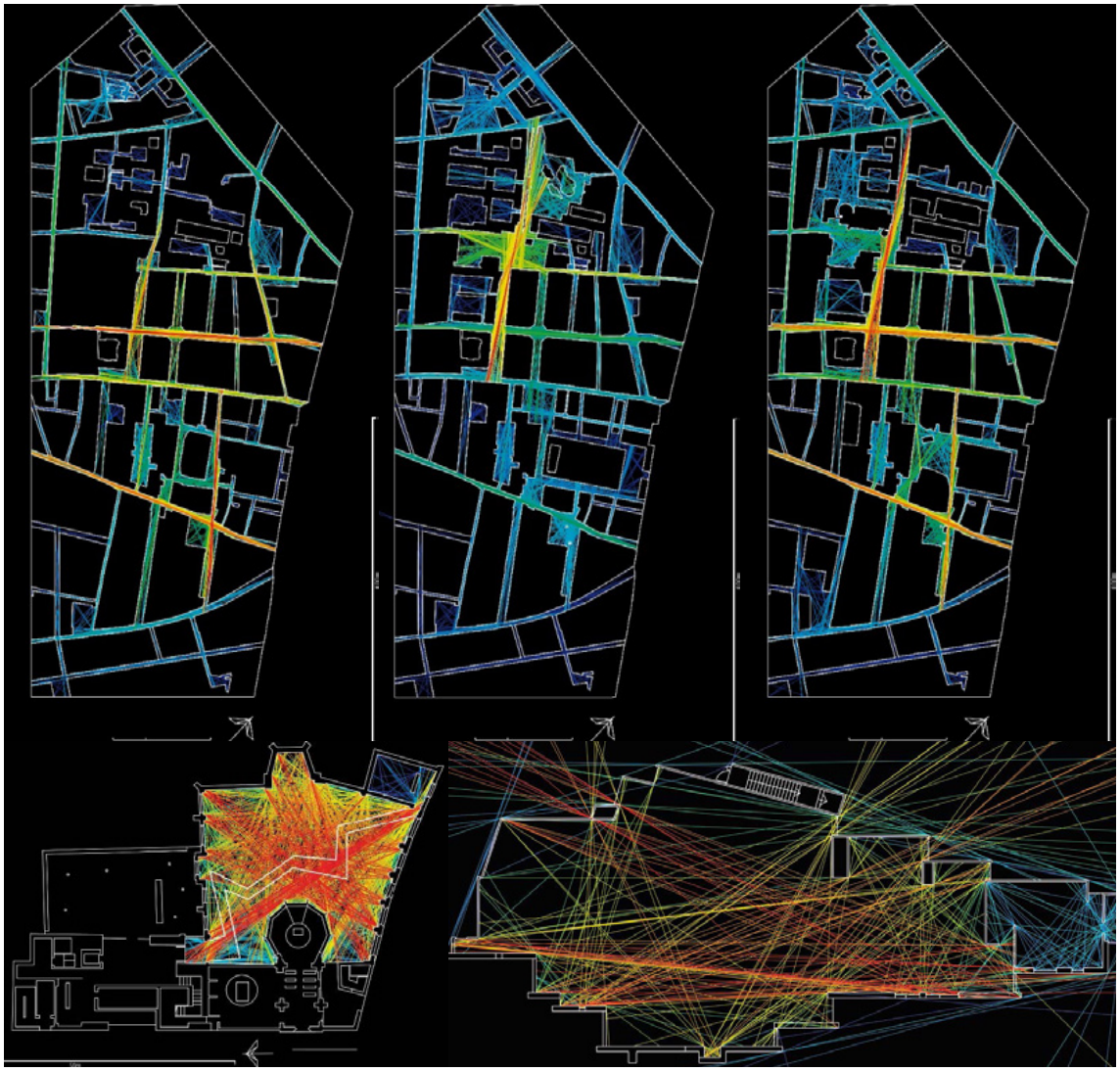


Figure 4a. Diagram XI, Ethnographical surveys confirm the need for the horizontal red lines by the users that the proposal by Lluís Clotet destroyed. This is a good combination between morphological (Space Syntax), and ethnographical city simulations;
4b. Diagram XII, Space Syntax analyses of the Kolumba's Museum where people are walking in the spaces with the maximum visibility, designed by Peter Zumthor in a poetic manner; **4c.** Diagram XIII Space Syntax analyses of the church of Männistö by Juha Leiviskä, in Kuopio, Finland (1986-1992). The red diagonal line coincides with the unique step in between the altar and people looking at the ceremony designed by Leiviskä. A nice feedback between experiential and virtual poetic interrelations.



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Urban form as a stochastic equilibrium: some applications of Alan Turing's morphogenetic model

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Morphogenetic theories that deal with dynamic systems seem adequate to describe cities as living organisms in constant transformation. Moreover, they are not limited to this: they can be regarded as multidisciplinary models connected to both nature and artefacts.

For instance, Alan Turing's morphogenetic model (1952) has been initially employed to account for the differentiation of a living being starting from a spherical embryo, by means of two chemical substances, called morphogens, undergoing processes of reaction and diffusion. Yet, the same mechanism can illustrate the emergence of pigmentation patterns in animals, the formation of sand dunes, various forms of aggregation in nature, but it has also become relevant in morphogenetic design and urban studies. In all these examples, even small variations in the concentration of given elements (or in the parameters of an algorithm) can lead to different kinds of stochastic equilibrium, thus to a wide range of shapes evolving through time.

More precisely, as far as cities are concerned, the interaction between the morphogens is replaced by the interplay of the economic forces involved (Allen and Sanglier 2010), giving rise to land-tenure arrangements which, albeit sufficiently persistent to be recognizable (Pumain 1998), are just «a step in a running morphogenesis process» (Courtat, Gloaguen and Douady 2011).

Thus, far from a hylomorphic point of view, these models consider form as the result of the action of forces emerging from the matter itself and, instead of providing deterministic predictions, they are useful as qualitative explanation tools for both natural processes and urban development.

Introduction: cities as living organisms

Morphogenetic theories that deal with dynamic systems seem adequate to describe cities as living organisms in constant transformation. Moreover, they are not limited to this: they can be regarded as multidisciplinary models connected with both nature and artefacts.

The morphogenetic model developed by Turing (1952) – like a large part of the physiognomic and morphological ancient tradition (Thompson 1917) – is mainly characterised by its way of considering "forms" as states in a dynamic system, determined by an interaction between different, sometimes opposite or even contradictory forces. Turing's equations can be read indeed as an accurate transcription of this interaction between forces leading to the development of living beings.

Since Turing's model gives a clear formalisation of "form" as "polemos", it is easily understandable why it has been widely employed in an attempt to describe even the partially artefact forms, i.e. to formalise other kinds of interaction between forces: the ones that are related not to the biological tissues, but to the geographical ones, which can be found in urban settlements.

In particular, the city – the technical artefact with the greatest value for the human beings – evolves in itself, differently from other technical objects; it can therefore be compared to an actual "organism" due to the close relationship between the physical shapes of the settlements and the life forms that generate and transform them endlessly. Even though there is not a general geometrical scheme of the city, there is a set of distinctive features that are common to various historical and (we can guess) future expressions of the city.

The determining factor is that the form of a city is the political – thus polemical – form par excellence: namely, it is always the negotiated result of a conflict between opposite – and often contradictory – values and requests, which can be, as an example, of an economic, geographical, cultural, political or technical nature.

The fact that a city grows upon itself means that all these contradictory requests must, generally and paradoxically, be somehow satisfied and negotiated. Both contradictory terms of each political, social and economic request must be satisfied.

Moreover, studies on urban history, mainly developed during last century, generally deal with the evolution of the city similarly to an "organism", often using the analogous anatomical categories for the built space – functions, apparatus, organs, tissues, cells – and the physiological ones referred to biological organisms.

The city, as the most significative "technical object" for our species, is regarded as an example of the mechanism described by Gilbert Simondon that leads to evolved objects in which the various components interact in many ways, eliminating the negative effects and frictions (Simondon 2012).

According to the French philosopher, the process of individuation of a technical object - of whatever scale - is the "concretisation", i.e. the passage from an "abstract" and primitive phase to a more concrete one that has syntropic features analogous to the ones of the organisms. The "evolved" machine is the most sensitive to the surrounding information, has an open and non-deterministic functioning system, thus it is no longer separated from its natural neighbourhood. For this reason Simondon theorises the notion of "associated techno-geographic environment", describing the techno-geographic "landscape" itself as a large technical object that evolves.

"Concretisation" (the individuation process of technical objects) is, according to Simondon, a rational tendency, but it is not the only one that acts throughout history and anthropology of techniques: there are other tendencies – entropic and irrational – that are opposed to it. The "cultural" form of city is a *vis polemica* as well.

Therefore, in order to assess city and architecture from this point of view which is typical of the anthropology of techniques, particular eidetic categories are required: they have to be different from those conveyed by traditional geometries and closer to the conception of form that emerges from complex systems.

The exploration of eidetic categories that are considered more adequate to describe the settlement processes is the main purpose of research in urban morphogenesis, which in some cases employs mathematical models similar to the one conceived by Alan Turing.

Obviously, the choice of the theoretical concepts that allow us to adequately interpret these phenomena is a prerequisite for the construction of dynamic models in the field of the organisation and evolution of cities (Desmarais 1998) that will be meaningful only if they are capable of better approximating the development of a city.

Alan Turing's morphogenetic model between nature and artefacts

The model proposed by Alan Turing (1952) had been initially employed to account for the differentiation of a living being starting from a spherical embryo, by means of two chemical substances, called morphogens, undergoing processes of reaction and diffusion.

This mechanism leads to differentiation through self-organisation, causing symmetry breaking without the action of external forces: it only depends on some irregularities such as the variations in the number of reacting molecules. These fluctuations may give rise to a series of concentration peaks that tend to grow at the expense of their surroundings, thus generating different patterns through time, which can be composed of spots, stripes, maze-like arrangements, but they can also evolve into uniform or oscillatory states.

Therefore, the evolution of the system is stochastic, depending on the initial configuration and on small differences that are capable of leading to considerable variations, according to nonlinear dynamic processes typical of complex systems: in these conditions, making predictions about what will emerge after a certain number of iterations becomes impossible.

We can only describe some features of this development and the results obtained, for example we can observe that the number and dimension of the peaks mainly depend on the diffusion rates of the substances: if they are low, the range of the peaks is short and many little spots are formed, whereas, if they are higher, the range is longer and a few bigger spots are formed. Stripes emerge from the connection of spots that reach saturation.

Actually, these are pre-patterns of concentration, which can regulate many natural phenomena among which the arrangement of specific organs or the pigmentation patterns on some animals, like the spots in leopards or the stripes in zebras (figure 1).

Turing had been fascinated by nature and in particular phyllotaxis since he was a child, but this was not so far from his studies, as he considered nature as cryptography, with a code to be deciphered (Hodges 2015, pp. 19-22). He aimed at accounting for a wide range of natural phenomena that involve the transformation of an initial homogeneous state into a final differentiated one, as he wrote in a letter addressed to the zoologist J. Z. Young in 1950[1]: he was trying to develop a model capable of explaining gastrulation, phyllotaxis, the formation of animal markings, the configuration of structures with a polygonal symmetry (such as flowers and starfish) or even spherical structures such as Radiolaria.

1. The letter can be found in Alan Turing's digital archive: http://www.turingarchive.org/browse.php/K/1/78 (consulted on 16.06.2018 at 21.45).

More recently, other examples depending on a similar process of reaction-diffusion have been found in nature: we can mention, for instance, the mechanism of aggregation of slime moulds in case of starvation, the organisation of ant colonies, or even the appearance of sand ripples (Ball 2015) or of patterns on seashells (Fowler et al. 1992). These processes are similar because they deal with the aggregation of a substance whose quantity grows in some points of space at the expense of the surrounding area.

Thus, abstracting from chemical and biological considerations, the only factor that influences the development of the system is the state of the neighbours, a local interaction that gives rise to a general behaviour: from this point of view, there's no considerable difference between this model and cellular automata, which are based on a set of simple instructions applied to a group of cells, which, starting from a definite initial arrangement and a predetermined rule depending on their neighbours, can take a finite number of states (Gardner 1970, Dewdney 1984, Wolfram 2002).

Moreover, the same mechanism has also become relevant in morphogenetic design and architecture, where a performative and flexible structure can be generated through self-organisation, and in urban studies, as we will see. In all these examples, even small variations in the concentration of given elements (or in the parameters of an algorithm) can lead to different kinds of stochastic equilibrium, thus to a wide range of shapes evolving through time.

Figure 1. Above: some of the possible patterns generated by adjusting the diffusion rates (D_a and D_b) of the two morphogens according to Alan Turing's model.
Below: simulations of processes of reaction-diffusion based on the same model, leading to results that are really close to patterns observed on the furs of some animals like leopards and giraffes.
These simulations have been created with the program "Ready" (see https://github.com/GollyGang/ready, last accessed 2018/07/01), by changing the diffusion rates at the beginning of each process or after a certain number of iterations (i). The reaction rate (k) remains constant.
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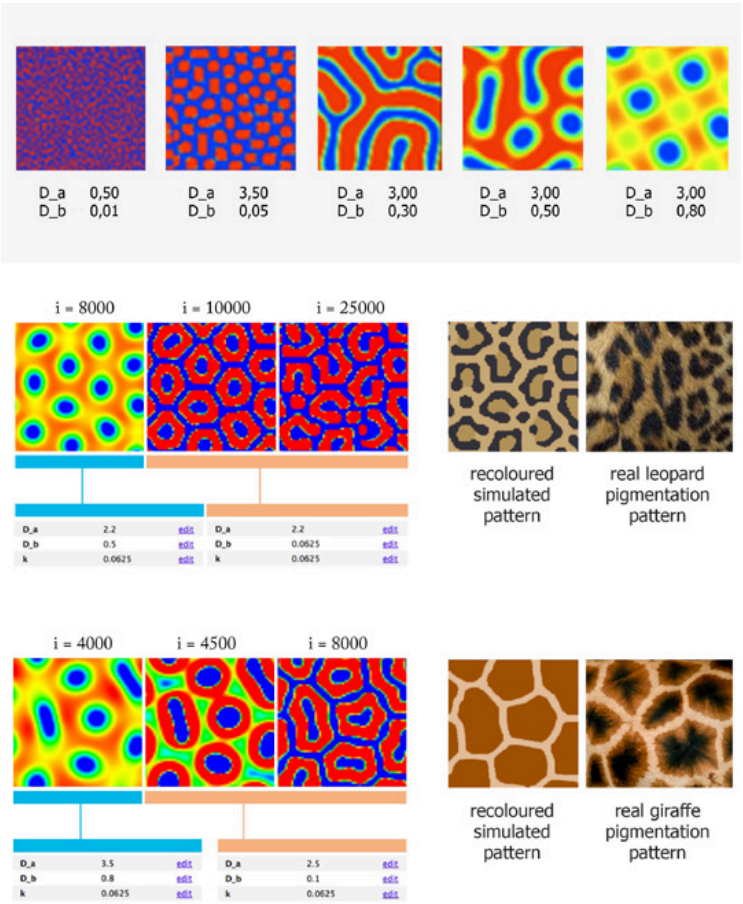


Morphogenesis in Urban Studies

As far as cities and settlement processes are concerned, the interaction between the morphogens is replaced by the interplay of the economic, political, cultural, geographical forces involved (Allen and Sanglier 2010), giving rise to forms considered as temporary arrangements in a dynamic system. Thus, albeit sufficiently persistent to be recognisable (Pumain 1998), they are just "a step in a running morphogenesis process" (Courtat, Gloaguen and Douady 2011).

These studies recall Christopher Alexander's approach not only in relation to design intended as a process to display "new physical order" (Alexander 1973), but also – and even more – with regard to his observations about the interaction between centres (Alexander 2002) that compose "a system of noticeable parts" arranged "according to the position and intensity" of the surrounding ones.

Cities can be compared to organisms because of the relationship between their physical

shape and the forces that continuously generate and adjust them. Thus, a morphogenetic point of view can be useful to account for this mechanism that "can produce qualitative change stemming from small quantitative variations in some parameter values" (Pumain 1998). The evolution of a city can be described through morphogenetic models or cellular automata by associating a different value (0 or 1) to the presence or absence of each considered force. Such a system, therefore, may develop in different directions and is not the result of optimisation towards a clear purpose. The exploration of eidetic categories conveyed by these stochastic models is the aim of several studies that often compare urban expansion, physical models and individual decisions in their ability to give rise to a recognisable global behaviour.

These theories, which include in models their past dynamics, are confirmed as far as they allow the simulations of particular and actual kinds of evolution and to explore the possible futures.

According to Denise Pumain, self-organisation can only be a partial and temporary geographical theory, that should also include the study of the relationships between individual behaviours and consequent spatial variations (Pumain 1998).

Self-organisation is also at the centre of the model drawn up by Peter Allen and Michèle Sanglier, that connects the distribution of people in a region to the occupation pattern (Allen and Sanglier 2010).

Following on from the Central Place theory, it explains the relations between centres in terms of economic functions, but it differs from that because it excludes any "optimising influence".

Besides this, it is not limited to the description of a region already filled with centres of different sizes, which can be modified only from a quantitative point of view, but it studies the structural stability as a phase of an evolution that can bring about discontinuous qualitative changes, thus combining deterministic and stochastic elements.

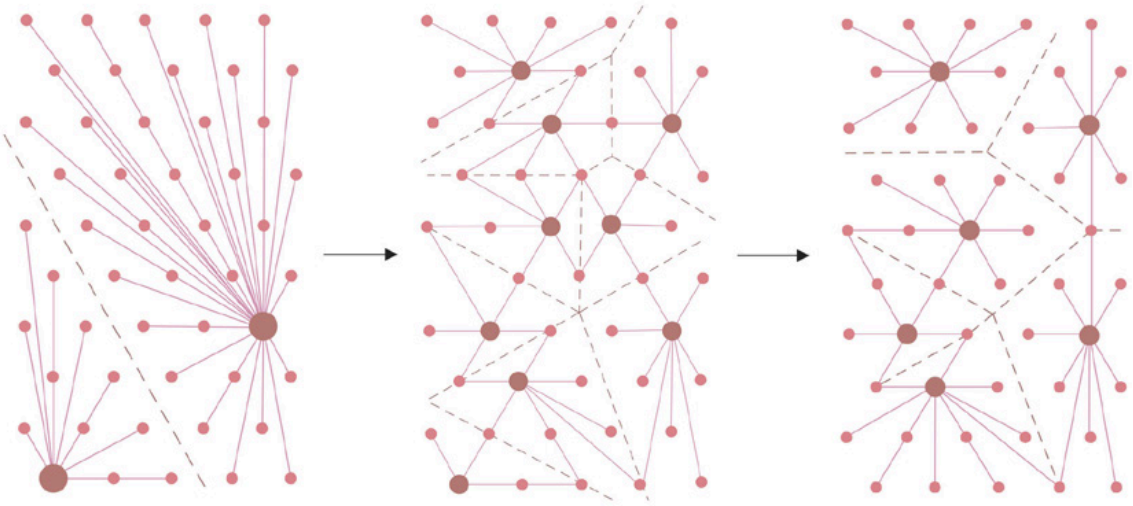
This model, where settlements can grow or shrink according to the economic functions located at each centre, is based on a reciprocal interaction: on the one hand, the occupation pattern is adjusted according to population; on the other hand, population moves depending on job opportunities, generating a positive feedback, as happens in Alan Turing's model.

The simulations thus generated show a hierarchy of urban centres (figure 2), but they are only a few examples among all the possible arrangements temporarily reached by the dynamic system, starting from settlements of equal dimensions, which can be useful in order to consider the consequences of an infrastructural decision.

The same dynamic emerging from the opposition between different forces has also been found inside a city: in particular, three elements seem relevant in this mechanism: an organisational centre, which is the origin of attractiveness; spatial interaction schemes that allow the passage from the micro-geographic level to the structure of the spatial organisation of the city; a dynamic model of space shaped by morphogenetic gradients that differentiate the internal space of the cities (Desmarais 1998).

In order to represent the spatial development of cities, cellular automata and fractals, among other concepts, have been widely employed: the former use local interactions to bring out urban morphologies over time; the latter represent self-similar city structures at various scales. If applied simultaneously, these approaches combine a dynamic structure, given by cellular automata, to a development along particular directions, given by fractals. Therefore, they have been employed to study the effects of urban growth in order to avoid, on the one hand, the excessive fragmentation of the territory and, on the other hand, the compactness of a city surrounded by green belts (Frankhauser et al. 2007): this results in a strategy that does not totally reject sprawl, but aims at canalising it better, integrating the social demand in a way that is reminiscent of the "Five Fingers Plan" for Copenhagen (1949) by the Dansk Byplanlaboratorium led by the architect Steen Eiler Rasmussen.

Figure 2. Two states in the evolution of a group of cities according to Allen and Sanglier. The circles represent the human settlements which can grow or shrink according to the economic functions located at each centre.
These simulations show a hierarchy of urban centres, but they are only a few examples among all the possible arrangements temporarily reached by the dynamic system, starting from settlements of equal dimensions. Reworking by Irene Cazzaro.



A dynamic similar to the one observed in cellular automata can also be seen in models of urban growth in which people settle in a space considered as a two-dimensional grid. In the model developed by Geoffrey Caruso together with other researchers, a series of individual decisions, which is a form of self-organisation, is responsible for the pattern of growth and the transformation of each cell of the grid into a built or green area, or even a space crossed by the road network (Caruso et al. 2010).

By making some simulations and varying the residential preferences, it can be observed that the results are similar to those of the DBM (Dielectric Breakdown Model), which studies the patterns originated from electric discharges. In both models, the probability of a point of being added to an already created network is given by the relationship between its potential and that of the surrounding areas (figure 3).

However, the link between the functioning of such a system, capable of generating only connected aggregates, and the decisions of urban agents (residents, planners, …) would be too weak to account for sprawl. This is why it has been proposed to apply the DBM-like model to road networks, while buildings can follow it to a lesser extent.

Here the decisions of urban agents come into play, according to micro-economic principles based on two opposing forces: an attraction force, more localised, that favours the growth of the edges and a force of interaction at a greater distance that inhibits development where the population density is too high.

This process stops when the utility in one area of the city equals that of any external zone.

Even the French researchers Courtat, Gloaguen and Douady, who deal with complex systems, start from the observation that every particular form of a city is part of a continuous morphogenesis process that none of the traditional models has managed to analyse at a global level, taking into account at the same time the geometrical, functional and dynamic aspects (Courtat, Gloaguen, and Douady 2011).

Their aim is to go beyond relational models based on cellular automata or fractals and make them correspond to a map. For this reason stochastic geometry is needed, in particular in the form of tessellations like those of Voronoi, which have given good results in the analysis of the optimisation of road networks. L-systems have also been used to simulate the evolution of the city, but they are relational models too and they do not explain the phenomena that

determine the various changes. It is therefore necessary, according to them, to combine these very different approaches.

Figure 3. (From left to right) The application of an algorithm (L-system) to the simulation of algae, a dielectric breakdown model (DBM) and a step in the development of a city according to urban morphogenesis principles. The global evolution of these models depends on local interactions: each point is determined in relation to the previous state of the system in the point itself and its surroundings, such as in cellular automata. Reworking and composition by Irene Cazzaro.

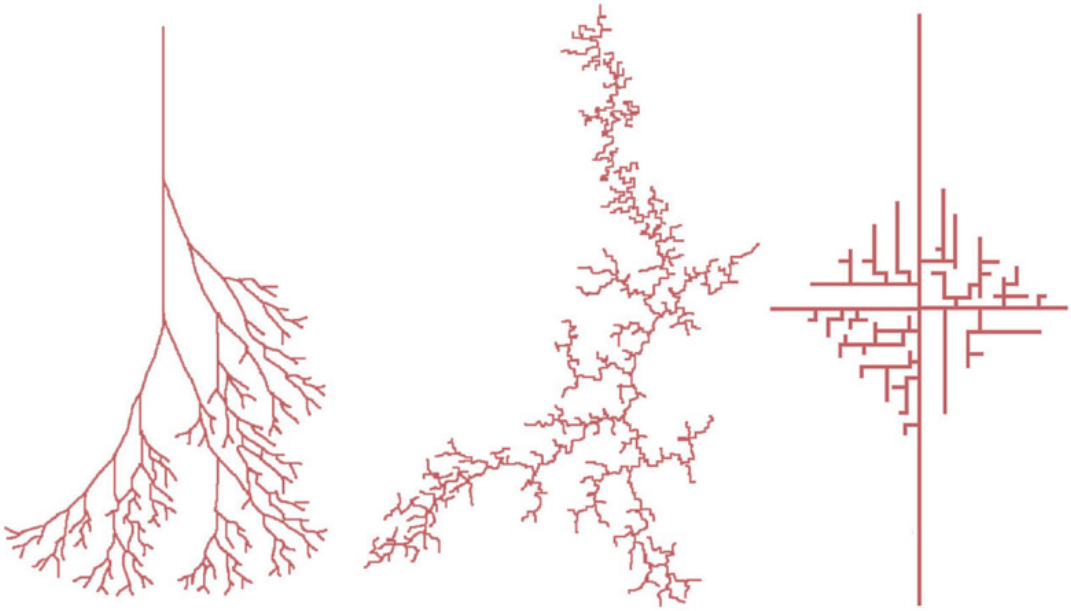


Figure 4. The model of Courtat, Gloaguen and Douady: two algorithms allow the conversion of a map of streets into a general geometric graph that represents a network capable of generating the shape of a city.
These algorithms produce the morphological segmentations of the map and lead to consider the city as the result of a morphogenetic process based on a contradictory duality of extension and division. The function of the system is connected to the structure of the network depending on a catalyst-inhibitor process (Douady et al. 2016).

Indeed, cities cannot just be diagrams. As living organisms, they can come into existence, develop, suffer damage, be healed, in some cases even die. Development depends on internal or external limits and is shaped by local geography. Between the cities, but also within the same city, there can be many differences (just like in living beings), both in the overall form and in the road network (figure 4).

However, the difference in form can be seen as a variation in a coherent global phenomenon. The approach of these researchers, for example, is based on the principle that a city develops by division and extension of space, reconciling topology and geometry of the road network. In this way we can explain, analyse, manipulate its morphogenesis through the modification of some parameters, obtaining a great variety of different results.

In their model, the city is initially seen as a diagram of lines and vertices, then it is lowered into an anisotropic space. Parameters such as the number of settlements, the probability of organisation, the influence and the sprawl are changed in the simulations. In the results we note the dynamic between the extension and the division of space through the development of the streets: they tend to become more and more dense and fragmented in the centre and, at the same time, to expand outwards.

Conclusions

These different models regarding the development of cities clearly illustrate that they are capable of generating shapes and patterns that evolve progressively from a regular space to different steady states. However, we must remember that these models remain "a simplification and an idealisation, and consequently a falsification" (Turing 1952). Besides, they are only some of the possible ways that can be used to account for phenomena that occur in the real world.

Having said this, they can be useful anyway because they help us understand the principles shared by living beings and human artefacts: they emerge and evolve by means of the interplay of forces that give rise to a dynamic system, which can be analysed employing computational and stochastic geometry.

Thus, far from a hylomorphic point of view, these models don't consider form as something imposed by a demiurge to an inert matter, but rather as the result of the action of forces emerging from the matter itself, which becomes an active part of the process.

This is why the importance of morphogenetic models and cellular automata, initially applied to biology and chemistry, then extended to design, architecture and urban development, does not only lie in parametric modelling, but also in the fact that they allow us to explore new eidetic categories, considering the interaction between the objects and their living environments.

Therefore, instead of providing deterministic predictions, they are useful as qualitative explanation tools for both natural processes and urban development: they can show which categories are capable of accounting for particular phenomena, especially when the complexity of the real world challenges our possibility of calculation and imagination.

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Comparative urban/architectural typology of the Central European towns (1867-1918)

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The research period selected for this study is a very interesting and complex era of world history: the study of the towns not only explores the urban types but also discovers the new urban conditions created within the settlements. It points out the (not just territorial) unity-creating nature, indirectly refers to the appearance of urban forms, signifies the dominant urban development forces via urban tissue types. The modernization processes and development of the towns reached their zenith during the era of Austria-Hungary, the urban and architectural pieces dated back to 1867-1918 represent a significant part of today's urban and architectural heritage of the selected towns. The urban tissue typology and urban taxonomy took into account the 70 towns selected carefully for the research to cover the entire territory of the historic Hungary (1867-1918), showing wide range of geomorphological and hydrological character, high variety of evolution intensity and level of territorial development, to show and prove the possibility of urban typology creation based on coordinated attributes and conditions. From an urban heritage, but also a contemporary planning point of view, the town is determined and created by its architecture and urban forms. The urban tissue typology is significant because of the urban context, especially if an existing tissue has to undergo intensification/densification, in which case we have to understand the context in which we are intervening. The current study is going to present the urban development principles of the 1867-1918's period together with the innovative urban morphological methods (integrated urban morphology and urban typology matrix) briefly (created by the author) and their results in the comparative urban theory and history of the territory via selected case studies: Szeged (HU), Subotica (RS), Timisoara (RO). The study is implemented with the 'micro-urbanism' analyses and definition of the phenomena in our case to enhance the close relationship between the built environment (architecture) and the urban structure of the towns.

Introduction

The research period selected for this study is an interesting and complex era of world history: the study of the towns not only explores the urban types but also discovers the new urban conditions created within the settlements. It points out the (not just territorial) unity-creating nature, indirectly refers to the appearance of urban forms, signifies the dominant urban development forces via urban tissue types. The modernization processes and development of the towns reached their zenith during the era of Austria-Hungary, the urban and architectural pieces dated back to 1867-1918 represent a significant part of today's urban and architectural heritage of the selected towns.

The creation of an Austro-Hungarian context, the localization of the similar urban structure and urban tissue patterns was possible via comparison of 10 'Austrian' (in historical context) and 70 'Hungarian' towns. Although the common urban development platform and urban forms recurrent in some of the studied towns, make possible the identification of the urban planning influences and urban planning principles of the period. In order to find the upper mentioned common urban development platform, the urban tissue analyses are supplemented with study of urban planning (town building) theories, practices and principles typical in Central Europe and in Austria-Hungary as well (Stübben, Sitte, Wagner, Palóczi), due to reach more accurate knowledge about the leading urban planning principles, which influenced the urban structure changes of the era.

The urban tissue typology and urban taxonomy took into account the 70 towns selected carefully for the research to cover the entire territory of the historic Hungary (1867-1918), showing wide range of geomorphological and hydrological character, high variety of evolution intensity and level of territorial development, to show and prove the possibility of urban typology creation based on coordinated attributes and conditions. From an urban heritage, but also a contemporary planning point of view, the town is determined and created by its architecture and urban forms. The urban tissue typology is significant because of the urban context, especially if an existing tissue has to undergo intensification/densification, in which case we have to understand the context in which we are intervening.

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Methodology

The urban typology is a taxonomic classification of town types according to urban tissues types, urban tissue combinations and relationships between urban tissues and green spaces, railway lines, thus the urban type is a certain combination of and relationship between urban tissue types. The precondition of urban type taxonomy is the determination of basic urban types (marked with numbers 1-16) together with their specific structural features and urban tissue combinations before 1867 and between 1867 and 1918, and the urban tissue typology[1] (1867-1918).

The resolution of the 70 towns, selected according to precisely defined criteria, to the level of urban fabric and structural characteristics, and their structural and city-scale comparison are the base of the urban typology matrix. The urban typology can be determined by the combination of basic types and urban tissues types (Austro-Hungarian period 1867-1918). The urban tissue type determination is following the steps of the integrated urban morphology

1 The urban tissue type is a certain arrangement of urban elements. It is equal to the morphological region, but more complex, since it takes into account the street network and internal relations as well. The urban tissue types were determined by the integrated urban morphology method and marked with letters in the urban tissue catalogue.

method[2]. The integrated methodology, besides the urban forms, takes into account those historical events, that had influence over shaping the built environment. It applies and combines the Conzenian cognitive morphology and some of the elements of the Caniggia's urban morphological practice, namely the method of understanding the urban forms through the historical processes which generate them.

In the urban typology matrix, the combinations of numbers (basic types) and letters (urban tissues between 1867 and 1918), as the relevant (characteristic) elements of the urban types creates a line of combinations, similar to the result of a mathematical matrix. The urban typology, as well as the urban tissue typology, does not take into minor differences insignificant for the classification but focuses on dominant characteristics.

Based on the urban typology matrix combinations, we can distinguish nine urban type groups, which have unique characteristics. The typology can be performed not only in the seventy selected towns but also in other cities in Central Europe if the preconditions are fulfilled (urban tissue type and basic urban type classification). The types are divided into subgroups in some cases, which differ only at the level of one urban tissue type.

Forming process

The comparison takes the main urban identity-shaping urban forms and relationships into account, which created the specific character of the town and its identity in the research period. Beyond the phenomena of the Austro-Hungarian Monarchy, we could refer to is as Central-Europe[3]. Analysing the transformation of the Central European towns from the middle of the 19th century until the early 20th century, similar features and significant differences could be discovered in most of the studied towns. The background of the modernization was the same progress of development, the same political and economic structure. The similar town planning principles influenced the urban planning in Austria-Hungary directly by the theories and practices of Josef Stübben, Camillo Sitte and Otto Wagner or indirectly by their followers (Antal Palóczi) and students, who admitted the principles and used in their planning principles. However, the "by the 19th century ended the era of large-scale urban transformations. The beginning of the century new ideas, new movement were born by the strengthening middle class" (Moravánszky, 1998, p. 57). The progressive urban development of the second part of the 19th century was the manifestation and consequence of the industrialization and the new socio-economical and political status. The analyses of urban tissue types and urban types highlighted that the urban development, which began in the second part of the 19th century and reached its peak-point at the turn of the century and beginning of the 20th, was present more intensively in the central and Southern areas of that time Hungary comparing to the urban centres of Northern areas (mainly medieval and renaissance architecture) and the border-areas of Transylvania.

Urban typology – case studies

Szeged (Hungary) went through drastic urban reconstruction after the flood in 1879 by following the contemporary urban planning principles (1867-1918), which led to complete transformation of the urban fabric. The road system was designed likely to the capitals[4]: a central street system with two ring roads and connecting radial roads. The urban-type (N°4: Towns with more ring and radial roads- total or partial transformation) is characterized by regular simple tissue (the grid is created by intersecting radial roads and rings), radial roads and inner and outer ring roads. Real ring roads have not only representative function but were constructed due to satisfy the demands of the increasing transport and infrastructural changes. The urban-forming force of the river is significant (besides the ruinous flooding) since it determines the elongation direction of the urban structure along the river bank. The

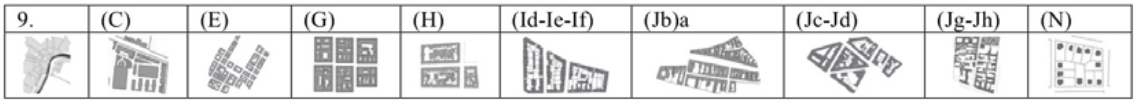
2 The detailed description is in the Author's PhD dissertation: *Urban Tissue Typology and Urban Typology. Typo-morphology of the Cities in the Historic Hungary (1867-1918)*.

3 According to Moravánszky, both of the historians, Péter Hanák and Szűcs Jenő formulated those factors, which are dividing the three sections (East, Central, West) of Europe. These factors could be the distinctive similarities in e.g. urbanization, modernization as well.

4 Budapest and Vienna

central axis of the town is defined by the bridge, the urban structure with radial roads and ring are almost symmetrically established to south-west and north-west from the axis. The river determinates the development direction and create a unique cohesion between the built environment and the riverbank, an example among the studied towns that the riverside host representative buildings.

Figure 1. Urban type N°4: Towns with more ring and radial roads- total or partial transformation (urban typology matrix).



The urban development path of Temesvár (Timişoara, nowadays in Romania) shows similarities to Szeged (ring roads, radial roads), although the dimensions were greater, supporting the metropolis idea[5]. The town "developed into "metropolises of the province" in the second half of the nineteenth and especially at the beginning of the twentieth century as a result of ongoing urban development and general process of "modernization"." (Blau-Platzer, 1999, p. 154). Timişoara belongs to the urban type group N°5: towns with radial road or/and ring road, which town core undergone structural and architectural transformation. In case of the towns in the group the ring road is not geometrically regular, although it could be a full circle or partly constructed road (the rest of the sections may correspond to the interconnecting streets or the ring road entrances to the squares and the continuity ceased completely); during the development and spreading of the town, the roads were constructed at the site of the (fully or partially) dismantled defence walls, or in development areas with lack of town walls and free space (glacis); in most of the cases the radial roads connect the city core with the railway station.

Among the representatives of the urban type group, Timişoara is a special case, since if we consider the proposes of the urban regulation plan (the end of the 19th century and the beginning of the 20th century), then the town could be a member of the urban type group N°4.

Although the urban development solutions have not been fully implemented, the lines of the ring roads (the outer road and the inner one around the citadel) can be observed, but the system of the street network is fairly regular and this characteristic determines the classification of the town among the type groups.

The urban planning ideas were limited by the citadel (Cetate), it blocked the continuous spreading of the town and a double nuclei town emerged with the Cetate in the axial centre. At the turn of the 19th and 20th centuries, the urban planning was intended to ensure a unified townscape and to create new urban fabric and structures which, in addition to the preservation of the citadel, also integrate it into a unified structure of the town. The urban development process was indirectly influenced by Budapest, since the urban planners, worked on the town regulations came from the capital. "The Budapest architect Lajos Ybl was consulted in the general planning. Ybl (…) was familiar with the various planning models of the time, preferring Otto Wagner's proposal to that of Camilo Sitte." (Blau-Platzer, 1999, p. 155). Although Ybl's plan clearly followed the modern town idea of Wagner with rectangular blocks and gridiron street network[6], his plan was not adapted entirely. The final plan in 1911 was a mixed version of Ybl's strict regular system and the urban plan by László Szesztay, who proposed a continuous green belt, kept the town core (citadel) in original form and took into account the previous proposals addressed to the urban development of the glacis and the ring roads. Szesztay's urban expansion plan was elaborated by Emil Szilárd, city chief engineer and József Bríger, urban engineer. The final plan divided the town into two zones, developed the block system and the streets where houses supposed to have front yards, a

5 "Timişoara, the metropolis that never was, is a powerfully illustrative of Austria-Hungary's belated attempt to catch up with the industrial revolution and to fabricate and "regulate" a great city almost from scratch" (Blau-Platzer, 1999, p. 158).

6 According to the map OSZK TM 169, BME UTT, Temesvár városbővítési terve by Lajos Ybl in 1893.

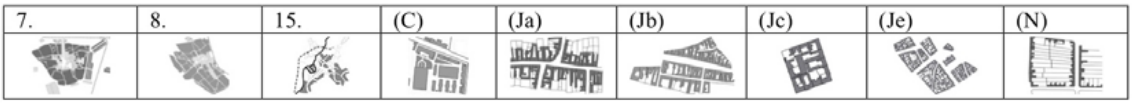
square like avenue was created at the place of the dismantled fortifications.

Figure 2. Urban type N°5: towns with radial road or/and ring road, which town core undergone structural and architectural transformation (urban typology matrix).

The urban transformation of the other towns in Transylvania (Braşov, Cluj Napoca, Oradea), even the ring road idea was adopted from the capital, was more in common with the towns in Transdanubia. In the upper mentioned towns, the defence walls were demolished to use the vacant territory for further urban development, but united ring road system was not built during the research period.

Szabadka (Subotica, nowadays in Serbia) was characterised by its urban polycentrism[7] (multi-nuclei town without ring and radial roads: urban type N°8), which remained visible after the regulation of the street network as well and the transition between the sections are smoother and result of the multi-ethnic structure of the town, although its role within the group was de-emphasized. Although Subotica is a multi-nuclei town, it belongs to the urban type N°2: regulated towns, with extended urban tissue transformation in the central areas, with infill into un-built areas. The urban transformation between 1867 and 1918 focused on the central areas, especially to the main square (former market square) and surrounding. Regulations were not followed by rearrangement of plots at all or just in limited territories (the original structure of the plots remained). Most of the cities in this group are located in a lowland area, the presence of the railway line has an impact on their urban evolution and development dynamics, thus the railway station and the central area are connected by a street (the road is not necessarily determinative, since it is not in every town). As a result of the regulation, the watercourses of the towns were regulated or covered and the swampy areas were dried off to get rid of the epidemics and to gain valuable construction sites. The urban core of Subotica partly kept the original plot structures, but the street network was regulated and the newly built areas were dominated by the orthogonal network (elongated rectangular urban locks enclosed by streets). The districts, placed outside of the central area, were constructed according to the orthogonal planning principles.

Figure 3. Urban type N°2: regulated towns, with extended urban tissue transformation in the central areas, with infill into un-built areas (urban typology matrix).



Mutual urban tissue types in Timişoara-Szeged-Subotica:

(Ed) - Regular street grid (gridiron system), widening of the street takes a function as a gate that leads to the square. The buildings are palaces and public buildings that completely fill the regular rectangular plot on which each of the buildings stand. Inside the buildings are inner courtyards (patios), the dimensions of the buildings are in harmony with the dimensions of the inner courtyards, which are located in the approximate centre of the layout. Towns: Rijeka, HR; Szeged, HU; Timişoara, RO; Oradea, RO; Bratislava, SK; Győr, HU; Debrecen, HU; Budapest, HU;

(G) Regular street grid (gridiron system). The buildings are rental palaces and public buildings, and fill entirely the plots, double/triple plot series create a block. The width of the plots is the same, development is in unbroken rows. The façade of the building on the edge of block is perpendicular to the other façade. Inside the buildings are inner courtyards (patios),

7 Timişoara is considered as a multi-nuclei town.

the dimensions of the buildings are in harmony with the dimensions of the inner courtyards, which are located in the approximate centre of the layout. Characteristic to Timişoara, RO and Budapest, HU, as well as to Szeged, HU. In Budapest the urban block (enclosed by streets) can be formed by single plot series (rectangular or triangular urban blocks).

(If) The urban tissue is created by regular or semi-regular rectangular blocks; the street network is regular gridiron system. The plots partially kept their original (pre-regulation) variations. Blocks with broken building lines, the openings are on their short sides, mixed type block structures (buildings with wings, without wings and detached buildings). The courtyard is connected, although the inner courtyards are for private use with some exceptions (semi-public spaces), the attached buildings could be seen as wings. Towns: Szeged, HU; Timişoara, RO; Satu Mare, RO; Osijek, HR; Sombor, RS; Győr, HU; Szolnok, HU;

(Jc) Regular road lines, the blocks are surrounded by gridiron street network. The blocks are rectangular, the buildings with both-side wings dominate within the borders of the plot-series. The plots have same dimensions in the urban block, but the placement of the buildings are different, the inner courtyard is attached to each building, but most of the cases the groups of backyard separated from each other by back and side wings. Possible block shape can be triangular as well. Towns: Subotica, RS; Pančevo, RS; Szeged, HU; Novi Sad, RS; Arad, RO; Timişoara, RO; Oradea, RO; Székesfehérvár, HU; Cluj Napoca, RO; Sopron, HU (triangular); Bratislava, HU; Hódmezővásárhely, HU; Gherla, RO; Osijek, HR; Sombor, RS; Győr, HU; Esztergom, HU; Szolnok, HU; Debrecen, HU; Budapest, HU;

(Je) Perimeter buildings (with side wings) with gateways as accesses into the block interiors, connected by cross passage houses; joined groups of backyard separated from each other by the wings of the blocks. The plots partly kept their original (pre/regulation) shape and arrangement, together with the buildings, are creating a dense built-up area, where the public buildings are dominating, typical for the central area of town in lower altitudes. The street network is partly regular with dominant roads and streets which follow their pre-regulation line. Development in unbroken row with accentuated gaps (vacant lots). Towns: Subotica, RS; Senta, RS (in some details); Vršac, RS; Pančevo, RS; Zrenjanin, RS; Kecskemét; HU; Baja, HU; Miskolc, HU; Munkachevo, UA; Timişoara, RO; Novi Sad, RS; Târgu Mureş, RO; Hódmezővásárhely, HU (regular street network, more regular plots); Osijek, HR; Sombor, RS; Debrecen, HU;

(Nd) The urban tissue is characterized by regular gridiron street network which enclosing the regular blocks. Shape of the blocks are elongated regular rectangular, separated into two parts (yard and garden), development in unbroken rows, one or two story buildings. Towns: Kaposvár, HU; Szeged, HU; Arad, RO; Munkachevo, UA; Miskolc, HU; Timişoara, RO; Szombathely, HU; Hódmezővásárhely, HU;

Townscape in the Central-European towns

"In Western Europe the advanced capitalism was the engine of the radical urban transformation. However, in Central Europe, the economical and political conditions differ from the Western European ones, which resulted in only a partial renewal of urban development. The modernization generally did not bring any fundamental structural transformation [in most of the cases actually not, but in numerous cases of the studied towns, structural transformation can be experienced – É.L.], but rather by takeover of symbols of modernism. The end of the 19th century was different from the earlier period by the fact that it was fully imbued with its own sense of modernity" (Moravánszky, 1998, p. 63).

The "collage nature" of each town allowed to examine the forms of urban areas and the whole structure has been read as a whole. The similar spatial arrangement of the forms, similarities in the built environment serve as an evidence to evaluate the towns in pursuance of similar criteria. The towns of the studied period reflect the territorial diversity of geographical and hydrographic characteristics, and through these towns, the historical inclination that prevented them from establishing a unified and distinctive urban structure and townscape typical in its unified nature for the former Transleithan territories can be shown. The townscape changes can be followed as specific imprints of a certain time period. In case of the monarchist towns, similar townscape characters have evolved and specific combination of structure and built environment, urban ensembles (micro-urbanism).

Figure 4. Micro-urbanism. Urban tissue type 'G' and 'If' with the built environment (Szeged, HU and Timişoara, RO – source: Fortepan, Magyar Földrajzi Múzeum Erdélyi Mór Cége, 1904).

At this period, a certain degree of universalisation began, which mingled with the local character/elements and the traditional built environment, due architects who were working in the territory of the Austro-Hungarian Empire and the urban regulation challenges of modernizing towns. The style movements, that were applied in the town, was spread quickly in other towns, because often those engineers[8] worked in other towns who designed buildings in the capital. Partial universalisation of the townscape became inevitable. The era was marked by the rapid alternation of architectural styles. The typical historicism ('neo' styles), according to Moravánszky (Moravanszky, 1995, p.14.), is the *Amtsprache* (formal language) of urbanization in Central Europe.

Conclusion

The identity of the town, the urban structure with the combination of townscape has the highest degree in urban physical and aesthetical quality and perception of the town itself: a specific semantic domain in architecture and urban design. The creation of an Austro-Hungarian context, the localization of the similar urban structure and urban tissue patterns was possible via comparison of 10 'Austrian' (in historical context) and 70 'Hungarian' towns. Although the common urban development platform and urban forms recurrent in some of the studied towns, make possible the identification of the urban planning influences and urban planning principles of the period. In order to find the upper mentioned common urban development platform, the urban tissue analyses are supplemented with study of urban planning (town building) theories, practices and principles typical in Central Europe and in Austria-Hungary as well (Stübben, Sitte, Wagner, Palóczi), due to reach more accurate knowledge about the leading urban planning principles, which influenced the urban structure changes of the era. The supplementary research based on micro-urbanism leads to the understanding of the townscape as it is based on the relationship between the urban structure (urban tissues) and the architecture. In the very period, besides the certain degree of universalisation of the townscape and the repeated micro-urbanism character of the towns, the urban interaction of the inherited built environment depends on the symmetry/ balance between the traditional and modern, and a certain rhythm in some elements, but

8 The imperial architects, like Atelier Fellner & Helmer, Ferenc Pfaff, Alajos Hauszmann have been designed their (mainly) public building not only in Budapest and Vienna, but shaped the built environment of the other, smaller towns in Austria-Hungary.

the most important issue is the question of the governing proportional relationships between the components. The identity of the town, the urban structure with combination of townscape has the highest degree in urban physical and aesthetical quality and perception of the town itself: a specific semantic domain in architecture and urban design.

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Compose with the fragments

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The current urban scenario is imaginable as a continuous construction site in which both the contemporaneity of the construction and the historical time of destruction coexist in a simultaneous and conflicting manner; the ruins of yesterday but mainly the debris of today are no longer exceptional episodes in the urban fabric but are now the recognizable and structuring features of the city: on one side there is a whole series of unfinished and abandoned fragments, that is the waste of the city that is built (or tries to do so), while on the other hand there is the historical ruin of the city identified in archaeological sites, in the ruins of historical monuments or in the buildings of Late Modern Period.

In this contests it is still necessary the distinction formulated by Francesco Dal Co among the restorers, only guardians of the knowledge of some techniques able to scientifically solve the conflicts that every intervention of recovery involves, and 'creative' architects?. Observing the other artistic disciplines, music for example, it is easy to realize how in the reinterpretation of a preexistent song, the remix, the shape and the 'aura' of the original can be modified with growing level of alteration that, progressively, raises critics on the identification of the work and its authoriality.

This sort of operation, just like many other actions belonging to other cultural environments in which elements coming from different sources blend together, where the new coexists with the ancient, forms a kind of tie, a cultural glue, a virus, that informs and supports contemporary culture.

Introduction

Densities and rarefactions of complex spatiality, like constellations of different forms, unfold over the contemporary city which becomes an open structure in continuous evolution. The chaos of autonomous areas (infrastructures, functional territorial clots) makes difficult the intelligibility of each and their general meaning. Disused factories, hypermarkets, incoherent buildings, infrastructural spaces seem to be condemned to recite a script that has never been written. In this context, the actions of re-composition, which obviously cannot rely on the simplification of an entire cancellation and therefore a new beginning of composition, must deal with what they find in the field by constructing overlaps and overwriting. Faced with this scenario, it is evident the need to redefine settlement criteria that are no longer based on the tabula rasa, but on the need to recover the existing, the remains and discards, as well as the fragments of a new 're-compositive' geography, that can configure new space systems. Renato Bocchi suggests the search for re-compositional strategies in which fragments become the significant elements of a landscape-discourse to be over-written in the space-time of places that today appear rejected (Bocchi, 2013). In this context, the existing becomes the 'variation on the theme' of new settlement principles that, in the face of the dissolution of the order of history, can bring out a new order by exploiting the opportunities for enhancing the pervasive fluid of the postmodernity junkspace.

Methodology

To the extemporaneity and the excess of the shapes that characterize contemporary architectural production, we add an urban and territorial reality characterized by a scenario defined by Augè as a continuous construction site in which the contemporaneity of construction and the historical time of destruction coexist in a simultaneous and conflicting way. The ruins of yesterday, but above all the ruins of today are no longer exceptional episodes in the urban fabric because they are now the recognizable and structuring features of the city. The idea of an idealizable city as an immense ruin, where the different levels of abandonment coexist and seek a relationship with the rest, generates a contradiction due precisely to the complexity and differences belonging to the parts that compose it. If on the one hand there is a series of unfinished and abandoned fragments, being the waste of the city that is built in the moment (or its attempt), on the other there is the ruin of the city of history identified in archaeological sites, in the ruins of historical monuments or in the buildings of Late Modern period. The interaction of historical ruins, contemporary debris and formal exceptionality, dissolved in the various declinations of continuous residual fluid - "nonluoghi", "terzo paesaggio", "junkspace" - forces us to search for tools and design actions able to recognize the positive potential of the fragment, of the rejection, of the waste and even the of the monument as if we were in an immense ruin to use, on which accumulate, overwrite the changing text of the city, exploit the error, the lack, the fragment, the inconvenience. The city is seen as the place of the praise of the fragment, where time must necessarily be "indispensable material of the project" (Di Domenico, 2014). Faced with this scenario, the need to redefine settlement criteria that are no longer based on the tabula rasa with a compositional action is evident; instead there is the need to develop re-composition principles that consider the existing, the remains and the waste, like the fragments of a new geography of the reuse where the space for the architectural design of the new century can be found. What we can do, Bocchi suggests, "[...] is to design a process (with all possible variability and adaptability) that constructs (spatio-temporal) relationships between those discarded fragments: a Dadaist Merzbau as Schwitters, rather than a cubist painting, where a re-compositional method is preferred to a dismantled method, where the becoming and therefore the temporal dynamics, the change, is carefully considered and incorporated and yet not so much in an "analytic" function but more properly in function "projective", "design" "(Bocchi 2013).

Essentially, it is necessary to search for a method that not only has the purpose of dissolving the traditional order of history, transforming it into a chaotic cluster of unrelated fragments, but that also arises a new order from these fragments; take those fragments, those scraps, those

ruins and give them meaning by exploiting the opportunities for enhancing the pervasive fluid of the post-modern "junkspace".

Forming process

According to Luciano Semerani, in the contemporary architectural scene, we can no longer talk of composition for the works of architects such as Bernard Tshumi, Rem Koolhaas, Elia Zenghelis, Zaha Hadid (representatives of second generation postmodern architects), intent on confronting the 'dissonance' of objects (the bigness) and, in general, with the dissolution of the urban form. The architectural star-system does not have time to insert itself into a disciplinary able to relate the different design experiences in a mutual relation, but it is focused on using in its favor the "common inventions" with which to meet the commercial and communication needs that the market requires (Semerani, 2010).

However, the definition of a fragment poetics has always characterized the research of many architects and is at the basis of contemporary compositional strategies of different disciplinary fields. Aldo Rossi uses elements from the repertoire of personal experience in a game of continuous overlapping between experience and memory by designing an imaginary city composed of the collage of projects, images and places he loves; he calls it *Città Analoga*, remembering with this title the combination of desire, dream and reason present in every authentic architectural project, "[...] my most important formal education was the observation of things; then the observation turned into a memory of these things. Now I think I see them all arranged like utensils in a front row; aligned as in an herbarium, in a list, in a dictionary "(Rossi, 1990).

Not too differently, we can trace a new strategy of relationship between fragments and juxtaposed parts also in the modern transposition of the Piranesian views in their meeting point with the generic city of Koohlaas' trash space; a montage, a new art capable of making things and images, even dissonant, coexist without a chronological or dimensional order, but which finds its consistency and its harmonic form in the simultaneous and constantly changing presence of different elements, "[...] a palimpsest on which it continually cancels and rewrites itself but on which traces remain to build a continuity: traces of culture, geo-archaeological layers (even of an archeology of the contemporary) that represent our heritage for good or for evil "(Bocchi, 2013). Strategies capable of unprecedented narrative sequences that base the foundations on the multidisciplinary suggestions of Western culture, in which elements from different sources come together seeking a new meaning, where the new coexists with the ancient to the discovery of a new type of binder, a cultural glue, a virus, capable of informing and supporting all our contemporary culture; I refer, for example, to the analogy that Giovanni Cianci describes between the instantaneous flow of Joycian writing and Futurist painting, "in the impossibility of distinguishing interiority from exteriority - writes Cianci - the inside from the outside, the meanders of the soul are often found to coincide with the same labyrinthine itineraries of the metropolis "(Cianci 1974); and furthermore, the exaltation of dissonance where one can continually search for variations, anomalies, grammatical imperfections which, though minimal, represent in time a guarantee of the uncertainty of imperfection in which it is right to provoke the error, the stretch marks, the grammatical discrepancies from which it re-generates unity and uniqueness. Moreover, the need for the construction of a "harmony" through the skillful control of the anomaly or dissonance is already formulated by Plotinus, "[...] the battle of the disunited things comes from the only rational design of the world: for knowledge, it would be preferable to compare the rational design of the world to the harmony that results from dissonances and to research why dissonances fall within the laws of harmony "(Plotinus, Enneade, III, 2, 16). As well as in the introduction of the 'non-harmonic', on which serial music is based, Arnold Schonberg who developed the principles of dodecaphony that he named "the emancipation of dissonance", affirmed that dissonances cannot be considered an exception, but logical and linguistic elements of new structures capable of living an existence of their own without the need to refer to yesterday's prototypes (Schonberg, 1911).

Continuing in the analogy of the compositional processes linked to the logic of the fragment, it may be useful to reread the definition of "concrete music" elaborated in 1948 by

the musical engineer Pierre Schaeffer according to which composing with the fragments refers to a reverse procedure compared to the traditional one in which the music was conceived and written according to predetermined theories. In the composition of traditional music, the starting point was represented by an idea, then it passed to its expression and finally to its execution in a path that led to abstract realization from abstract thought.

In the "concrete music" the procedure is inverse: from the real sounds one arrives, through experimentation, to the composition of a piece. A fundamental criterion is the confrontation with everything that exists, with every kind of sound or noise, substituting sound objects for musical notes, with a procedure similar to the collage technique.

At the purely architectural scale, the poetics of the caesura, of the fragment, becomes a food for thought around which to develop another possible reading: in the work of Carlo Scarpa, for example, the use of light is aimed at dematerializing some elements in so that the accent falls on others; the action of opposing pairs aimed at breaking the linearity, exalts the attention towards the exaltation of contrasts. Scarpa is attentive to the effects of light / shadow and large / small to control the perception of the visual space, models the materials to direct the light through the space, studies the surfaces, the chromatic response of the various materials, experiments new finishes.

In a strictly compositional context, composing with the fragments translates into the search for strategies and figural systems that is divided into conflicting and non-linear directions, where the individuality of the figures no longer follows structural compositional hierarchies but is based on re-compositional logic that produce new complex and uncertain principles of order. The resulting form is the product of a concatenation of autonomous elements that do not recognize themselves in a total synthesis but retain their recognizability in a context in which different parts coexist, "everything is born as a fragment, grows as a fragment, transforms itself as fragment, changes its organic and formal condition as a fragment; the fragments are added, increased, they proliferate and give rise to other fragments or to other larger or smaller fragment portions. [...] The momentary nature and the ephemerality of the fragment are such that it is not allowed to constitute itself as a totality in their sum. The work, in this case, is nothing more than an addition of fragments that are transformed, that grow, that are flanked, that diminish, that disappear, that resuscitate [...] "(Donatoni 1982).

The architecture no longer follows the compositional logic based on pre-established settlement, typological and formal rules, as was the case in the tradition, but considers the elements themselves as the founding element of the compositional process.

Conclusion

Compounding, according to the logic of the fragment, therefore means something different from the application of the defensive formulas that have characterized the actions in the different urban areas; in our historical centers, for example, the traditional actions of substitution or of architectural restoration, now appear to be inadequate in terms of the need, on an urban scale, of more complex operations of regeneration of the existing that do not renounce the overwriting of the text, to contrast and which aim higher than the technical drift (which, for example, characterizes the discipline of restoration) in which we witness the coincidence between cognitive action and project. Similarly, in the outlying areas of the city, the re-use action, intended as the will to confirm the dominance of the existing values, clearly prevailed on the possibility of regenerating urban parts with respect of a recycling action in which the existing becomes useful material for a completely renewed project (Bocchi, 2013). The city, in all its parts, needs to define strategies capable of building and grafting relationships with the new signs of tumultuous mutation of the production processes of goods and services of the third city, according to the definition formulated by Giovanni Caudo, in which the project may no longer coincide with increases in quantity but rather with the emergence of a logic of disappearance, or of the demolition of its parts (Caudo, 2013). The starting point of an urban recycling project cannot represent the existing, precisely in those areas where it failed to define or maintain effective spatial configurations. It is necessary to look for new settlement principles that are able to regenerate the physical remains and the traces of the existing system modifying them into something new. To the

clearly defined categories, such as the renovation of buildings or groups of buildings – that aim at giving a new functional and formal content to existing building elements with confirmed and strengthened architectural value - we must replace categories of intervention that they aim at the construction of new urban scenarios through processes of building replacement that involve the demolition and reconstruction of those buildings that have exhausted their life cycle to allow the urban fabric to regenerate. According to this approach, the existing becomes an element, not necessarily foundational, that participates in the definition of a new urban system. But in order to do this it is necessary to evaluate what is appropriate to maintain. Vittorio Gregotti states that it is urgent to reflect on the definition of a theory of destruction in order to lay the groundwork for a correction of errors made in the past (Pedretti, 1997). The need for a theory that can orientate and regulate demolition operations is already traceable in the 2008 Venice Biennale in which Koolhaas, in the Preservation section, develops an argument on conservation issues; Koolhaas manifests the need for a map of the destructions on which to develop a thought towards the materials of the present and the remains of the past that today are in a state of abandonment. Koolhaas elaborates a reflection that recalls the need to overcome the dogma of considering the past as the only plan for the future and formulates a list of criteria that do not exclusively indicate what should be preserved but what should be demolished. A sort of reflective genesis on the judgment that regulates the demolition processes (often random and arbitrary) that compensates the already consolidated literature and culture of protection and conservation (Menzietti, 2017). According to this concept, extrapolating the different levels of abandonment from their conditions of use and context, for which they were conceived, allows to bring the existing to a condition of formal resetting, but also of disuse and discomfort, which makes possible the re-appropriation, the re-adaptation or the elimination of what remains. If the architecture in use sees the new project as belonging into a logic of functional implementation of the existing, the strategy of recycling can create new systems. Following these assumptions, ruins, rubble and fragments from abandoned architecture are reconsidered in a sort of dynamic vision of transformation regardless of historical and artistic judgments, but on the basis of physical consistency and current health conditions.

Figure 1. Markus Scherer, Walter Dietl, restauro del Forte di Fortezza (Bolzano), 2008/2013.

Figure 2. Oma, sede della Fondazione Prada, Milano, 2015/2018.

Figure 3. Carlo Scarpa, Cimitero Brion, l'arcosolium tombale, San Vito di Altivole (Treviso), 1970/75.

Figure 4. OMA, Taipei performing arts center, Taipei, Taiwan 2009.

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Urban morphology and contemporaneity: using contemporary types in typological design

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Traditionally debates on urban morphology and typology rely on a value-oriented approach in which historical types are appreciated, while so-called modern types are criticized and other types (with no definite root in history) are neglected. Contemporary situation of cities, with parameters like the diversity of types, rapid changes according to global dynamics of cities, the iconographic tendency in designing new projects, and functional requirements to design, for example, transportation structures, lead to fast changes which need a special notice through a morphologic and typological lens. This article, by the interpretive approach, reviews fundamental concepts of morphology and typology to find possibilities to make a place for non-historic types in morphological and typological debates. In this regard Fundamental concepts of Quatremere and Laugier is reread (Madrazo 1995), methodological approaches of Muratorian (Cataldi 1998) and Conzenian school (Conzen 1960) is reviewed, dialogues on the need for considering contemporary types are analyzed (Nasser 2013, Scheer 2013), the history of general formal changes of cities through modern and global period is narrated, and finally the functional abilities of some contemporary types are described.

As contemporary types have an ability to be a part of urban systems, and many requirements of systems are adapted to these types according to their repetition in codes and regulations, the article argues choosing timeless point of view to the notion of type, which can be found in fundamental concepts of morphology and typology, can give a place to contemporary types in morphological and typological debates.

Introduction

It can be acceptable which "urban form" as a general term had no meaning in ancient cities. In other word people of the past hardly had any idea about the notion of "urban form". But by contemporary interpretations ancient and traditional urban forms were functionally acceptable, not only for the past, but, more or less, for the contemporary way of life in some scales. Today urban morphology of middle ages, Renaissance, and baroque cities in Europe, and Islamic, Indian and Chinese and East Asian cities before Modern era can be considered as a rich repertoire for architecture and urban planning and design. But it is obvious that there are many enormous changes in the way of life that the method for using best appropriate forms in the urban context can be considered as a matter of thought.

Urban morphology, as a distinct field of knowledge, dealing with urban form, traditionally, focuses on towns and cities with clear historical roots. Oliveira emphasizes the special attention of urban morphologists to the historicity of urban form but at the same time clarifies that there is no commitment for a researcher to be bounded in the historicity of urban morphology and to neglect the contemporary forms (Oliveira 2016).

This article deals with a single question that which bases can be found in concepts of urban morphology to face the study of contemporary urban forms? Responding this question needs a review on classical concepts of urban morphological studies which, here, as two mainstreams of urban morphological studies, Conzenian (Conzen 1960) and Muratorian (Cataldi 1998) concepts are reviewed. As a singular example of contemporary urban form, mutation of urban environment in Tehran, Iran, is described. The process of change in contemporary urban form of Iran during last decades can be seen as a mixture of transformation and mutation of its elements and structure. The result is a kind of form with weak connections to the past. The vast spread of this structure and its elements created an environment with difficulties for haltering the urban form. The forms in different levels of resolution are totally different from the past. Although exploring one city or territory is not enough for founding new formulas, yet it is enough to ask for new tools and techniques. Moreover, we can agree implicitly that similar conditions can be seen in some other places of the world and not only in Iran. Facing this forms based on piecemeal and process methods might be questionable from the very beginning. Here a return to fundamental concepts developed by Quatreme de Quincy (madrazo 1995) considered to be useful, to search for possibilities of fundamental concepts facing contemporary forms.

1- Historicity of urban morphology and the problem of modern discontinuity

Applying historical urban forms in urban planning and design, and in architecture, can be seen as an approach in contrast with rapid urban changes happened during modern period. Ending of 19th century, as Lammpugnani (1985) shows, led to development of reforming acts for ideal concepts of cities. Morphologically the physical results of these reforms are tall buildings, hypermarkets, highways and subways, and new formal expression of monumental buildings. The most influent change has been reversed relation of mass-space which modified spaces from closed polygons surrounded by buildings to a fluid liquid which tall buildings were floated in it (Ostrowski 1970).

Rhetorically, we can use the word "mutation" as a metaphor for this process of change. Naturally a city might transform from one formal condition to another, but through the Modern process the word "mutation" can be used to explain the conversion. This condition spread out of Europe and influenced many other cities like Islamic cities and East Asian ones.

Urban morphology after 60's was a clear effort to retrieving all formal values of pre-industrial urban form. Many elegant works, theoretically and practically, formed by pioneers of urban morphology, like Conzen (1960), and members of Muratorian School (Cataldi 2002). Many projects have been done, mainly in Italy based on morphological concepts.

2-Two main morphological approach and the concept of continuity

the Conzenian (Historio-Geographical) and Muratorian (Process typological) approach

of urban morphology are the mainstreams of this field of knowledge. As a matter of fact both of these approaches have a nature of historicity embedded in them. Conzenian approach, which is fully described in the book *Alnwick, Northumberland a Study of Town-plan Analysis*, shows a chronological approach according to its temporal dimension. Similarly for Muratorian approach Cataldi (1998) shows how Muratori reinterpret the old concepts of Italian architectural design to give the continuity of form to his designs.

Conzen explain his method based on a great notice to what he calls time-section investigation (Conzen 1960: 7). He describes the role of time on the process of change in urban tissues. a town-plan of a settlement can be considered as a record of distinctive material residues and understanding the form of a settlement needs a temporal sequential investigation which reveals the way each period of time embedded its formal components in that town-plan. In the process of change land uses, building fabric, and town plan changes in order of velocity. During this process one distinct area, in a certain period of time, might be representative of all past periods and of the time ongoing change (Conzen 1960).

Although, Conzen considers the role of time in the process of change of urban fabric and, although, he recognizes modern parts of Alnwick as distinctive unit-plans, the nature of the change he describes is totally different with drastic modern changes. Here, there are not "fast and furious" injections of new types, forms, patterns and buildings into urban context of the time. In this regard, piecemeal change is not the matter of modern period, but a rapid beat of "demolition" and "renewal".

The concept of "working history" (or operative history) suggested by Muratori is an implication of the powerful role of historical dimension in the typological process, which is the fundamental framework of Muratorian School (Cataldi 1998). The historical process, based on a definite cultural context, operates on building constructions in cities, delivering constructional traditions from time to time. The concept which contains this deliverance is the main concept of typological process, type. Type, by its essence, can be considered as a priori to a given time and space, rolling on the architectural design process by saving all historical values as a concrete link to the continuous existence of a city (Cataldi 1998).

As Cataldi presents, the concept of working history comes from the critique which Muratori expressed against the Modern movement and its crisis of continuity. The contradiction between typological process and Modern movement can lead to considering Modern movement as a condition of no past, or at its best the birth of new generation of types and forms. The "no past" consideration, in morphological terms, can be interpreted as another denial of history. The second consideration, again in morphological terms, will open a view to a new application of morphological methods on new forms, undeniably, with no past.

3- Modern Mutation of Urban form: the case of Tehran

As many eastern cities, Tehran faced changes forced by foreign relationships during modern era. The industrial revolution of the west led to forced changes in eastern cities to adapt themselves with universal transformations, and Tehran was one of them. During 18th century, Tehran was a small Safavid town with a castle and within its walls. As other traditional Iranian cities Tehran included Arg (the castle), an square (Sabz-e-Meidan) at the southern border of castle, Bazaar which began from the square and ended to one of gates (Southern Gate – darvazeh) and the area between this structure and walls was filled by neighborhoods (Mahalleh). Four gates led people enter and exit the town. Streets and alleys were curvy and like all other towns in Iran. At this time, during Ghajar period (at the end of 18th century) the capital moved from Isfahan to Tehran (Habibi 2006).

The weakness of Iranian economy led to acceptance of foreign presence in political atmosphere of country (Ashraf 1980). During Ghajar period a need to change grew up. The town became a place for meetings and visits of foreigners and the old construct was not responsible for that. The king, Naser-al-din-shah, ordered a great change in town. The walls demolished, Mahallehs multiplied, Straight streets built, and pure traditional building was replaced by eclectic ones, the city expanded and new walls built.

Beginning of east-west challenge had parallel change in kingdom Regime of Iran. Ghajar kingdom was changed by Pahlavi kingdom at 1920. Industrial and capital changes all over

the world made a big tide which took Iran with itself. Foreign actors in internal political environment were still great factors of changes in Iran. Facing World War I, collapse of Ottoman Empire, birth of USSR facing capitalistic approach of western countries, developed a situation for Iran which led to exogenous changes, instead of endogenous development (Katuzian 1992).

Iran faced a universal concept, modernity. The role of the king, Reza shah, was essential to design a process of modernization for country. Nationalizing resources, industrializing processes and nationalizing oil extraction, were symbols of building a national government. The straight influence of this modernization on urban tissue of cities was made by the concept of rejuvenation and westernization of them (Habibi 2006). Based on two main principle of effectiveness and efficiency of modern city (Choay1965) Iranian urban old tissue caused a surgery by insertion of long straight streets. Blocks become rectangular and the central courtyard type changed to a complex one sided bulk type, like European constructions, but surrounded by walls.

These conditions continued during next Pahlavi king's sovereignty. After World War II Iran became more dependant to universal capitalism. Iran became a country with single product economy, oil. Formation of national income from selling oil encouraged the government to use planning tools for country (Habibi 2006). 5 year periodical National Programs and city plans were the main tools of urban planning.

As the first influence of modern planning tools for country, many modern types inserted urban tissue. Modern specific public buildings, building towers, boulevards and highways are samples of this change. 60% north standing bulk was a building type which became a general code not only for cities like Tehran or other large cities but also for all small towns and counties all over the territory. In this period we can see birth of large residential complex with more than 40 concrete towers. Tehran grew rapidly and this growth under new planning tool needed a fast repeating type which the 60% north standing bulk was a good gadget for this rapid growth. The city spread out from all sides.

At 1979 Islamic revolution the regime changed form a parliamentary kingdom to an elective but value oriented system. During the first decade of revolutionary system, a war between Iran and Iraq (the western neighborhood country) many cities demolished. After that a new flow of, we can say, capitalism not as an endogenous phenomenon, but as an internal economical structure (Kamrava 2007) established. Value orientation of the system led to a delay for decision making for many part of governmental hierarchical levels like city planning, so the government continued in administrative organizations of Pahlavi Regime, and continued the model of 5 year periodical National Programs and comprehensive planning of cities.

During this period the country faced the global changes of overall world. During these changes many older concepts of Pahlavi city planning continued their existence in Iranian cities as well as Tehran. The growth of new Iranian capitalism led to birth of new types. Malls and hypermarkets are results of this new condition. The Pahlavi type of 60 % north standing bulk continued to flow in urban growth. Neither administrative in-charges nor individual architects could find a way out of this unwanted iteration of discontinuity. After all these changes Tehran became a place for contemporary types choking its traditional urban patterns. The city became a Gigant with unbalanced organs and due to somehow an adaptation of the concept, considered as a metropolis.

Tehran as a major town started with classic configuration and types. During several years all constructions of town was based on Iranian building traditions. By becoming a capital the first actions of changes happened. But all of them were totally based on building traditions. Traditionally Iranian houses had central courtyards with no opening to alleys (fig.1). The alleys were maze-like strings combined to each other making a traditional hierarchical network system. The first rounds of changes in Tehran during Ghajar period did not changed the traditions.

During first Pahlavi period, parallel to early modern era, changes became larger. The role of automobiles was undeniable. The streets became straight and axial (which passed through old tissue), the plot types changed to respond the presence of automobile in the courtyard with a parking door. So the four-sided bulk courtyard changed to one-or-two-

sided-diverse-form courtyard and the configuration of special buildings followed the modern patterns (fig. 2). Changes of Tehran in these period was a change in condition with surgeries in structure, but the overall configuration of structure has definite roots in past.

In the second period of Pahlavi kingdom, the changes became faster. Based on new planning tools Tehran needed a simple code to be repeated all over the city to accelerate the building process and making it easy. 60% north standing bulk was a continuum of one-or-two-sided-diverse-form court yard (fig 3). The diversity remained in building form types but the court yard became a clear three sided free private spaces to accept parking for cars which the building is no more a single dwelling but a 2 or 3 stories and multi-dwelling building. City's new streets developed with shape of boulevards (as a new network entity), which shows the effective role of cars in new life. Administrative and monumental buildings following late modern patterns were designed as a symbol of Iranian Modernity.

After revolution planning codes ruled on Tehran partially and Tehran faced the lack of clear administrative guidelines for a long time. Based on new conditions building industry empowered so many new regions built and old regions changed based on 60% north standing bulk code, but this time in cubic configuration (fig 4). Here the difference was role of Islamic concepts like forbidding overlooking. 60% north standing bulk was genetic code which ruled the whole city and mutated it to a new organism which most of old cells were changed. In this time many people had personal car(s) and streets became something between streets (with land uses both sides) and highways (with wide bands). Based on global marketing forces malls and hypermarkets has been built as new monumental building.

Discussion: facing new forms, morphologically

The case of Tehran shows a mutation of urban form, which drawing a clear line of connection between the old and new is not easy. Although the basic considerations of urban morphology jargon was to conquer the problem of discontinuity resulted by modernist changes, recently some new writings by Sheer (2013) and McCormack (2013) show a tendency to new forms, but more accurate Nasser (2013) targeting the subject of contemporary city and morphology. Traditionally urban morphology deals with historical forms but the birth of new forms makes a thought that morphologically we should work on forms with no past and look at urban morphology from a history-free point of view.

It seems that the concept, non-alignment of urban morphology and history, can be found in fundamental texts. Regardless of genealogy of the word, type, which is not so crucial for practical actions, reviewing this concept can be seen in mid 20th century conceptualization of Argan (1963), Colquhoun (1969), Vidler (1977), and Moneo (1978), Although all these are based upon thoughts of Quatremere de Quincy, Abbe Laugier and first of all Goethe, which built up the concept of type (Madrazo 1995), in architecture, which is applicable in urban design and planning now. Argan used the word "type" versus "prototype" which means a configurative form exist a priori to all designed examples derived from it. But "type" is result of a reduction process of all existing forms of a defined function, use, or configuration. So type is a root form, which stemmed from a knowingly study and observation process, reducing all existing forms with a commons subject (Argan 1963). So recognizing 'types' is a result of refining, reducing and summarizing definite forms to a root. The root form is not like a structural grid, but internal configuration of a form or a principle which provide possibility of endless formal diversity. According to Argan types must be defined in a hierarchy which these types should have longitudinal and latitudinal relation with each other.

Vidler (1977) seeks the meaning of typology in the context of city as a repertoire for architectural and urban forms. Here, urban tissue can be seen as a whole which it's past and present is embedded in his body. The typological approach which he described as 'third typology' deals with themes remained on pre-existed types, themes which are common between types and themes resulted by combining these types (Vidler 1977). The urban tissue is stack of city's experience, and in this stack we can find fundamental rules of designing spaces and buildings. By choosing forms (basically their types) from the past, although the forms are disconnected from their temporal period, but still bring their social and political meanings form past to present. So we can see the continuity of urban form during temporal

changes.

Calquhoun (1969) extracted the innovative capacity of 'type' in design process. He argues that every act of design deals with a pre-assumptions and there is no way to see our pure intuition at the beginning of design process. So using types will not bind our hands to design, but just makes us to start faster. Because the respond to each design problem can be found in a definite type and any other methods, tools and applications (like all quantitative analytic tools, interpretive and intuitional ecstasy, and problem solving diagrams) can only lead us to a framework which shows us the way how to pass the process, and no final forms can be gained from this methods, tools and applications. Here, using a typological hierarchical repertoire can bring us at the first step of designing absolute final form.

Moneo (1978) excavated the notion of type and defined type as 'a concept which describes a group of objects characterized by the same formal structure'. As he argues type is not a spatial diagram of an average of a serial list, but based on the possibility of grouping objects by certain inherent structural similarities. The idea of type which 'ostensibly rules out individuality at the end has to return to its origins in a single work'. Moneo expressed that types are not only tools for describing architecture, but architecture is always produced though types. The architecture can be produces through types because types are open to the process of change. The type can be thought as the frame within which change can be operated. So type is not a frozen mechanism but in can deny the past and looking to future.

All these can be seen as viewpoint extremely rooted in the words of Quatremere as defined "type" versus "model"

"the model understood as a part of the practical execution of art is an object which should be imitated for what it is the "Type" on the other hand is something in relation to which different people may conceive works of art having no obvious resemblance to each other. All is exact and defined in the model; in the "type" everything is more or less vague. The imitation of "types" therefore has nothing about it which defies the operation of sentiment and intelligence." (Chr 1788 in Argan 1963)

Quatremere see type as a vague and neutral entity that brings only an idea of a form and do not dictate a form. So type always transfers a content of past projects but this content do not affect on design process of new building. So all these buildings are refined of their formal qualities in a type and designer can create a new building free from historical indicators.

According to this review, the notion of type can be considered value and time free, but the reduction process of existing building to root types let values and temporal character to be embedded in type. Table1 will give a clue about this character of the concept, 'type'.

As an outcome for this conceptual review, key points that introduce the notion of type can be summarized which any` practical action deriving from morphological thoughts should be founded upon them

- Consideration of 'type' as a vague and neutral entity that brings only an idea of a form but not dictating it
- The process of reducing existing form to a root configuration of a type
- Embedded historical content within the type and the ability of type to be free from historical contents.
- The commitment of developing hierarchy of types which have longitudinal and latitudinal relations with each other
- The ability of types to be used independently of in relation or combination with each other
- Using a contextual repertoire of types as a beginning stage of design process

Morphological concepts let us be free from any substantive value, so any urban form can be subject of reducing process of sample forms. So any kind of forms, belonging to any temporal period, and any context, can be reduced to a definite type.

Conclusion

Referring to the notion of type as the essence of formal elements of urban fabric the solution of the problem of being is seeing urban morphology free from values apathy to historical substances. According to this, form can be seen regardless of functional, conceptual

Table 1. The notion of type and its relation to new forms.

Main definition	Quatremere :The idea to conceive design without dictating any definite form, as a vague and neutral entity which can be repeated in many forms but let diverse forms exist		
Author	**Notion of type**	**Procedural aspect**	**Conceptual explanation**
Argan	Result of reducing many existing form to a root type	Refining. Reducing and summarizing forms with degined function, use of configuration	internal configuration of a form or a principle which provide possibility of endless formal diversity
Vidler	A body which embed past and present of urban fabric	find fundamental rules of designing spaces and buildings, in the stack of urban experience, By choosing forms (basically their types) from the past, which is disconnected from their temporal period, but still bring their social and political meanings form past to present	Timeless and value free (neither utopian and nor nostalgic, neither ancient and nor avant-garde)
Calqohoun	A pre-assumption for intuition in any act of design	Responding to diverse design problems, by its diversity	A cell for typological hierarchical repertoire which can bring us at the first step of designing absolute final form.
Moneo	A concept of form which describes group of forms with similar inherent structure	A tool which opens up the process of change in architecture	The type can be thought as the frame within which change can be operated

and historical substance. This can be done by reductive process and abstraction of all contemporary forms (contemporary forms, here, means all forms existing in urban fabric, whether historical forms, their modifications or new forms). Any individual type, no matter what is the historic period it belongs to, and no matter what is the function it serves, can be used again and again in many new derivations. So such repertoire of types can be a fundament for using, mixing, making hybrids, modifying, and updating forms for new needs. In this way we have a line of continuity which starts from the beginning of our history, save its continuity through modernism and globalization and do not escape from any period of time.

Such a process will lead us a knowlege for a a framework which include a method for selecting forms exist in all urban fabrics to develop prescriptive norms for all situations. So this method should choose forms with many possible configurative patterns and diversity of morphological hierarchy; patterns remain from past, or modifications of old patterns. Also all other forms with any kind of contrast with formal preferences embedded urban design and architectural theories, have capacities for further development of cities. But using this capacities need to modify the forms for real needs. It seems this is similar to the absolute meaning of reading the city expressed by morphologists (Nessbit 1996). Nevertheless, the main question here is how to mix and combine different types. Is there any theoretical indication for such a thing or just simple practical rationale will give us a chance to do this? Combining different qualities with different fundamental bases and concepts will make a designer to use normative approach as a meta theory. But using this approach for urban changes relying on urban morphology needs more researchs and deep scrutiny.

Figure 1. Traditional building types in Tehran (reference: Iraninan national organization of Cartography 2004).

Figure 2. Building types in first Pahlavi period (reference: Iraninan national organization of Cartography 2004).

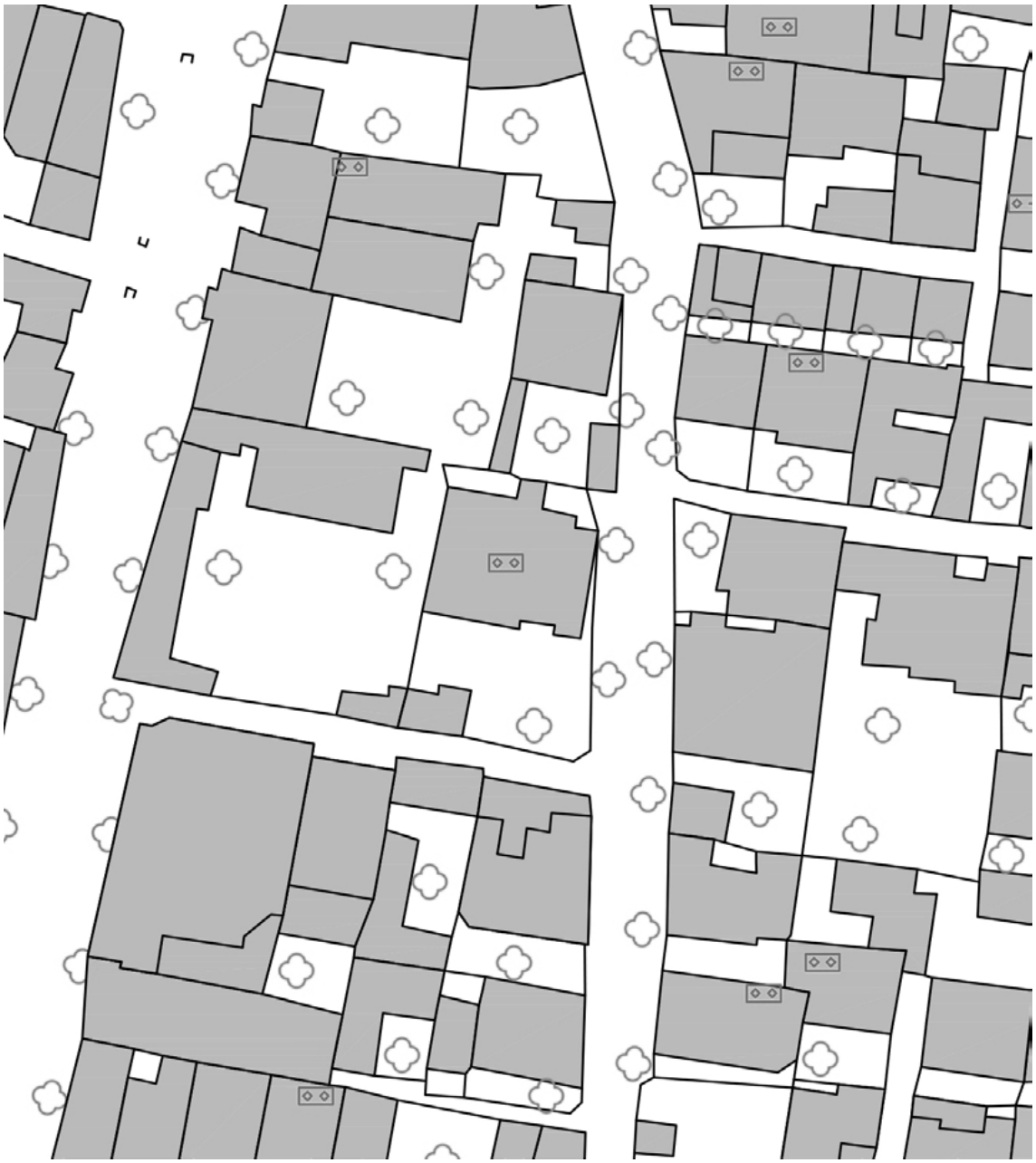

Figure 3. Birth of 60% north-standing bulk in second Pahlavi period.

Figure 4. North standing bulk with cubic configuration).

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READING

R.1 Form and structure of the historical city
R.2 Urban morphology and settlement process
R.3 Relation between periphery and natural space
R.4 Structure of the informal city

Learning from the ancient city: Pompeii. The form of the city, the form of the block, the form of the house

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Archaeology and Architecture have a common etymological root in the prefix related to the ἀρχή but a deep difference in their essence: the first is speech on, the second building of. Archaeology comments and describes the past, Architecture has its aim in the modification for the future.

Two images to represent this idea: the first is *The desperation of the artist in front of the greatness of the ancient ruins* (1778) by Johann Heinrich Füssli, while the second is that evoked by the motto *Dwarves on giants' shoulders* by Bernardo de Chartes. In the first, well-known representation, the romantic artist is hopeless in front of the in ruins antiquity, today in the courtyard of Musei Capitolini in Rome, and we don't know if he is desperate because he sees the fragmentation of the antiquities or because he feels their greatness is unattainable. The second, a famous quotation by Bernardo di Chartres, conversely means that the past – the giant – is a heritage we can use to free ourselves from the contemporary condition, to rise from the ground and to be able, in this way, to look further: this is the idea of a progressive character of our discipline that advances basing on everything has already been acquired and has taken the character of permanence, in physical space but also in time.

The lesson of an archaeological city as Pompeii is so intended and the paper will investigates it through analytical categories related to the form – the urban morphology and the architectural typologies – and to the spatiality on the different but always connected scales: of the urban fabric, of the block, of the house.

The form of the city

Pompeii foundation is attributed to the "Oschi people of Campania" by Amedeo Maiuri that, on the basis of the archaeological evidence, wrote about a first defined form of the city in the VI century b.C., walled and with a regular urban fabric. Etruscan influences, from the inner land, and Greek, from the sea, alternated in the following two centuries, up to the Sannita conquest, datable to the end of the V century b.C. when the city became an "Italic city". For other two century the events of Pompeii concerned above all the relationship with Rome, from which Pompeii was able to maintain always a certain administrative independence, up to its constitution in Roman colony with the name of *Colonia Cornelia Veneria* in the 80 b.C. when a quick process of transformation in "Roman city" started. In the 62 a.C. a violent earthquake determined wide and spread destructions to which the city answered with a great program of reconstruction that was still in progress seventeen years after when the eruption of Vesuvio described by Plinio the Younger in two letters to Tacito, stopped forever the time of the city.

As it was written, the archaeological evidences often come to us through metaphorical "wounds"[1]: they are the excavations the determine the appearance of the ruins that, always as fragments, determine another interruption, here morphological, in the continuity of our territories and urban fabrics. In the case of Pompeii the complex history of the excavation is added, starting in the 1748 with Carlo of Bourbon, alternating periods of intensive work to slowdowns until a more systematic phase of archaeological excavation from the 1860 under the direction of Giuseppe Fiorelli. Probably the wideness of the archaeological site and its excavation history, added to the idea that Pompeii was of exclusive competence of archaeologists, produced the fact that the form of the city, intended as synthetic form referable to a precise idea of city, wasn't in the middle of the reflection and the studies on this city at Vesuvio's feet. Recently, studies and research on Pompeii have seemed to multiply but, always in this case, few are the studies based on the idea that Pompeii is still a lesson for the architectural discipline while many are the works, also of great importance, on the subjects of accessibility, valorisation or on the relationship with the outside contemporary city.

Recently, the Neapolitan historian of architecture Giovanni Menna[2] wrote about this subject, indicating, before of Amedeo Maiuri, Francis J. Haverfield as the researcher that inaugurated the study of Pompeii's urban morphology. It is not only a cultured reference to a text on the urban history of the classical cities, including Pompeii, but, moreover, a new important point of view about it. In the *Preface* to the text, Haverfield wrote that he tried to give «[…] a scholar's contribution to a modern movement»[3]. Thus, the study of the ancient city as contribution to a 'modern movement' – without capital letters and some years before this expression became historiographical category – wants to say that the ancient city can still be a lesson thinking of the progressive character of our work. Pompeii, even if buried from the ashes of the volcano and never come back to life, didn't expire its lesson, can be not only a lesson of history but can give indication to solve the problems that await us regarding a contemporary city that finds it hard to get really modern.

As previously stated, the study on Pompeii rarely concerned its urban form and a precise dating of its parts is still doubtful due to the fact that the city grew through 'additions' and 'overlays', making difficult for archaeologists and historians to agree. Another way is possible: looking only at the form of the city and re-building its development only related to the 'evidences' and the 'traces' that, for the look of the architect, are inscribed in the synchronic urban form before our eyes, by using some consolidated tools of the urban analysis: the *Straßenbau* – representation of the road system – and the *Schwarzplan* – 'black plan' so-called because all the built elements are represented in black while any other information is deleted in order to read a 'figure' of the city on its background –, both in relationship with the contour lines and, in this way, with the form of the soil where the city was built.

Talking of Pompeii, a first nucleus emerged between *via Stabiana* to the east and *via di*

1 "The Invisible City" International Design Conference, Aspen, Colorado, 19 June 1972. In S. Wurman (edited by), *What Will Be Has Always Been: The Words of Louis I. Kahn*, Rizzoli International Publications, New York 1986, p. 150.
2 A. Ricci, *Attorno alla nuda pietra. Archeologia e città tra identità e progetto*, Donzelli editore, Milano 2006.
3 F.J. Haverfield, *Ancient Town-Planning*, The Clarendon Press, Oxford 1913.

Nola to the north, defined, toward south and west, from the limits of the plain that overlooked Sarno's river mouth: an *Altstadt* built by quadrangular blocks with many irregularities and different dimensions, organized around a 'central place' – the same of the current *Foro* but defined only from the presence of a temple on the west side. The *forma urbis* represents, in this phase, a city probably spontaneously grown, starting from a smaller nucleus, inside a wider city wall including also not built land. With some exception, the archaeologists agree to include, at this moment, not so much the triangular forum in its current morphological configuration, but certainly a 'singular place' here placed for the presence of a suburban temple.

A second phase of Pompeii development could be individuated including all the enlargement to the west of the *cardo-maximo-via Stabiana*. However, it is necessary to divide a first enlargement of the city, evidently planned – the *Regio VI* – and the saturation of what we can define 'interstitial areas'. In fact, to the north, starting from the part of the wall city between *Porta Ercolano* and *Porta Vesuvio*, two orders of long rectangular blocks – 35 by 140 metres the first and 35 by 95 the second – while, between the *Altstadt* bounded by a road ring and the new city with the rectangular blocks based on the alignment of *via Stabiana*, irregular blocks, for dimension and form, are determined including definitely the triangular forum that, however, remains isolated due to its high position.

Via Stabiana is the main axis of the first enlargement of the city to the east. The blocks are aligned with one side on this axis and present an irregular shape because the alignment of *via Stabiana* doesn't coincide to the east-west orientation of *decumani*. About the alignment f the city related to the cardinal points, the orientation of the city is 29 degree on the axis south-east/north-west while in Naples is 24 degree: both very near to the 22.5 degree then suggested by Vitruvio as the best orientation of a city. The last phase of Pompeii's enlargement is the one to the east, clearly based on a rectangular block – 35 by 85 metres, really similar to the block of the ancient centre of Naples – pervasively applied on an orthogonal grid inside the city wall, only deformed near it.

Thus, synchronically, it is possible to observe in the map of Pompeii a city 'built by parts' able to express different ideas of city, built over time following non only the history but also the geography, today concurrently inscribed in the whole physical form of the city.

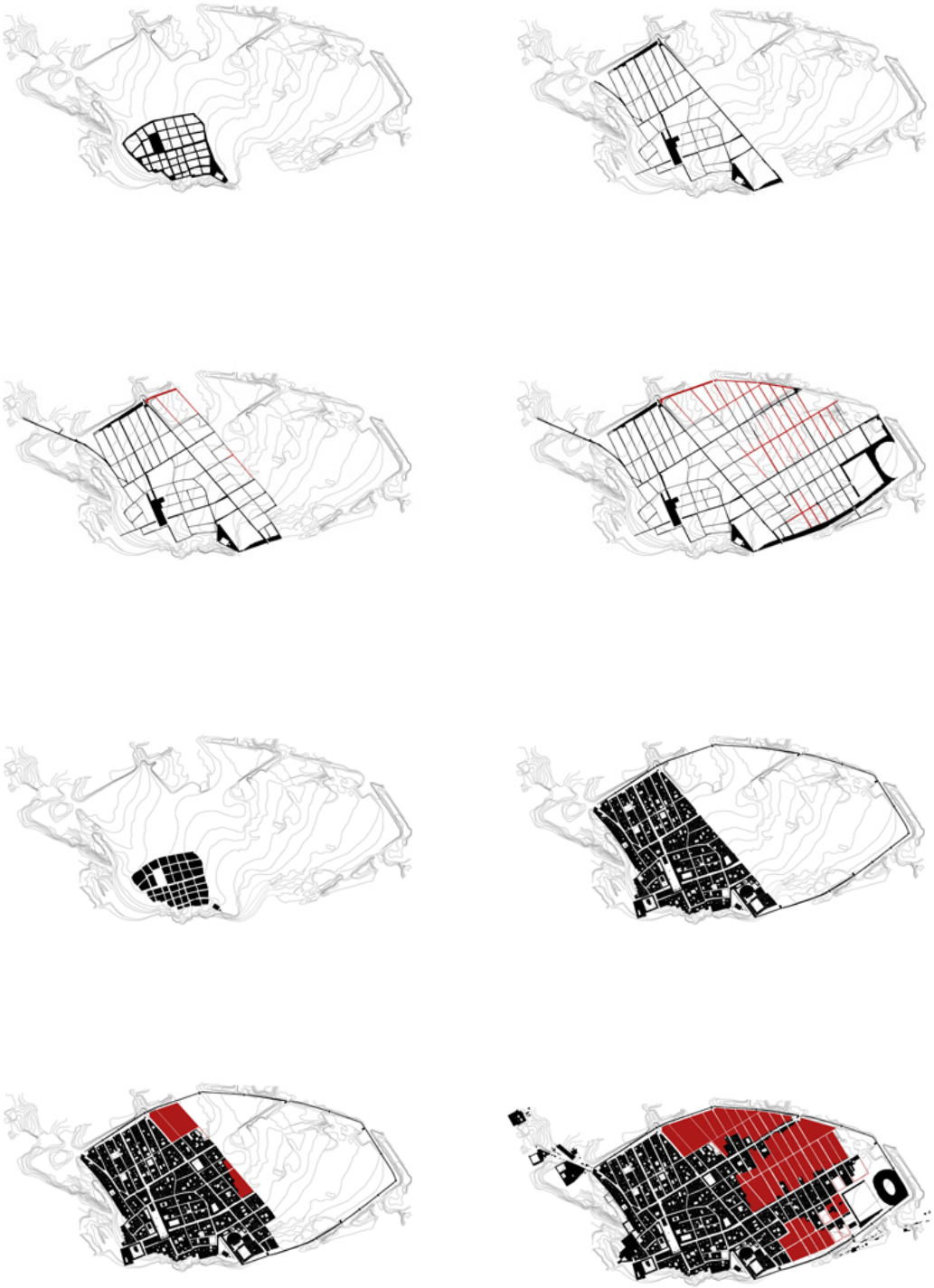
Another kind of analysis was added to the previous described, through the *Rotblauplan/ Red-blue plan* that prof. Uwe Schröder of the RWTH University of Aachen[4] proposed as a work on the urban spatiality and that appears able to integrate the typological and morphological studies of the Italian tradition. This kind of reflection is based on a concept of space as the foundational element of architecture able to generate the form that defines it. The *Pardié*[5] project inaugurated this research where 'warm' spaces – open spaces as architectural construction, defined by wall and in this way related to the idea of typology – and 'cold' spaces – open spaces as fragment of nature, defined also by topological elements – are distinguished. This approach is really interesting because it started from the idea that «[…] while ideas of an opposition between modernity and history prevailed previously, it now appears even more certain that modernity is in reality a continuation of architectural history» and again «To the extent that the mapping of spaces leads toward topological and typological fundamentals, and consequently toward analytical and conceptual prerequisites for designing and for the design, it can be characterized and understood as a design method». The characteristics of this analysis are, thus, the vocation for the project, the instrumentality of the analysis for the project, an idea of modernity intended not opposed to the history but as *modus hodiernus*, legitimizing, following Mies van der Rohe, every age to expresses its greatness and, with it, its idea of city expressing its "Culture of space", its "Identity of space", its "Memory of space"[6].

4 The author of this essay is, with Renato Capozzi, Scientific Coordinator, for Italian part, of an International Cooperation Agreement between University of Naples "Federico II" and the RWTH University of Aachen (Scientific Coordinator Uwe Schröder). In the framework of the Agreement many activities – research, didactic, workshops, conferences – have been realized.

5 U. Schröder, *Pardié. Konzept für eine Stadt nach dem Zeitregime der Moderne A Concept for a City after the Time Regime of Modernity*, Verlag der Buchhandlung Walther König, Köln 2015.

6 See the paragraph *Time of Spaces-Spaces of Time* in U. Schröder, *Op.cit.*, p. 6, where the author proposes to re-connect the two categories – Space and Time – in the field of the urban studies, looking at the space as that able to determine the architectural form.

Figure 1. Pompeii. *Schwarzplan* of the evolution phases of the city. Drawing by C. Sansò; Pompeii. *Stassenbau* of the evolution phases of the city. Drawing by C. Sansò.



In this way observed, Pompeii is a dense city, certainly built as 'otherness' to the nature but able to establish with it clear and nameable relationship. The *Altstadt*, as said, is built in relationship to the form of the ground, on the buttress facing the Sarno's river mouth as extreme land of the plateau where later the city will enlarge itself. On the other side the landscape enters powerfully in the city, especially in its 'singular' places. The well-known sketches of the *Carnet 4* of the *Voyages d'Orient* by Le Corbusier – especially the n. 99 *Le Vesuve a lim de dans Forum* and the n. 103 *Du temple de Giove* – describe the wide field of the Roman Forum of which the Vesuvius, from on side, and the *Lattari* mountains, from the other, are the background behind the portico with a double order of columns that define its form. Rosario Assunto[7] wrote beautiful pages on the relationship between city and landscape in the Italian cities and his words seem to describe the quality of the space that Le Corbusier drew. In their relationship, in their confluence one in the other, city and landscape – following Assunto – become, from simply spaces, meta-spaces: the open finite urban space, bordering with the open infinite extra urban space, helps to determine the meta-spatiality of the landscape in the same way the landscape helps to determine the formation of open spaces in the city. And this is the case of the Roman Forum in Pompeii: an open but limited spatiality, inside the city but overlooking the nature.

The Triangular Forum describes different relationship with the nature: built on a promontory overlooking the plain, its entrance is on the shorter side and, when in the inner space, the space dynamically expands, contain the Doric temple – here an absolute solitaire – but opening to the horizon. Probably this space was a sacred place extra urban in an age of Greek influence and this thing explains the characteristics of this small acropolis.

Finally the *Palestra Grande*, a huge quadrilateral of 140 by 110 metres as Amedeo Maiuri described it: «[…] a big parade of 133 columns on a raised podium, around a large grassy field, once shady, as the footprints of the roots show, thanks to a double row of trees […] in the middle of the field a large swimming pool». Thus, the big trees – plane trees as the archaeologist demonstrated – with the columns, the filed and the water are materials of this construction for the body acre where the nature, architectonically configured, demonstrates that «[…] near to the tiny, often too precious architecture of gardens, Pompeii give us, for the first time in the ancient world, a real and monumental evidence of an arboreal architecture at the service of an important public building»[8].

Thus, Pompeii is a compact city where the relationship between architectural typology and urban morphology is represented in *Straßenbau* and *Schwarzplan* that are one the negative of the other. Nevertheless it is a 'porous' city as the discussion about the form of the *insula* and the form of the house is going to demonstrate.

The form of the insula

«The ancient called *Insula* the complex of more houses surrounded by roads […] and *Domus* the house of one person. This difference could correspond to what we call, in Naples, *palazzo* (house of one or more floor) and *Domus* as a single flat»[9].

This is what D. Andrea De Jorio wrote in his *Plan de Pompéi* where a distinction between *insula* and *domus* is referred also to house where the owner lives and houses for rent[10]. Nevertheless, Amedeo Maiuri uses the term *insula* related to its morphology, to define an 'elementary part' of the city of Pompeii[11], as today in all the studies on the classical cities.

In this essay the assumed prevailing 'elementary part' is the rectangular block, explorable above all in the *Regio VI*, also because it is the part completely excavated. The region is

7 See R. Assunto, *Il paesaggio e l'estetica*, Giannini, Napoli 1971.

8 A. Maiuri, *La palestra di Pompei*, in "SAPERE", Ulrico Hoepli Editore, Milano, Anno V - Volume X - n. 118, 30 novembre 1939 – XVIII

9 A. De Jorio, *Guida di Pompei con Appendici sulle sue parti più interessanti*, Stamperia e cartiera del Fibreno, Napoli 1836.

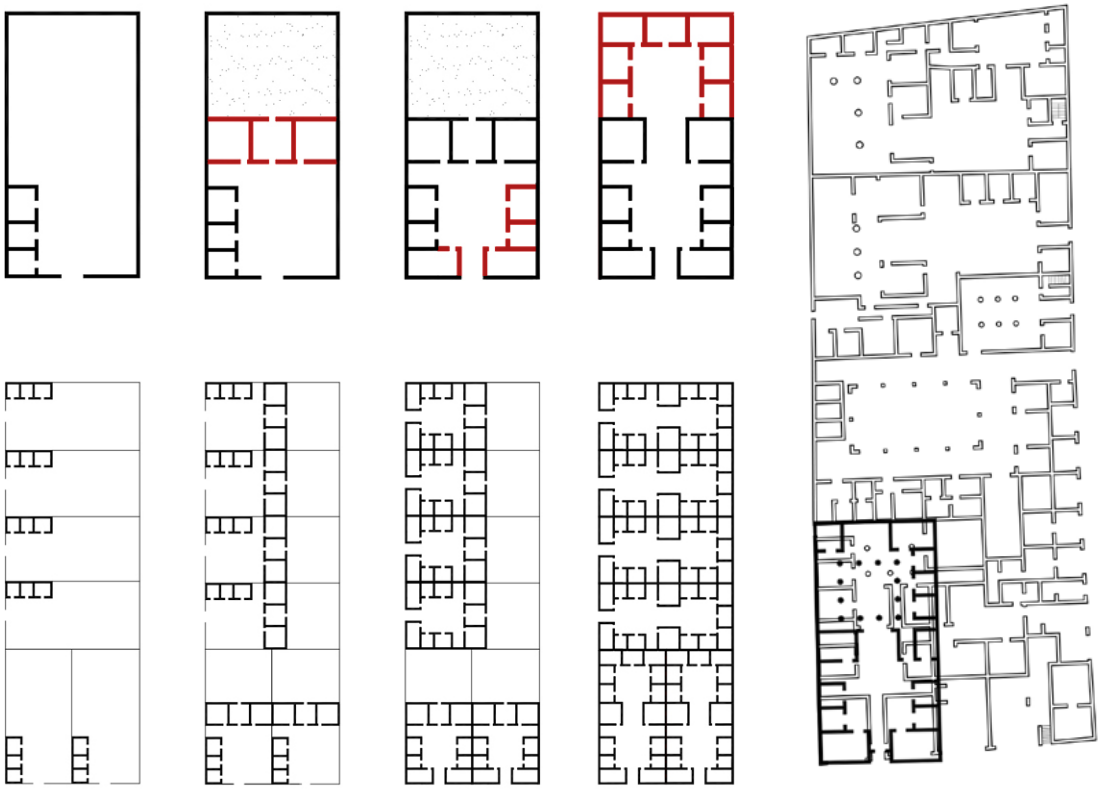
10 See the item 'Insula' in http://www.treccani.it/enciclopedia/insula_%28Enciclopedia-Italiana%29/, on line edition of Enciclopedia Italiana (1933) and G. D'Ancora, *Della economia fisica degli antichi nel costruire le città*, Onofrio Zambraia, Napoli 1796; D. Raoul-Rochette, Pompéi: *Choix d'Édifices Inédits,* Parigi 1828-1842 and N. D'Apuzzo, *Considerazioni architettoniche*, Stamperia e cartiera del Fibreno, Napoli 1831.

11 See A. Maiuri, *Pompei. Con pianta, 18 illustrazioni nel testo e 113 fuori testo*, Libreria dello Stato, Roma 1949.

composed of five blocks with the two shorter sides along *via delle Terme-via della Fortuna* and along the parallel *vicolo del Mercurio*, separated by *cardines*, including the *cardo maximo*. To these two other blocks are added to the east and to the west, irregular because adapted to the alignment of *via Consolare* and *via Stabiana*. To the north there is another series of six blocks, longer than the previous, extended until the city wall, also in this case with other two irregular added blocks. It is the most tidy part of the city as Amedeo Maiuri observed when wrote that *Regio VI*: «is, for its checkerboard plan with all the roads crossing with right angles, the most regular part of the city; the long *Strada di Mercurio* (from north to south), that start with a beautiful triumph arch (the so-called "arch of Caligola" from the ruins of a bronze equestrian statue) and is closed at the end by one of the two towers of the city wall (*Torre XI*), and the *Vicolo di Mercurio* (from east to west) divide the region in four sectors, each one of four *insulae*[12]».

The hypothesis in the previous paragraph about Naples and Pompeii as 'parallel' cities, in the orientation of the urban fabric, and 'analogous', due to the form and the size of the *insula*, allows to apply to Pompeii some theses developed by Gianfranco Caniggia for the ancient city of Naples in a condition where «the reached set of typological codifications and of process re-codifications» is minor, just because the life of the city was interrupted by the eruption of the volcano. Starting form the study of Neapolitan suburbs, then applied to the historical centre, Gianfranco Caniggia[13] talked of a condition 'of first settlement' constituted of elementary *domus* on the heliothermic axis placed to the north side of the enclosure, facing the south side. The *insularizzazione*, preceded by the *tabernizzazione*, is the "typological revolution" produced by the progressive construction of rooms on the other sides of the enclosure, finally to the north, in a first phase without occupying a free space behind the house, the with a further saturation of the void with other rooms of the house in this way articulated on a central axis from the entrance, through the hall, along a system of open spaces of different characteristics, as the *peristylium* and the garden.

Figure 2. Pompeii. Hypothesis of the insula construction.



12 A. Maiuri, *Op. cit.*, Libreria dello Stato, Roma 1949, p. 39.
13 G. Caniggia, *Le analisi tipo-morfologiche*, in "Notiziario" n. 13/14, "Il recupero urbano", settembre 1989.

This hypothesis was 'tested' on the *Regio VI* where the *Via di Mercurio*, north-south *cardo maximo* crossing the forum, was individuated as the germinal axis able to define this part with houses on the north side of the enclosure facing the south. The heads of the *insulae* on the *decumano – via delle Terme-via della Fortuna* axis – are an exception because the plots rotate and the houses are on the west side of the enclosure facing the east: a 'synchronic variation' caused by the presence of an important street – the *decumano* – where it is possible to open the house entrance. Caniggia found the elementary *domus* configuration and its followed development in the *S. Giovanni in Porta* block, inside the Greek-Roman urban fabric of Naples, underlying a coherence between the current state and the hypotheses of the process of development. Following this trace, in the case of Pompeii, the 'ideal scheme' of *Casa del Chirurgo*, one of the most ancient of Pompeii datable at the IV century b.C., often assumed as 'model' of the Pompeian house, was used to retrace the process that, form an house placed on one side, progressively occupied all the other, often from *cardine* to *cardine*. A reconstruction that appears particularly reliable in the case of the *Casa degli Amorini Dorati* where the large *peristylium* is occupied by rooms to the east, the west and the north, facing the south or in the case of the *Casa dell'Ancora* that, even if in its unusual "L" shape, could be interpreted as an aggregation of a *domus* from *cardine* to *cardine* and an added huge garden of which the house occupies the west side facing the east.

It is the *insula VIII* the main example to investigate the relationship between form of the *insula* and form of the house. The *insula VIII* of the *Regio VI* is the *insula* on the corner of two important roads: the *decumano via delle Terme-via* della Fortuna-*via di Nola* and the orthogonal axis than crosses the forum. Along the *decumano* two rotated plots are placed, following the above-mentioned principle, of which on is occupied by a *thermopolio* and the other by the *Casa del Poeta Tragico* from which the entire *insula* is named. The group of these two constructions occupies a quadrangular space of 35 by 35 metres, following three plots from *cardine* to *cardine*. The first is occupied by the *Fullonica di Veranius Hypsaeus*, one of the largest laboratory for washing and colouring togs in Pompeii, probably derived from a transformation of an house ase Maiuri indicated for the presence of a *perstylium*. The other two plots are occupied by two houses – *Casa della Fontana Piccola* e *Casa della Fontana Grande* – based on a common scheme with the entrance on the *cardo maximo* and, along the central axis, an *atrium* with *impluvium*, a *triclinium* and a garden with a scenic background with a *nymphaeum* with fountain. Elsewhere, for example in the western part of the city, the *insulae* present a structure more similar to what is possible to observe in the Greek cities, as in Olinto, and also the form of the house, on a squared plot and with "L" shape – e.g. the *Casa di Pinario Ceriale* in the *Regio III* – is similar to the oikoç of the ancient city in the *Calcidica*. This area of Pompeii was less investigated and excavated and for this reason is more difficult to develop hypotheses.

At the scale of the city, as previously said, the city finds again its relationship with the geography through, above all, the presence of the landscape in the streets and in its more important public spaces. The building disposition inside the blocks represents, on the other side, an interesting way of occupying the space of the enclosure in order to guarantee the best conditions of living. There is another quality of space inside the *insula* based on the void instead of the full space: better on the system of voids that characterize houses representing an archetypal way of inhabiting referred to the enclosure as primeval act of 'cutting' a part of nature, then rebuilding, inside the *patio*, a 'vertical' relationship with it: with the ground, on one side, and with the sky, from the other.

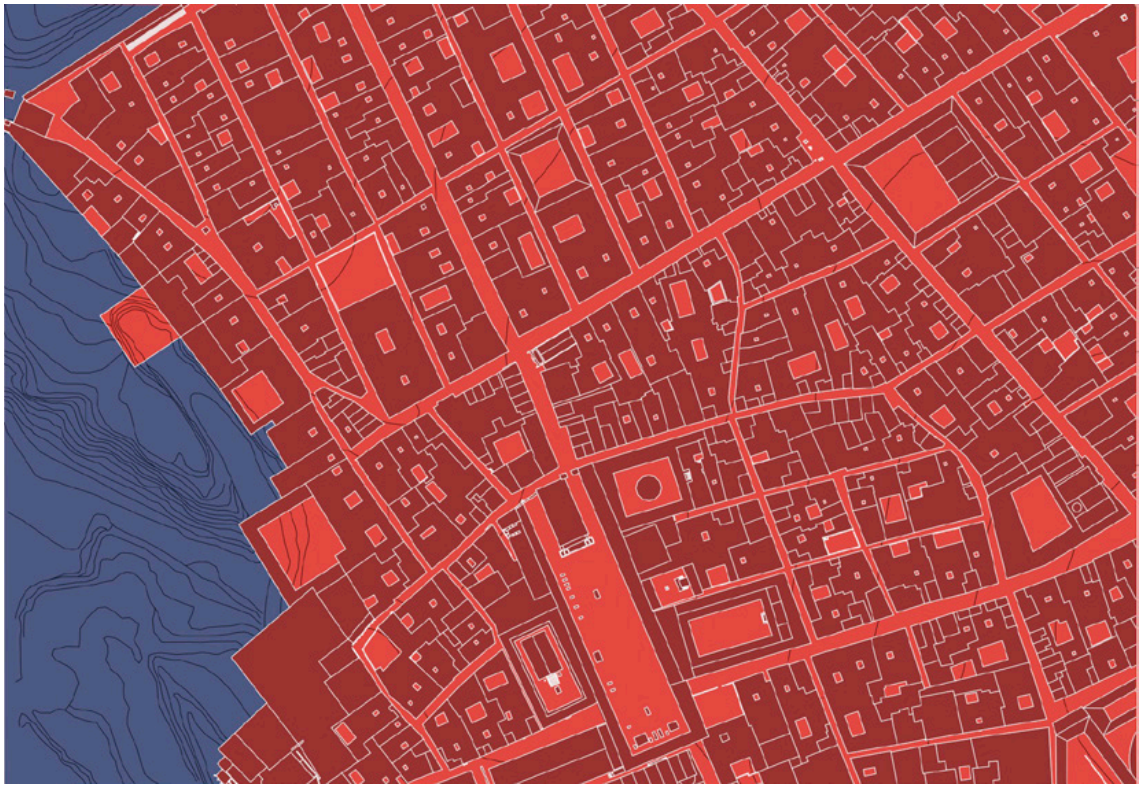
Agostino Renna wrote that «[…] the most general definition of house is related to a relationship between, in a bilateral way, construction and place; in this way inhabiting means to have a place where staying […] But a place is a place if fenced because the house can be defined only as a possibility of isolating, building, an individual place [and] all the experience of the ancient house can be reduced to this concept: in it's the architecture of the place, the enclosure of columns, crystallizes in forms the myth of the individuality of the family»[14]. Agostino Renna thought the ancient city not only was – and is – able "to produce suggestions" but above all the study of the places as Pompeii doesn't assume the character

14 A. Renna, *L'illusione e i cristalli*, Clear, Roma 1980.

of a nostalgic claim of a return to a far and passed past but rather the recognition that «The form, materializing the content of a relationship [between place and enclosure] can constitute a place that doesn't identify a physic person, single or in group, but evokes this general condition […] The form can not propose again a social declined condition […] but can be the transfiguration of a human aspiration to live, of a myth that, in its transforming, became universal».

And it is this universal condition that makes worthwhile, even today, learning form the lesson of the ancient city.

Figure 3. Pompeii. *Rotblauplan* of Regio VI and forum area. Drawing by C. Sansò.



The form of the house

From the form of the *insula* to the form of the house, Pompeii, beyond the atmosphere of interrupted life typical of the archaeological context, represents an extraordinary manual of architecture. In fact, if it is true, on one side, that the archaeological excavation reveals the tragic moment when the life was stopped – especially in Pompeii not for a slow abandon but for a catastrophic event – on the other, it s still imaginable as a city where the man could find a place to inhabiting: and this is true, as Maiuri stated, above all, in Pompeii for the form of the house. The archaeologist wrote: «The house is cell and essential nucleus of an urban settlement, origin and base of every human consortium […] through the vision and the study of the house, more than of the monuments, it is easy to intend not only the historical, economic and demographic problem of a city, but the human, spiritual and cultural problem of its inhabitants»[15].

Thus, the house, in its stable form, is the expression of a shared culture of inhabiting that concerns, more than any other building, the ways of living of all the humans and, for this reason, it has been always in the centre of interest of architecture, especially between the nineteenth and the twentieth century. This is the moment when the house, and its form of aggregation, became field of really advanced experimentation in an architectural culture based on the reason as the characteristic of the humankind that distinguishes it from the

15 A. Maiuri, *Op. cit*., Libreria dello Stato, Roma 1949, p. 14.

other living being but makes all them equal. In its essay about the time, Marc Augè defined *surmodernité* as «[…] the combined effect of an acceleration of history, a constriction of space and an individualization of destinies»[16]: if it is still possible, in some way, to define the two first as positive aspects of contemporary age, the consequences, all negative, produced by the growing incapacity of the contemporary man of feeling part of a community are under the eyes of all, in many field and also in architecture, as many said. Thus, the house «[…] has had suffered all the lacerations, the excesses, the enormous numbers of an urban growth made of quantities and weights without rules and limits. The qualities of the project – the same words that were able to narrate its dream and, together, a new hope – seemed to succumb and the houses to change from friendly and precious components of the city and the territory to the most relevant and violent factor, also for their quantity, of alteration and often destruction of the urban landscape and the environment»[17]. The "peripherization" of the cities in scattered urban lands determined an unsustainable consumption of ground and this unlimited extension consumes our territories in absence of on any structure based on hierarchies and public spaces: the empty space between the houses is only fragments or interiorized in private enclosures, not more able to build a foundational urban fabric. The philosopher Jürgen Habermas talked, about modernity and against what stated by the post-modernism, not of "failed" of "exhausted" project but on "not completed" project[18]. Habermas defended the *emancipative project* that animated the modernity and the faith in the reason as instrument to make this project real. In the same way of what Habermas discussed in the philosophical field[19], also the modern city is a project realized only in fragments, as long as the city existed, then scattered in the unreasonableness of the sprawl and of an urbanization without rules, unable to intend the city as a collective fact, undifferentiated, in its form, and indifferent to the places and, in some way, to its inhabitants. Facing this condition, it is necessary to find again a new possible beginning and «The subject of inhabiting appears […] forced, in the new historical perspective, to return to its origins, to retrace backwards the stages of a story that the modern thought raised along the axis of a progress illusionary linear, to find the turning point from which resume the thread of a discourse never really stopped»[20]. This means the possibility to return, also through the modernity, to Pompeii and to the house in one of is first stable form.

Again assuming the text by Amedeo Maiuri as reference, the *Casa del Chirurgo* fixes the 'fundamental typology' of the Pompeian house. It is one of the most ancient house of the city that the archaeologist August May of the *Deutsches Archäologisches Institut in Rome* dated as previous to 200 b.C.[21]. The entrance of the house is through the *fauces* to the *atrium*, at the sides of which are the bedrooms and the *alae*. At the bottom of the *atrium* there are *tablinium* and *triclinium*, through them it is possible to enter into the garden, *hortus*. The scheme is perfectly symmetric excluding the 'additions' on the south side – where the *triclinium* enlarges – and to the west following the plot's deformation.

Starting from a lengthening of this house, Maiuri derived his 'schematic plan of Pompeian house' – a very similar scheme appeared in the text by August Mau – that adds to the *Casa del Chirurgo*, without its irregularities, a 'doubling' made up of a *peristylium* around which *cubicula*, bedrooms and *oeci* are placed. The scheme is different to the one proposed by Caniggia for the elementary *domus* of San Giovanni in Porta in Naples for the missed imbalance, for the first part of the house around the *atrium*, of the rooms to the north side while the disposition to the south is the same in the part of the house around the *peristylium*. This difference could reveal a process of formation of the Pompeian house from a symmetric nucleus still based on a fixed typological asset, overcoming the subject of the orientation and

16 M. Augè, *Rovine e macerie. Il senso del tempo*, Bollati Boringhieri, Torino 2004.

17 M.G. Cusmano, *La cultura della casa. Percorsi critici nel territorio dell'abitare*, FrancoAngeli, Milano 2011.

18 See, among others, J. Habermas, *Der philosophische Diskurs der Moderne*, Frankfurt a.M., 1985, It. tr. by Emilio Agazzi and Elena Agazzi: Id., *Il discorso filosofico della modernità. Dodici lezioni*, Laterza, Bari-Roma 1987.

19 The possibility of interpreter *sub specie architecturae* the thought by Habermas can be read in R. Capozzi, *Architettura Razionale: progetto da compiere*, in F. Visconti, R. Capozzi (edited by), *Architettura Razionale*>1973_2008>, Clean, Napoli 2008.

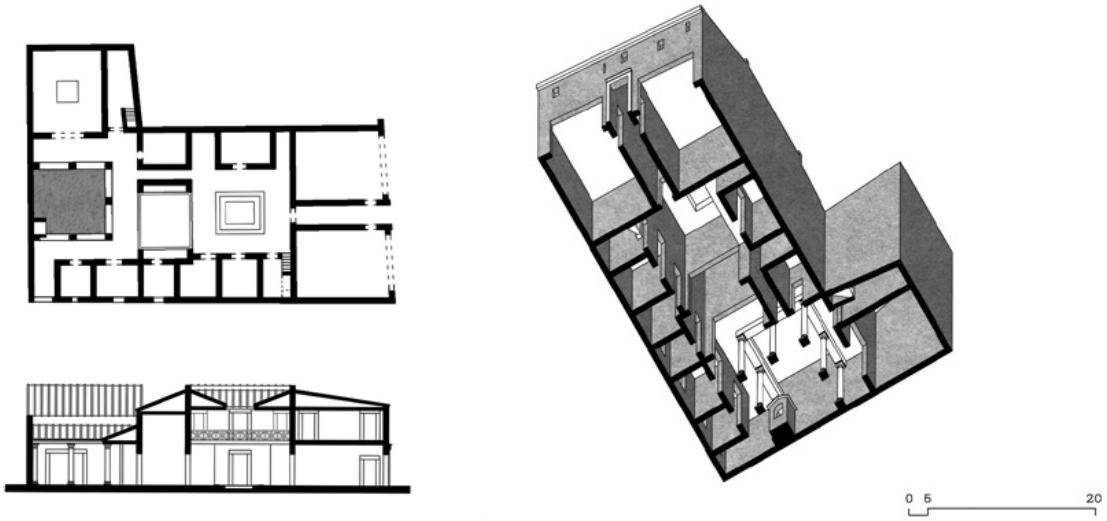
20 See Maurizio Vitta, item "Nuovi modelli dell'abitare" in http://www.treccani.it/enciclopedia/nuovi-modelli-dell-abitare_(XXI-Secolo)/, on line edition of Enciclopedia Italiana_XXI secolo (2010).

21 A. Mau, *Führer durch Pompeji*, Friedrich Furchheim, Lipsia 1898; Eng. ed.. Id., *Pompeii. Its Life and Art*, Mac Millan, New York 1899.

following the scheme of the 'Italic' house. A diachronic variation could be the longer house, through the sequence of two open spaces: *atrium* and *peristylium*.

To this scheme is very well adaptable the *Casa del Poeta Tragico*, placed on one of the two head plots along the *decumano* in the homonymous *insula*. The *Casa del Poeta Tragico* is one of the best known, studied and drawn houses of Pompeii that, when excavated in 1824-25, was assumed as model for the house of Glaukos, the protagonist of the famous historical romance in three volumes by Edward Bulwer-Lytton *The last days of Pompeii*[22], then inspiring many poetic, cinematographic and theatrical operas. Describing this house is describing the ideal scheme of the Pompeian house, with some particularities. The *fauces* at the entrance are long and assumes the profundity of two wide rooms facing the street, two *tabernae* connected to the house, probably belonging the same owner of the house. The *cubicula* and the *alae* are placed on the sides of the *atrium* and the stairs for the rooms at the second floor are near it. The *tablinium* faces the *peristylium* with other *cubicula* on one side and, on the other, utilizing an irregular part of the plot, a large *triclinium*. In this way the scheme is based on an axis where the most important spaces of the house – entrance, *atrium*, *tablinium*, *peristylium* – are placed. Nevertheless here the symmetry is altered to the position of *peristylium* and *triclinium*, but the central perspective is regained building a refined oblique succession, from the entrance to the altar of *Lari*, placing this element not in the middle of the portico but on one side of it.

Figure 4. Pompeii. House of the Tragic Poet.



Pompeii, differently to Herculaneum where many houses are preserved in their original volumetric configuration, lost the development in height of its buildings and appears as a 'big plan'. Moreover, very often, the Pompeii's houses were drawn not only in their horizontal section but also in the vertical rebuilding, in this kind of drawings, the original spatiality. Giovanni Battista Piranesi, among others, did it and, in some engravings published by the son[23], overwrote the *Casa del Chirurgo* to the *Atrium Toscan de Vitruve*. But the reconstructive drawing of the transversal section, through the axis of symmetry of the composition, is the representation that August Mau choose for the *Casa del Poeta Tragico*[24] to underline the qualities of a house that utilizes spatial hierarchies adequate to the spaces and builds a dynamic sequence, also through the light, between spaces less high and lit and open spaces where it is possible to look at the sky.

22 E. Bulwer-Lytton, *The last days of Pompeii*, Richard Bentley, London 1834.

23 See F. Piranesi, *Antiquités de la Grande Grèce aujourdhui Royaume de Naples*, Piranesi frères, Parigi 1804-1807 were the following three Tables are published: *Plan de la Maison du Chirurgien dans la Ville de Pompeia* (Vol. I, Tav. XIV), *Plan de l'Atrium toscan avec sa construction, adapté à la maison du Chirurgien, dans la Ville de Pompeia* (Vol. I, Tav. XVII) e *Coupes Geometrales de la Maison du Chirurgien, avec le suplement de l'Atrium Toscan de Vitruve, dans la Ville de Pompeia* (Vol. I, Tav. XV).

24 The drawing is at page 311 of A. Mau, *Op. Cit.*, Mac Millan, New York 1899.

The lesson of Pompeii is also that, when thinking to an architecture, the interior space and its form are inseparable: one doesn't exist without the other and vice versa. And this is true for the house and for the city as a whole where the interior space becomes space between the things confirming what Alberti stated writing that «the city is like a big house and the house, in turn, is a small city»[25].

The words by Mies van der Rohe for the students of the Armour *Institute of Technology* are useful to clarify this subject: «Thus, we want lead our students through the study of material and finality, to creative representation. We want to lead them to the healthy world of primitive methods of construction where every axe shot had a sense and every chisel shot its meaning. Where we find more clarity in the structure of a building if in the wooden of the ancient? Where unity of material, construction and form? Here the wisdom of many generations is preserved. What sense of material and what power of expression these constructions attest? What heat and what beauty they own? The sound of ancient songs resonates»[26].

25 L.B. Alberti [1452], *De re aedificatoria* (1, 9, 14), Il Polifilo, Milano 1966.

26 The inaugural lecture by Mies of 1938 – year where he was involved to manage the "Section of Architecture" at *Armour Institute of Technology* - is now in *Il bello è la luce del vero* in M. Bill, *Miës van der Rohe*, Il balcone, Milano 1955.

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Attractors, repellers and fringe belts: origins and medieval transformations of Arsinoe, Ammochostos, al-Mau'dah, Famagusta, Magusa

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This research poses a number of historical questions about the urban settlement of Famagusta: is it a Medieval, Crusader or a Frankish city? Is there any evidence of an earlier (pre-Lusignan) phase in the urban fabric and in the city walls? Can the application of the *attractor theory* give some results in the reconstruction of the medieval and late antique phases of Famagusta? We can analyse the urban structure of a city synchronically or diachronically, the theory of attractors, assuming that the deformations of urban routes follow the changing morphology of urban limits and centres, can shed some light on a reconstruction of the city. We can consider the city itself as a material historical document, without any opposition with archaeological data and other documents, such as quantitative notarial sources, cadastres, plans and city views.
Most of the written histories identify this settlement with that of *Arsinoe*, and *Ammochostos*, interpreting *Famagusta* as the franchized version of *Ammochostos*. Starting with a toponymic interpretation the paper seeks evidence of a Roman or earlier phase of the urban settlement, by considering written and epigraphic sources, and analysing the urban tissues with the *attractor theory*. This analysis is essential to the understanding of the different parts of the urban settlement. The research is an experimental application of some of the urban morphology theories, namely the fringe belts and the attractor analysis, to the understanding of the early history of Famagusta.

«Non c'è dubbio che la struttura fisica delle città in un determinato momento possa costituire il più sincero documento disponibile sulla società che la utilizza come campo di azione e di produzione»[1]

Methodological notes

The attractor theory is an innovative urban study tool based on a diachronic analysis of the configuration of routes. Streets change in time and we can interpret some of the deformations they follow as the result of the attraction or repellence of certain artifacts, defined as attractors or repellers. Once an attractor appears into an urban network of routes, some paths may change their configuration and deviate from their former position. A repeller is the inverse of an attractor, an element deforming the configuration of a path by repelling its traffic. We can infer the position of a disappeared attractor using the formal analysis of the configuration of routes that were attracted by it, determining a sort of diachronic urban stratigraphy (Camiz, 2018).

Outlining a *longue durée* history of an urban settlement is a complex operation, and within the reconstruction of the early medieval and late antique phases, we must face the lack of archaeological data, and the scarcity of written documentation. Describing the origins and the history of a city is in general a difficult task, it requires a diachronic approach, and specific analytical tools. In absence of written documentation about the city, such as cadastres, statutes and notarial documents, this task becomes even more challenging and therefore interesting. This experimental research merges the few written sources available for the earlier phases of the city with the results of the attraction analysis. The *attractor theory*[2] considers the diachronic deformation of routes caused by the different elements acting as *attractors* in an urban environment, such as bridges, city walls, city gates, water infrastructures, markets, and special buildings. By recognising the *attraction* in the route, it is therefore possible to infer the position of the *attractor*. Each *anthropic attractor* has an equivalent *morphological attractor* at the geographical scale[3]. The analysis interprets the effects of attractors on urban routes and fabrics as a methodology for the reconstruction of Famagusta's late antique and medieval city walls, in continuity with the Conzenian approach[4], and the research methods of the Italian School of Urban Morphology[5].

According to Montagu "Famagusta was founded in the year one thousand two hundred and ninety by Henry King of Cyprus, after the destruction of Ptolemais in Syria" (Montagu, 1799, p. 388). He also mentions a different interpretation about the city's origins: "some authors there are, who pretend to give it much higher date of antiquity, by affirming that the emperor Augustus, after the battle of Actium, willing to perpetuate his name in all the parts of the world, erected this city, which he called Fama Augusta, in memory of the fame he had acquired in that final victory" (Montagu 1799, p. 389). Within this general framework we would like to question the idea, generally accepted, that Famagusta is the *frenchization* of Ammochstos. The application of a Latin name to a Frankish settlement seems unlikely to us, even though not impossible. The place name Famagusta seems to belong instead to a Latin linguistic layer, as *Fama Augusta,* with the possible meaning of the "Augustus reputation", or the "reputation of Augusta": similar Latin city names include *Fama Iulia*[6], *Fama Iulia Seria*, (Jerez de los Caballeros), *Colonia Agrippina* (Köln), *Caesar Augusta* (Saragoza), *Augusta Treverorum* (Trier), *Augusta Raurica* (Augst) and *Emerita Augusta* (Merida)[7]. It should be noted though that in our case "Augusta" could have appeared originally in the genitive form "Augustae", as a feminine noun rather than a masculine adjective. Therefore, it would

1 Guidoni, E. (1978). *La città europea. Formazione e significato dal IV all'XI secolo.* (Milano: Electa), p. 8.

2 Camiz, A. (2017) *Nicosia's city walls. The morphological attraction of city gates*, In González Avilés, Á .B. ed. *Defensive Architecture of the Mediterranean. XV to XVIII Centuries*: vol. VI, (Alacant: Publicacions Universitat d'Alacant, 2017): 13-20.

3 Caniggia, G. (1976) *Strutture dello spazio antropico. Studi e note* (Firenze: Uniedit).

4 Whitehand, Jeremy W.R "Issues in urban morphology", *Urban Morphology* 16, no.1 (2012): 55–65.

5 Marzot, N. "The study of urban form in Italy", *Urban Morphology* 6, no. 2 (2002): 59–73.

6 Plinius, Naturalis Historia, III, 14.

7 Cfr. also "tit. sacer: Famae Aug(ustae)/ sacrum/ ------", (CIL II, 2/5, 910).

remand not to *Augustus*, the first emperor of Rome, but to *Augusta*, as a title awarded in some cases to the wife of the Byzantine emperor. In Cyprus, the Roman and Byzantine phases differ from the other areas of the Mediterranean; a Byzantine phase can be clearly recognised only in the XII-XIII century, while the earlier phases are usually not described as Byzantine, for the other influences. In Cyprus, the Roman phase is clearly defined as starting in 58 BC and ending in the VI century. The paper searches confirmation of the hypothesis of a Roman or pre-Roman phase of the urban settlement of Famagusta, by analysing written sources, if any, and analysing the urban tissue through the attractor theory. This will be essential to the reconstruction of the city walls and the understanding of the different phases of the urban settlement.

On the origins of the maritime settlement of Famagusta

The comparative analysis of the few written sources on this city can help to outline a hypothesis on the date of its foundation. Pseudo Scylax's Periplous[8], a maritime guide compiled in 335 BC, mentions only Salamis, Karpaseia, Keryneia, Lepethis, Soloi, Marion and Amathous as city with harbours on the coast of Cyprus: it seems that at time there was no city and harbour in the place where Famagusta is today. Strabo gives us the first reference to an urban settlement in this part of the island in 12 AD "... and then one comes to the Carpasian Islands; and, after these, to Salamis, where Aristus the historian was born. Then to Arsinoe, a city and harbour. Then to another harbour, Leucolla. Then to a promontory, Pedalion, above which lies a hill that is rugged, high, trapezium-shaped, and sacred to Aphrodite, whereto the distance from the Cleides is six hundred stadia"[9]. Strabo is accurate on the location of Arsinoe corresponding with that of today Famagusta, but he mentions this same place-name two other times in the text with reference to other sites. "Then to the promontory Zephyria, with a landing-place, and to another Arsinoe, which likewise has a landing-place and a temple and a sacred precinct" (Strab. 14.6.3). This other Arsinoe was a city founded in 270 ca BC by Ptolemy Philadelphus and named after Arsinoe I, his sister and wife. A city of which there is archaeological evidence, corresponding to the site of Polis Chrysochous. Again, Arsinoe is mentioned after Akamas following the coast clockwise from Paphos, and this seems to be the same site since the sacred precinct is mentioned (Cohen 1995). "Then, after Paphus, one comes to the Acamas. Then, after the Acamas, towards the east, one sails to a city Arsinoe and the sacred precinct of Zeus". Nevertheless, we can draft a tentative narrative on the origins of this settlement upon this information. Arsinoe, to whom the city named by Strabo seems to be dedicated, was eventually Cleopatra's sister; in 47 BC Caesar gave back the Roman province of Cyprus to the Egyptians, as a personal gift to Arsinoe IV and Ptolemy XIV[10], so it possible that after receiving the island, a city was founded and named after queen Arsinoe. We can therefore tentatively assume that following the restitution of the island to the Ptolemies in 47 BC, a city was founded on the coast, with a harbour, and named after Arsinoe IV, at that time the queen of Egypt. The reign of Arsinoe IV did not last long as the following year she was imprisoned by Caesar in the temple of Ephesus and then killed in 41 BC. The urban settlement of Famagusta can tentatively be dated to the I century BC, as a Ptolemaic foundation celebrating the restitution of the island and dedicated to Arsinoe IV. As a matter of fact, comparing this settlement with other Ptolemaic cities we may find some meaningful analogies. Ammochostos (literally buried in the sand), the other place name frequently associated with the urban settlement of Famagusta, appears for the first time in the Stadiasmos (III-IV cent.) as an abandoned city, with no reference to a harbour though. According to Papacostas (2014, p. 26, n. 3) Ptolemy's reference to Ammochostos in the area is due to XIV and XV century annotation to the manuscripts and was not included in the original text. The book of curiosities, a Fatimid text of the XI cent.[11] includes a schematic

8 *Periplous of Pseudo-Scylax*, Karl Otfried Müller ed. *Geographi graeci minores*, vol. 1, (Paris: Firmin-Didot et sociis, 1882) 15-96.

9 Strabo, Geographica 14, 6, 3.

10 Dio Cassius, XLII, 35.

11 Savage Smith, E. and Y. Rapoport eds. (2007). *The book of curiosities: A critical edition* (Oxford: Oxford

map of Cyprus, with the place-name *al-Mau'dah* in the area where today Famagusta is.

The description matches with the location of Famagusta, as following *Constantia* clockwise, and is described in the text as the only true harbour in the island while all the others are named anchorages. The text describes this harbour as protected from all winds except the euros, the Greek name for the southeast wind, corresponding to the southeast orientation of that harbour, matching the morphological setting of the city. Some have speculated on the derivation of these place-names one from the other, building a genealogy of place names: Ammochostos, Al-mau'dah, Famagusta, which is evidently biased towards an Hellenistic origin of the settlement, this hypothesis seems curious to me because generally place-names don't derive one from the other, but usually either persist or are overwritten in a different linguistic layer. So going back to the book of curiosities, we can consider it a reliable source on the Arabic place name al-Mau'dah in the site of Famagusta in the XI century, approx. 1020. The Anonimo ravennate, a geographical compilation written in the VII century, names Salamis and no other city that may be identified with Famagusta. The *Anonymi Stadiasmus Maris magni*, a description of the coasts written in the III century AD, names in the same place the abandoned city of Ammochostos. This should be a considered a quantitative source hence the measures of the distance between each port are given in stadia. "A Pedalio ad insulas stadia 80. Urbs ibi est deserta, Ammochostos dicta; portum habet omni vento, at rupes appellentibus occurrunt; cave igitur"[12], "Ab insulis ad Salaminem stadia 50; urbs est quae portum habet. A pedalio ad insulas 80 stadia"[13]. From Cape Greco the real measure is 22,878 km, Pedalion could therefore be the promontory along the coast at circa 14 km south of Famagusta, thus corresponding to the Stadiasmos. The Distance from Ammochostos to Salamis is 50 stadia, i.e. 9250 m, while the real measure is 8800 m circa, and this information matches. The name Ammochostos was used as an adjective more than a city name, meaning literally "covered by sands", so the description of the Stadiasmos is believable, about the position of the islands and the port. Nevertheless, the city is described as abandoned. Anyhow, in the III century, there was an abandoned urban settlement somewhere close to Famagusta, and there was a harbour protecting it from winds. This information could have been used at that time for later descriptions to localise the city, or even to arrive there by ship, finding a "deserted city". The derivation of Famagusta from former place names is not impossible, but very unlikely, because Famagusta, besides its assonance with Ammochostos, is clearly understandable as a Roman a pagan name, and in crusader times, naming a strategic city after the fame of a roman Emperor could have been considered heretic. Anyhow, we cannot prove here that this hypothesis is impossible because there were plenty heretics in that time. Therefore, Arsinoe, is slippery, Ammochostos is not very clear, but al-Mau'dah, is evident and refers to the same site as Famagusta. In the *Acta Barnabae* we can read a description of this settlement as Barnaba lands in that harbour sailing to Cyprus from the Holy land, showing how in that time the harbour of Salamis was not working anymore and another one named "ad insulas" (*en tais legomenais nesois*) was used instead. "And having set sail in a ship from Citium, we came to Salamis, and landed in the so-called islands, where there was a place full of idols; and there took place high festivals and libations. And having found Heracleides there again, we instructed him to proclaim the Gospel of God, and to set up churches, and ministers in them. And having gone into Salamis, we came to the synagogue near the place called Biblia; and when we had gone into it, Barnabas, having unrolled the Gospel which he had received from Matthew his fellow-labourer, began to teach the Jews"[14]. Another reference to Ammochostos is that of "god's servant Abba Kaioumos, imprisoned at Ammochostos" (Megaw, 1974)[15]. This manuscript was written in the XI century, reporting VII century events, as the bishop Arcadius

University press), Bodleian Library, Department of Oriental Collections, MS arab c. 90 f.36

12 p. 502, n. 304

13 i.e. 14800 m, 1 stadium =625 pedes= 185 m

14 Greek text from von Tischendorf C. ed. (1851). *Acta apostolorum apocrypha*. Lipsiae: Avenarius et Mendelssohn. Acta Barnaba. 72.

15 Halkin, F., "La vision de Kaioumos et le sort Eternel de Philentolos Olympiou", *Analecta Bollandiana* 63 (1945): 56–64.

was in Constantia in the first half of VII century. Two XII century anonymous pilgrims accounts refer to Famagusta, (Papacostas, 2014, p. 30) and a Pisan navigation manual names twice the "civitas famagosta" in the XII cent[16]. In addition, reference to Famagusta is given in the chronicles as the place where Richard Lionheart took refuge during the war against the Byzantines, finding the city abandoned in 1191.

"in initio noctis fugit apud Famagustam civitatem suam. Quo rex audito, in galeis suis ipsum coepit insectari, asserens eum perjurum et fidei trangressorem. Regi vero Guidoni commisit exercitum conducendum ad praedictum castrum Famagustam, initere terreno; quo tertia die perevenit et desertum hominibus reperit. Imperator enim sentiens se non esse tutum obsideri, ne incluso subterfugium, non pateret, in locis asperis delitescebat et nemorosis, ut nostris transituris insidiaretur, Rex Ricadus cum ad Famagustam venisset in galeis suis, maris portus stricitissime preacepit observari, ut si forte fugam attentaret comprehendetur imperator." (Vinsauf, 1191, p. 199).

According to the information provided by Vinsauf in 1191, Famagusta existed as a city, before the war, it was abandoned by the Greek population leaded by Kyr Isaac to move in higher location in a forest as a defence tactic, it had a harbour, it was a *castrum* (fortified city), there was an "itinere terreno" leading there from Limazun (Limassol).

"in planitie amplissima inter mare et stratam regiam, juxta civitatem de Limazun, (Vinsauf, 1191, p. 197)

The only two things we know for sure is that there was an urban settlement in that area at least since (1020-1050) and that it was named Famagusta at least since XII cent. e. So on one hand the material evidence of the city, on the other hand the immaterial source of its place-name. The two informations somehow seem to coincide somewhere in the XI-XII century, narrowing down the possible hypothesis on the foundation of this urban settlement. Therefore, this city definitely cannot be a Lusignan foundation, and it name cannot belong therefore to the medieval time.

Possible foundation dates of the urban settlement of Famagusta

Hypothesis A: ancient foundation, Arsinoe, Ammochostos

Hypothesis B: early Roman foundation, Famagusta

Hypothesis C: Arab foundation, al-Mau'dah, VII cent, arab founded city

Hypothesis D: relocation/renomination of former settlement, Salamis, Costantia, Constantina Avgvsta, Φαύστα wife of Constantius II (337–361), but cfr. Also Nova Justinianopolis, (middle VI cent.) (Hill, I, 288)

Hypothesis E: early Byzantine foundation, named after Constantine's mother FLAVIA IVLIA HELENA AVGVSTA, or daughter Constantina Avgvsta, or Φαύστα wife of Constantius II, Αἰκατερίνη wife of Isaac I Comnenos, Ἄννα Δαλασσηνή, Mother of Emperor Alexios I Komnenos, they all held the title of Augusta

Hypothesis F: Arab-Byzantine foundation

Hypothesis G: late Byzantine foundation or renomination, post 965 reconquer

Hypothesis H: Medieval foundation or renomination, Famagusta (cfr. Augusta in Sicily, founded by Frederick II, 1232)

The early appearances of the name *Famagusta* (XII ex. Pisan portulan and in 1211, Wilbrand) seem to rule out option H, together with the earliest appearance of the settlement of Famagusta (1020) which could indeed have another name at that time. The existance of smaller city walls is attested by Elias' description in 1563 at the time when Venetians were building the new walls and their position is shown in detail in the model of the city in Venice, wrongly referred as Morea. "It is a fortified town, girt with a double wall, commanded by a fine large and solid castle" (Elias of Pesaro, 1563). Konrad Grünenberg's city view shows clearly that the city walls in 1487, eventually before the Venetian rule (1489), were surrounded by a moat, the city walls also show crenellations and windows at a lower level.

16 Gauthier Dalché, P. (1995) *Carte marine et portulum au XIIe siècle. Le Liber Existencia riveriarum et forma maris nostri mediterranei*, (Roma: École française de Rome), p. 129, 171

Conclusions

The layout of the urban settlement, as given by the cadastral plans[17], shows a central core with a prevalent orthogonal street grid based on a modulus of 71 m, which is typical of Roman and Hellenistic urban foundations. The streets outside of this area follow a complex curvilinear pattern, leading toward the central part and therefore apparently attracted by the central core. With the exception of the cathedral, there are no Christian churches inside the central core. There is instead an interesting alignment of churches along a curve surrounding the central area, which we could interpret as a fringe belt. If there was, an early planned pre-Christian urban settlement in this area, it the later development the construction of Christian temples would have prevalently been localised outside of the existing built area determining therefore a fringe-pattern. Following this phase, the further development of the street layout and the surrounding urban tissue, would have been based on converging paths, leading to the gates of that earlier settlement. We assume that the location of the Palazzo del Provveditore, formerly the King's Palace, and the main square, corresponds with the Gates of the earlier settlement. In addition, we can notice the alignment of most of the medieval churches along a curvilinear path, leading from the territorial route following the coast towards that same square. Unfortunately, most of the original medieval urban tissue of Famagusta was demolished during the British rule, and the stones used for the construction of the Suez canal in Egypt, so there is not much left of that original configuration (Walsh, Edbury and Coureas, 2016). Nevertheless, the configuration of the routes inside the city walls, is probably conservative of the original one, and can be used to infer some information about the diachronic evolution of the urban settlement. The urban settlement of Famagusta can tentatively be dated to the I century BC as a Ptolemaic foundation celebrating the restitution of the island and dedicated to Arsinoe IV, and was later Romanised as *Fama Augusta* after the battle of Actium in 31 BC.

17 Department of Lands and Surveys, Cyprus, 1930.

Figure 1a. Francesco Bertelli, Partie orientale de Chypre, Venetiis 1570, Bibliothèque nationale de France, Département Cartes et plans, GE D-13952; **1b.** A view of Famagusta shows the city walls before the Venetian transformations, Konrad Grünenberg, Beschreibung der Reise von Konstanz nach Jerusalem, Bodenseegebiet 1487, Badische Landesbibliothek Karlsruhe, Cod. St. Peter, pap. 32, ff. 26v-27r.

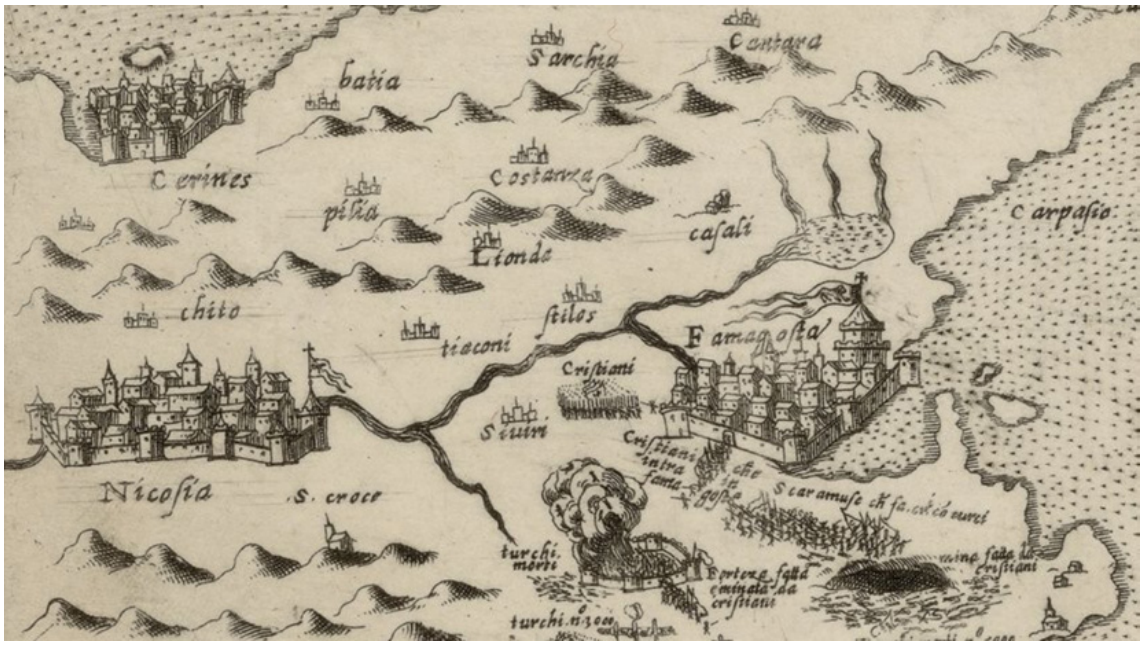


Figure 2. Map of Cyprus, Book of curiosities, 1020, Bodleian Library, MS arab. c.90, fol. 36b.

Figure 3. In red the limits of the planned orthogonal urban centre, in green the first fringe belt determined by Christian buildings surrounding the urban core, in green the original route connecting to Salamis attracting the position of medieval churches.

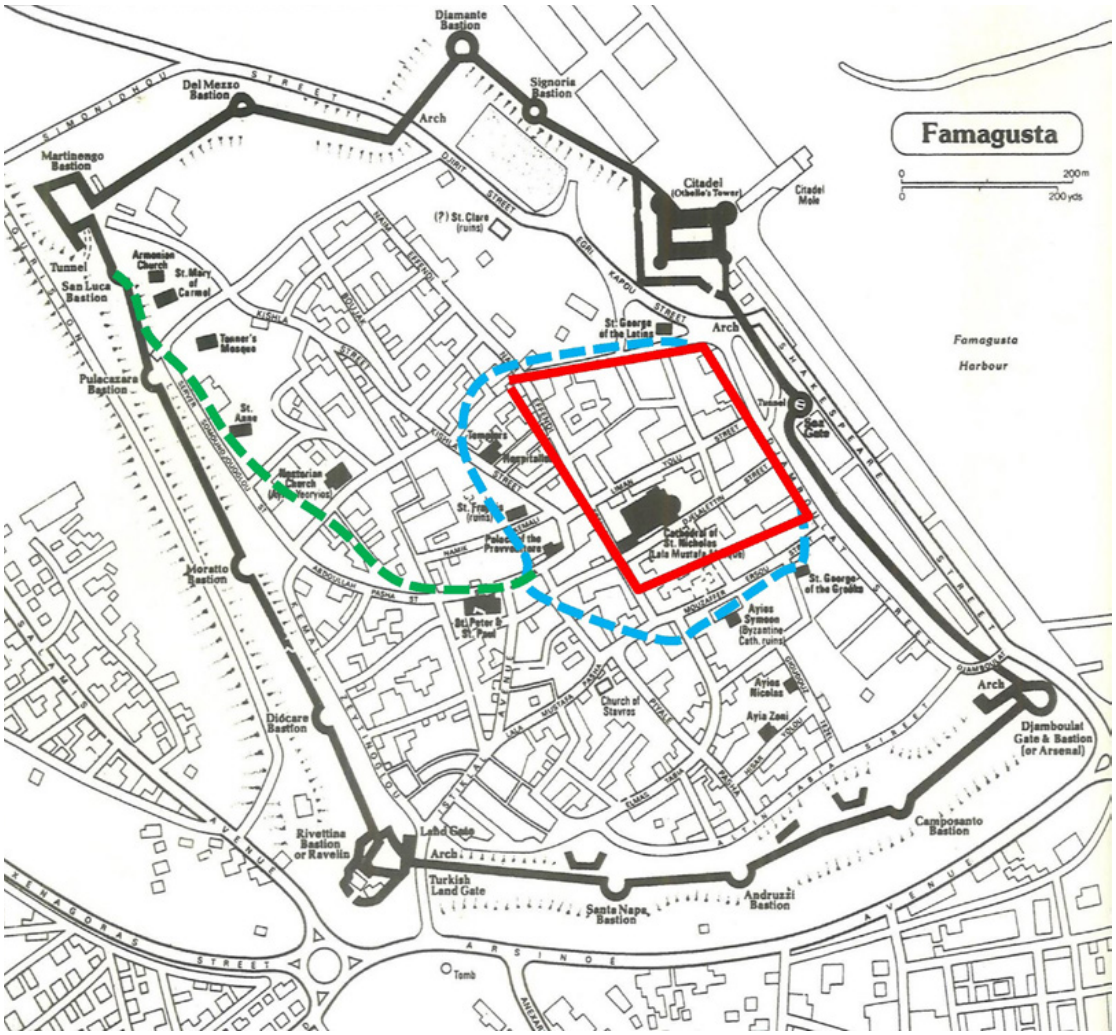
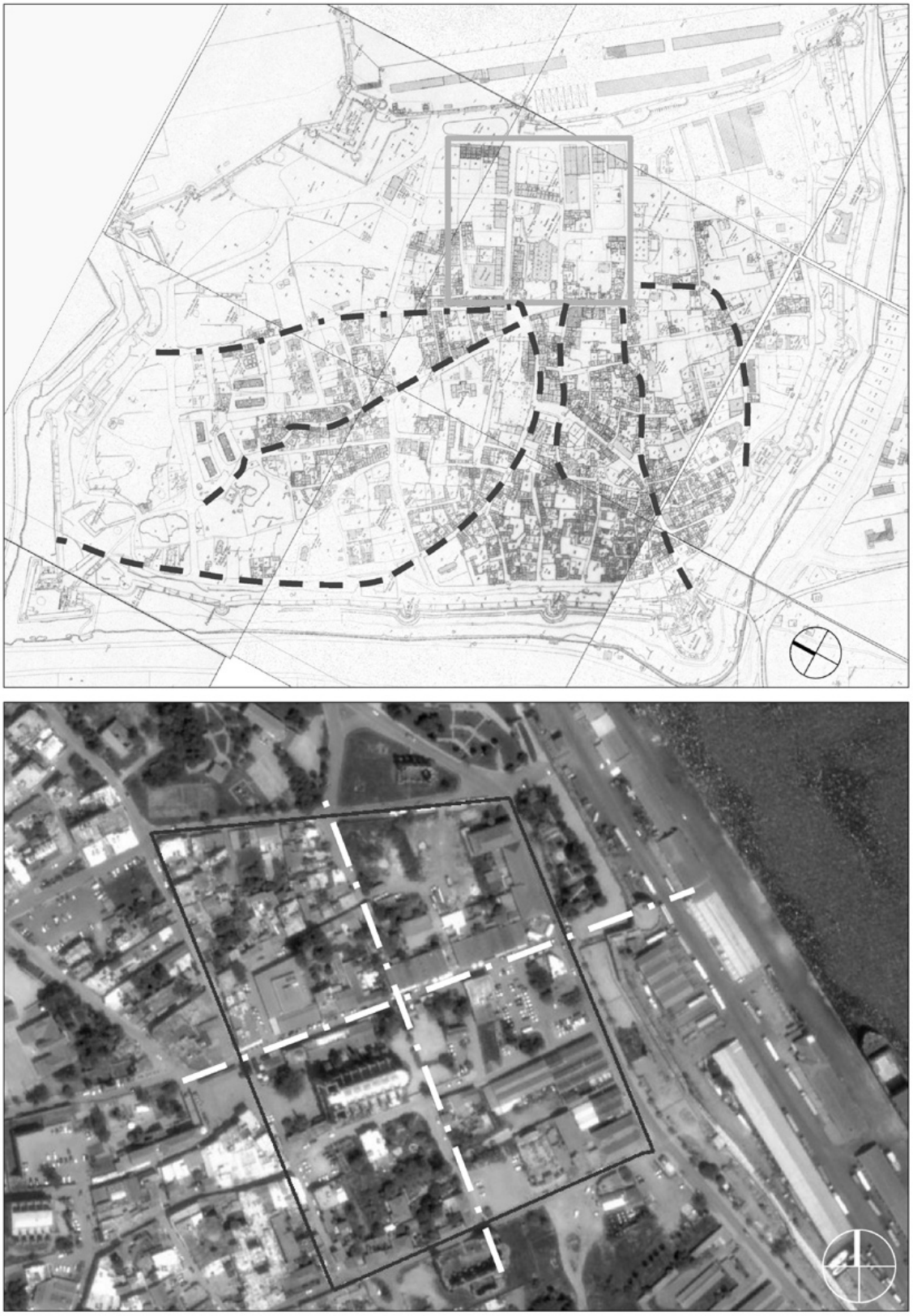


Figure 4a. The planned orthogonal urban centre attracting the medieval urban routes, author's elaboration on the mosaic of Famagusta's cadastral maps, Department of Lands and Surveys, Cyprus, 1930; **4b.** The limits and the axis of the planned centre of Famagusta, author's elaboration on Google Earth, 2017.



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Historical urban patterns overlapping in Mediterranean old towns: the case of Roman, Muslim, Christian cities and updating urban renewals in Valencia (Spain)

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Valencia city -the third one in size in Spain, laying on the Mediterranean coast- offers an optimal case of historical urban patterns overlapping into its old town –Ciutat Vella, almost the whole city until the beginning of 20th century-. Roman Valencia -Valentia- was founded as a settlement by the banks of river Turia, in an island in those times near the coast. After a short Visigothic re-foundation, the city was early conquered by Muslim invasion throughout Iberian Peninsula, growing in size by embracing the ancient city. With the re-conquest of Christians in 1238 the city reached its final size by the construction of Christian wall precinct in 15th century, and enlarging the existing Muslim city with new areas and void space to be covered. As a result, those three different circles can be red in the current city, as a successive addition of urban belts such as other cases in the Mediterranean scene.

Those historical urban periods are perfectly recognizable in Valencia, and a scheme of their shapes offers an optimal textbook case for other cities on the Mediterranean. In addition, further urban renewal interventions updated the city along 19th and 20th centuries. Two of them, the main interventions in a haussmannian style, were opened throughout the existing city in relationship with the historical parcels and those three historical patterns. The last one, unfinished and rejected in 1975, becomes a unique case of rationalist-expressionist both layout and collection of buildings.

Introduction

Valencia city -the third one in size in Spain, laying on the Mediterranean coast- offers an optimal case of historical urban patterns overlapping into its old town –Ciutat Vella, almost the whole city until the beginning of 20th century-. Roman Valencia -Valentia- was founded as a settlement by the banks of river Turia, in an island in those times and near the coast. After a short Visigothic re-foundation, the city was early conquered by Muslim invasion throughout Iberian Peninsula, growing in size by embracing the ancient city. With the re-conquest of Christians in 1238 the city reached its final size by the construction of Christian wall precinct in 15th century, and enlarging the existing Muslim city with new areas and void space to be covered. As a result, those three different circles can be red in the current old city as a successive addition of urban belts such as other cases in the Mediterranean scene. Those historical urban periods are perfectly recognizable in Valencia, and a scheme of their shapes offers an optimal textbook case for other cities on the Mediterranean. In addition, further urban renewal interventions updated the city along 19th and 20th centuries. Two of them, the main interventions in a haussmannian style, were opened throughout the existing city in relationship with the historical parcels and those three historical patterns. The last one, unfinished and abandoned in 1975, becomes a unique case of rationalist-expressionist both layout and collection of buildings.

Ciutat Vella, current old town in Valencia

Old Town in Valencia –literally *Ciutat Vella* in local Valencian language– appears as a whole, recognizable unit into the modern city. It maintains unchanged its character of leading the entire city, and the main municipal and regional institutions lay into its boundaries. However, *Ciutat Vella* is the core of the capital city of the autonomous regions of Valencian Land, its historical head –as said in Valencian language *cap i casal*, head and headquarters- and the plot of land of relevant historic events from Roman times.

Even so, Valencia city is the third regional capital in Spain, behind Madrid and Barcelona, and –nearly– before Seville, Málaga, Zaragoza and Bilbao. Valencia is a conurbation of 47 municipalities, 45 of them small and medium villages and one town –Torrent is the seventh city in the region in population– laying as satellites around the big centre,. So, Valencia, with a population of 800,000 inhabitants, is the centre of a metropolitan area of 1,000,000 more in the surroundings, where Torrent is near 80,000.

But Valencia city experienced a huge growing along the 20th century as the rest of big cities in Europe. In fact, *Ciutat Vella* –Valencia *old town* in Valencian language– arrived to the end of 19th century almost as the entire city, with a light urban connection to the coast and some suburbia outside the wall. At that moment, in 1910 *Ciutat Vella* represents almost the 60% of the urban patch on the territory. In 2000, *Ciutat Vella* is centre of a huge city, covering just the 4% of the urban surface. Despite this explosive growing, the centre has maintained unchanged its character and its role of a big, historical and active centre of both the city and the region.

As the city was founded not in the coast, but some kilometers inland, from the Middle Ages a big connection to the coast was established, at the point where started to grow Valencian port. So, the city shape had always the historic image of a nucleus connected to the coast almost in a biological cellular layout. The natural conditions of geological , alluvial plain settlement, provided the city to spread out in a concentric sprawl.

From the urbanistic point of view, in comparison to the rest of the city of Valencia, the core part of *Ciutat Vella* is not a homogeneous, historical urban pattern. It is the result of overlapping different historical periods, where Roman, Muslim and re-conquest Christian times are the main urban highlights that even can be red in the basis of the streets pattern.

Old town urban periods

Roman Setlement

Valencia lays on the Medtirerranean coast, and it is a Mediterranean city, but it doesn't lean out on the Mediterranean. The city is a Roman foundation 7 km inland, on a island of the river Turia in Roman times. The reason of this distance was double because of the unhealthy marshes by the coast, and the unsureness of settlements over there. In addition, Roman skills to dominate territories decided a new (Benevolo, 1978), third settlement instead of choosing one of the two tribal Iberian main centres in the area: *Saguntum* (current *Sagunt*) and *Edeta* (current *Llíria*). The coihce of one of them should ruin the Roman conquest and intentions.

So, *Valentia* –the Roman Valencia– occupied the north slope of an island on the river Turia, where a river port was in activity. This urban area can be identified in the current city around the Cathedral –*la Seu*–, where a some rectangular pattern of streets reminds the former Roman blocks. It corresponds to *La Seu-Xerea* quarter in *Ciutat Vella* (Sanchis Guarner, 1989). The confirmation of that is the discovering of Roman foundations in several archaeological campaigns on the occasion for new building excavations.

The Roman city was indeed abandoned in the 3rd century after the collapse of the Roman Empire. But a short time after Visigoths re-founded the city and relaunched it as an important centre on the West of the Iberian peninsula. Visigoths converted *Valentia* into a religious centre, by the construction of a pre-romanesque cathedral –part of its foundations can be visited at the present under a 19th century huge building by the current cathedral– and where the cult to a local saint until started till nowadays: Saint Vincent. However, the Visigoth city did not arrive to cover the former Roman extension and importance.

Muslim city

In 711 the Muslim troops headed by Tariq ibn Ziyad and Musa ibn Nusair started the rapid conquest of Iberian peninsula from Northern Africa. The weakness of Visigoth Empire and the misarticulation of its territotires led to Muslim success and the creation of Cordoba Califate. In that context, the Visigoth Valentia was conquered and in the 9th century was already the big centre of East Andalus, *Sharq al Andalus*.

Balānsiya –the muslim Valencia– grew up rebuilding the Roman-Visigoth city and by filling to the South the river island still existing in Muslim times. In the 10th century the city was firmly walled and, as a result of the importance of the city in *Sharq al Andalus*, a huge, new defensive system was erected only one century after. In this moment –in the 11th century– the cubes or wall towers where reshaped and a second defensive lower wall –barbican– and a new moat were built as well. All that reinforcement shows the importance of the likely third city in the Iberian peninsula also in Muslim times.

Into the walls, the Muslim city embraced the Roman one, by created new areas into a sort of "Muslim pattern" with narrow, winding streets. So two urban patterns comprised the Muslim city: the one coming from the Roman grill and the new, real Muslim pattern. Both urban patterns can be identified clearly in current *Ciutat Vella*. The Muslim pattern lays in parts of East *Carme,* North-East *Mercat* and North *Sant Francesc*, all them adjacent quarters to Roman area of *La Seu-Xerea* quarter.

Chirstian enlargement

The re-conquest of Muslim Spain by Christian troops started very soon, in 722, from the unconquered North of Spain, by a continuous progress to South .In 1238 the Muslim city of *Balānsiya* was re-conquered by Christians, and became the capital city of the new Christian Kingdom of Valencia. Only two centuries after, in the 15th Valencia was the biggest city in Spain, the main port of Aragon Crown, and a focus of art and culture in the proper Valencian language, where an own *Golden Age* took place – in that moment, even two Popes, Calixt III and Alexander I, emerged from the region.

The Christian walls form the 15th century defined the final shape of current *Ciutat Vella*,

by hugging the Muslim town and rising up a new Chrstian precinct after drying the Southern small branch of the river. Valencia stopped being an island to become a riverside city. The Christian city supplemented the Roman-Muslim patterns with a new area on the West in a mediaeval grill, and by leaving several void spaces into the wall for the inner city growing. These new, the more recent urban pattern in Ciutat Vella is still alive in the city, even containing very few monuments and fine buildings. This urban pattern is directly recognizable (Cullen, 1974), walkable and protected as well as the rest of *Ciutat Vella*, in *Velluters* quarter, and the rest of *Carme, Mercat* and *Sant Francesc* quarters out of Muslim city.

Urban renewal interventions

That Christian city of Valencia grew up through centuries by fulfilling the vacant spaces into the walls. In the 19th century the clogging of all the void areas headed the city to build up in height, by raising from 2 story to 5 even 6 story high buildings at the end of the century. All that produced the bad hygienic conditions in both ventilation and insulation that announced the imperative urban interventions in a Haussmannian way.

Haussmanian 19th century

The Christian walls were finally demolished by 1862, into the process of sanitation of the city. New enlargement plans for the city –*Ensanche* plans in Spain– started to be developed from 1884 in the southern skirts of the existing city. The fast growing out of the walls forced to plan inner urban renewals in order to update the historic city in connection to the new, successful *Ensanche* city. As the enlargement plans had their Royal approval in Madrid, these inner interventions were one of the requirements to launch the local *Ensanches* improvements.

In this context of urban renewal, some interventions were developed in Ciutat Vella, all them located in the areas next to the main South-East *Ensanche*. Huge areas were refurbished to create a new civic center in S.E. of *Ciutat Vella*, by moving the Town Hall from the Cathedral area to a new location on the current site near the new modernist railway station. In another inner location, an elegant, new Parisian street was open in a real Haussmannian style in the area between Roman and Muslim areas in N.E.: *calle de la Paz* –Peace st–. It represents the local scale paradigm of this kind of interventions. Initially very critizied while the construction, 10 years after became the centre of modernity in Valencia. The categorical trace or the street, as well as the unity of modernist and eclectic facades, gave the success to the intervention.

In an urban sight, this new street was wisely opened by evading main monuments –very common in that ancient Roman vicinity– and getting it right by focusing the trace on one of the baroque iconic tower of a church in the city. This intervention appears clearly in *Ciutat Vella* maps as an example of modern updating of the historic city in the that century.

Later 20th century

As said before, along the 20th century Valencia grew for more than ten times in extension and, in parallel, different punctual interventions were developed into the city core according to different planning periods. As a general scope, three main periods occurred attending the two milestones of the Spanish Civil War and the protection plans from 1984 following the works in Bologna.

In 1911 and 1929 two inner renewal plans were drawn for *Ciutat Vella* from the Municipality. The first one by town hall architect Federico Aymamí included two new avenues, but it was never initiated. The second one from the next town hall architect Javier Goerlich just considered only one avenue in the West side of the city, and a series of small street corrections – it was not also never executed (Llopis and Lagardera 1998). After the war, in 1939 was decided the approval of a detail of the second plan: the *Avenida del Oeste*. It finally started in 1941 and stopped unfinished in 1975 only in half the original length. This was the biggest intervention ever planned and executed in *Ciutat Vella*, and became one of the only examples of planning delineation and buildings collection following rationalist expressionist lines

(Urrutia, Ángel. 1997).

After the interventions of city protection and refurbishing in Bologna in the 80s, the time for protection plans started in Valencia as well. A collection of plans in 1984 and the 90s for the different quarters in *Ciutat Vella* drew a series of small interventions modifying the urban pattern in part. Small, ancient streets were modified by widening or extending to create urban connections. In these cases, the historic patterns started to disappear, and the reginal government department for culture guided the situation by ruling with a final protection law to preserve from that moment every historic trace within old town.

All these urban pattern changes covering the Avenue biggest intervention and the series of smaller corrections, produced a new city image in plans, but also included in some cases new building typologies something alien to the traditional buildings and historic context. Besides the West avenue on *Velluters* quarter, every other intervention locates on Muslim and Roman areas at North-East *Ciutat Vella* because the 19th century interventions updated South-East ones as written before.

The final image of interventions from 19th and 20th centuries in Valencia old town shows an affected historic urban pattern over the previous Roman. Muslim and Christian overlapping.

Conclusion

In Valencia, its historical *Ciutat Vella* core is the result of both a growing in history throughout Roman, Muslim and Christian conquest periods, and the addition of the urban renewal interventions theories from 19th and 20th centuries. The specific natural conditions of its geographic location in a coastal, alluvial plain facilitated its concentric geometrical growing in a *fried-egg* shape. The case of Valencia is an example for many other cities in the similar context of Valencia, such as a city in the Mediterranean basin founded by the Romans, suffering Muslim invasions and re-conquered Christian.

The appreciation of the same or similar historic pattern additions than in Valencia can be red in several other cities in Southern Europe. However, the clearness of the geometric and concentric growing process of Valencia case study defines a real Valencia *Ciutat Vella* model to be identified in other contextual locations.

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Issues on type and construction in the rioni of Rome built after the unification of Italy, the "casa d'affitto"

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The essay proposes a multi-criterial examination of Rome's late 19th century tenement house. After the city's annexation to the Italian Kingdom, immediately it began the construction of new rioni (the traditional Rome districts). This involved the densification of peripheral parts of the historical city that mostly was characterized by religious buildings, vine yards, villas and gardens. For example in the Rione Esquilino, the few existing residential buildings were aligned to roads established in the late XVI century by the pope Sixtus V. These roads were the basic framework for the expansion projects.

Thus, in all the rioni, the influence of building type to urban pattern was secondary, as the relative position between preserved structures strongly influenced the various dimensions of blocks. Contrariwise, major influence on the urban form on a lower scale must be attributed to the configuration of the building type, which again is determined by construction techniques as well as the limits imposed to speculation by the building code.

The paper presents the results of a research on the tenement house, that under a constructive point of view is based on three parallel masonry walls, main façade, asymmetrically positioned spine wall (for the fundamental introduction of the corridor in the apartments plan), and back façade. They were stiffened by other few perpendicular walls. A description of constructive components is offered in relation to the social, political, economic and technological context. Seeking the "lowest common denominator" of the building organism, the research was able to fill some gaps of links between construction, architectural design project and city in the 19th Rome.

Introduction

In 1886 the Italian translation of Herman Grimm's *Die Vernichtung Roms*, shows the astonishment of «a Rome whose citizens are scattered in all the countries» (Grimm 1886, 10). This acrimony towards the transformation of the *eternal city* in the capital of the particular Kingdom of Italy, with «rows of colossal six-storeys houses without any architecture» (10) is motivated not so much by the destructions of individual monuments, as by the fast deleting of an entire urban system. An old Rome organism consisting of equilibrium between monumental secular or religious polarities, nucleuses of urban fabric, concentrated mainly at Monti, Campo Marzio, Vatican and Trastevere, and several historic villas, gardens, orchards and vineyards, inside and outside the Aurelian-Onorian Walls.

Instead, though the economy of time and resources, and beyond the irrecoverable losses, today we recognize cultural values in late XIX cent.-Rome that are not limited only to the historicization of architectonic works, but also considering them as material evidences of a new technical and social modernity in the city. Until 1870 appearance and topography of modern Roma were still those defined in the *Nuova pianta di Roma data in luce da Giambattista Nolli l'anno 1748*.

After 20 September 1870, Rome annexation to the Kingdom of Italy, a new city quickly took shape. Among various contradictions, there main qualities of urban transformation are a global revision of the hygiene measures in the neighborhoods, of the mobility, of the minimum building requirements to guarantee a certain quality to the housing and to the streets, especially through the Pontifical Building Regulations of 1864 and the Italian Regulations of 1887.

Unfortunately, Caracciolo notes, the urban development of the capital «takes its disorganic, occasional, anarchic character» (1956, 56), but it is possible, after many years, to find specific characteristics, in the way of designing and building, the *modo di costruire*, which qualify it as historic heritage. Thus the study takes into consideration simultaneously the type and construction, with particular attention to the role of the built façade, and investigate them in the important passage from the papal Rome, crystallized in the aesthetics of the *ancien régime* and sublimated from the romantic one, to the bourgeois modern one. The goals of modernization are reached in a certain traumatic form, which is mantled in the deliberate academic formalization of the architectural objects, as in a *modo di costruire* that rationalizes traditional techniques and materials and engages them with the products of industry.

New *rioni* - districts - based on building typologies

The new districts are distributed within the city-walls, following some directions already drawn before the taking of Rome with the location of the Termini station and the tracing of Via Nazionale (Insolera 1993; Caracciolo 1956). Even if the soils were generally leveled, requirement of a modern city, the road mesh on which the building fabrics are aggregated is strongly influenced by historical routes. The main axes of the Esquiline district remain those traced from the Sistine plan more than four centuries ago.

The numerous documents kept in the Capitoline Historical Archive confirm that, methodologically, works of designers and companies, even before the imposition of the master plan, based on two types of building: the *casa d'affitto* - tenement house - and the *villino* - cottage.

This study deals with the first, the multi-storey house named *casa d'affitto*, because it's the one most closely linked to the constitution of a compact city within which the historical-constructive survey can also be functional to the reading of the environmental and safety performance of buildings and open spaces (Cecere and Currà 2017). In literature, many studies have been devoted to the reading of urban fabrics generated by the aggregation of the *case d'affitto* on new road systems and the researchers questioned the characteristics and the origin of the type. Spagnesi considers it directly: «an adaptment of the noble *Palazzo* type to the current houses: usually the Sangallo models […] which were very well suited to this modification» and, in the research of a basic type, claims that it should be recognized «in

corner solution of the blocks» (Spagnesi 1974, 46). Also from the point of view of the façade architecture, he considers that formally «therefore there was nothing to be invented, except to refer, as usual, to the figurative traditions of late Roman mannerism, adapting planimetric and warping systems of façades to new and more intensive needs» (46). Noting though that «It was not possible to repeat mechanically the pattern of the facade of Sangallo [for] problems, of correspondence between image and contents of the building» (47).

In the opinion of Vaccaro and Ameri «the derivation of the multi-storey house from the row house is gradual with the great enlargement of the XVI cent» (Vaccaro and Ameri 1984, 89). They, in a slightly different way from Spagnesi and, as we will see from Caniggia himself, argue «the new building type is defined trough the practice of the modification of the existing ones»(90). Actually at that time designers and builders had engaged in progressively replacing the system based on masonry cells, with bidirectional links dimensionally equivalent, with a parallel load bearing walls with single-spans of different sizes.

As we shall see, the breakdown of this two-way link is strongly induced by an important property required for the frame of the house: the flexibility of the layout plan in general and, more rarely, floor by floor.

Even Vaccaro and Ameri, when questioning in depth on the type, go to define, alongside the basic-type, two main variants having to note that: «the corner variant and the infill variant [named 'T'] are so diffuse to become concorrential to the main type.» (90).

On another side, the research conducted by Caniggia is more interested in the substantial differences between pre-Unification building type and the *casa d'affitto*. While he is interested in the design tools, notes that: «Since the building substitutions of the late 18th, we want the house to be transformed into a *palazzo*, the special building that can be more closely assimilated»(Caniggia 1989, 19). Thus, in the search for appropriate characters to the bourgeois rental house he considers that: «The allusion is not therefore to a single palazzo, but to some of the factors of the palazzo evolution [...], among them, mostly three draw the attention of the designers of via Nazionale and Esquilino: the rhythmic wall with identical interaxis, the hierarchy in floors elevation, the symmetry, then the marked preference for odd interaxes in the openings. Three ingredients almost totally unrelated to the previous basic construction» (20).

The research also suggests to quote Caniggia's words on the typological analysis that sound like an effective conclusion on the topic: «Concerning the right "building type", the multi-storey house, it is necessary to note a series of considerations. First, if it is true that the type appeared in seventeenth century in Rome, when the town achieved a population of one hundred thousand inhabitants, precisely in the year 1600, it is also true that dwelling types changed during the post-unification enlargement of Rome. Mainly for the need of the middle-upper bourgeois user, being the new quarters of the capital destined to such class:

for a long time the lower classes for census had to be placed in the fills and elevations, which increased in the old city.» (20).

Types among society, plan/façade and plan/urban fabric

Thus, to proceed to a description of the type, that among common cases bring out the greatest common divisor, we will follow the definition of Quatremère de Quincy, which seems even more appropriate when analyzing the real manifestations of the type in constructed objects: *«the type […] is an object on the basis of which everyone can conceive of works that may not resemble each other at all»* (Quatremère de Quincy 1844, 2 IA-Z:573). Therefore it is not a model, in which *«everything is right and stated»,* but in it *«everything is more or less vague»* (573).

Our case studies are all representative of the functional and architectural response to the housing and business needs of the fine de siècle society. The *casa d'affitto* is based on private capital, collected through Italian, or mainly foreign banking system. Capital is invested in the creation of dwellings and shops in relation to the different levels of income or employment of the bourgeois class. Sometimes the main house of the client-investor is included in this social context, mainly in the buildings of small investors, rather than in the large blocks of the companies.

The case of the workers' houses is different. By nature and organization they present original distribution and aggregation solutions. In such a limited industrial city, they are located just in the areas of San Lorenzo and Testaccio, so much so that the main authors of manuals and handbooks of the time always illustrate in parallel the tenement house and the workers' house through Italian and European examples (Sacchi 1874; Donghi 1923).

The *casa d'affitto* is therefore a building of 5 or 6 storeys, served by a staircase that is accessible from a common entrance hall. In this way the flats all-coplanar. Very often there is a basement, totally of partially underground. When there are shops at the ground floor, the basement is totally underground and it is less hygienic and intended for cellars or complementary stores, while on the contrary if they are absent, the basement is partially underground and consists mainly of dwellings. The apartments, therefore, overlap on different levels, and the characteristics, mainly of height and planimetric size, could change according to the variety of tenants, that the investor intends to intercept.

The range goes from socially-promiscuous cases, where, for example, there are mezzanines on the shops forming together a monumental base under a *noble floor* which hosts families of the upper middle class. On this *noble floor*, with decreasing planimetric height and dimension, take place the flats of the employees with a decreasing height overlap.

A first reduction of the variability of apartments are the solutions with double noble floor, on the 2nd and 4th floor. They alternate housing for two types of users slightly different in income.

Finally, many buildings rationally present the same altimetry and plan configuration in each floor, although they may present façade decorations that allude to a difference between the different floors. Therefore, the correspondence between the architectural façade and the presence of housing hierarchy is not obvious. (Vaccaro and Ameri 1984; Spagnesi 1974).

The entrance hall in the houses for wealthier inhabitants is large, because the carriages, with lateral access to one or more stairs and to the bottom of the courtyards; instead in the poorer houses the atrium is generally very small, giving direct access to the staircase.

The influence of the building type on the general plot is manifested in the option for the orthogonal system as Caniggia effectively summarizes: «The construction of the last decades of the nineteenth century leaves no doubt about the prominence of the multistorey-house in the forms of palazzo and the orthogonal urban fabric allows the most suitable location.»(Caniggia 1989).

But type and plot change with a certain flexibility. In fact, the main lines are substantially those of the Sistine period and the pre-existences strongly constrain the very variable dimensions according to which the blocks are cut out. Consequently, the widths of the individual buildings (between 15 and 30 m) are also variable.

The two building regulations quoted (1864 and 1887) are decisive for the volumes realized. They regulate the maximum possible height, ie 25 m in the first and 24 m in the second regulation, and the minimum width of the courtyard within the block, which became necessary in the 1887 regulation, given the more intensive exploitation of available land.

Since construction companies often built on large lots, several stairs and different accesses served buildings. Sometime the architectural configuration of these large blocks is solved in a single long façade, other time the unitary work is formally divided in several buildings through the design of different smaller facades in place of a single one. A famous example of this last practice, given that it is also reported by Donghi in his handbook (Donghi 1923) is that of the block 30 of the Castro Pretorio convention (named Macao), where an entire block is a single building with 10 stairs and ten different elevations in façade.

Building type and *modo di costruire*

The considerations on the relations between building type and its construction are the result of a systematic research on case studies through constructive survey and photographic documentation, in comparison with archival documents and contemporary technical literature.

The research activity, organized by means of a GIS, was based on the inventory of residential buildings carried out over the fixed period of time (1871-1900). It consists of 1500

buildings grouped mainly in 21 *convenzioni* – contracts - o *zone di ristrutturazione* – urban renovation. Preliminary surveys were carried out for a significant group of them, nearly 30% (450 buildings), including photographic details of the whole building and of characteristic components. Almost 250 buildings presented advanced degradation phenomena or the occurrence of construction sites, which allowed the constructive analysis and the relief of the façade building components.

After having set them on the GIS base, we selected 55 cases, for which carried out the constructive survey of significant elements of the entire façade. The main criterion adopted is the balanced representativeness of all the constructive solutions found in the 450 basic buildings. The comparison between original documents, buildings, and secondary sources (historic manuals, journals, tariffs and specifications) leads to narrow the survey on the *modo di costruire* of the *casa d'affitto*.

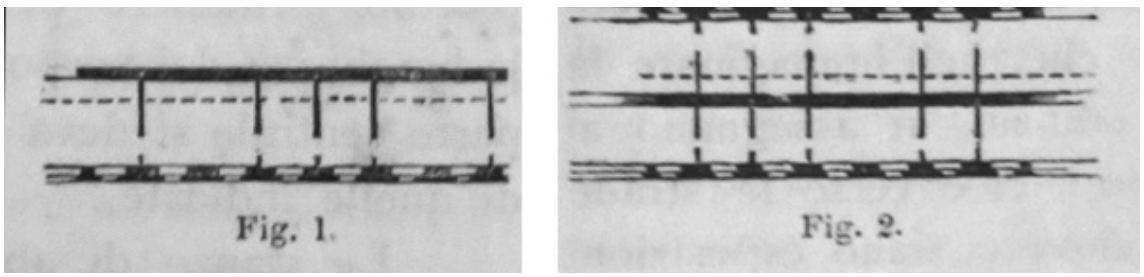
For the construction of the new neighborhoods, the firms and their technicians develop and spread a building system based on masonry and iron components. This system, despite the marked continuity of the Roman construction tradition, in materials and mortar, has its own well-defined characteristics closely linked to the productive (local building materials), economic (real estate deals) and social context of the moment.

Traditionally, in the houses of the Rome Medieval, Renaissance and Baroque urban fabric, the structural system based on square cells of the load-bearing walls (Bascià, Carlotti, and Maffei 2000). Each room is confined by four equally bearing walls and covered, depending on the plan and the budget, by masonry vaults or wooden floors. The construction of the *casa d'affitto*, despite being made of walls of the same materials, presents technical innovations and structural differences.

First of all, it has a different construction organization in which the task of unloading the horizontal weights is specifically given to parallel walls that support mostly steel-and-brick floors, attributing to the transversal walls just the role of stiffening.

Consequently, the houses are structured on simple, double and rarely triple planimetric parallel bands – in Italian named *corpi* - or various aggregations of them (Fig. 1, Fig. 3). The reduction of transverse main walls allows material savings and provides greater flexibility in the plant, given that the subdivision of the rooms is done with light thin partitions. Furthermore, redundant openings are arranged in all the main walls to make all the rooms on each floor communicating and to be able to group rooms in apartments of different sizes.

Figure 1. Scheme of the two main structural principles for multi-storey buildings: single and double building masonry structure - corpo semplice e doppio. (Sacchi 1874)



A certain flexibility in plan was the first fundamental requirement for this type of building. Because: «one can say, [it] gathers in its womb all the social classes, and provides them with houses and workplace for arts and crafts, must therefore satisfy the most disparate needs» (F. 1878), which had to overlap in various stories.

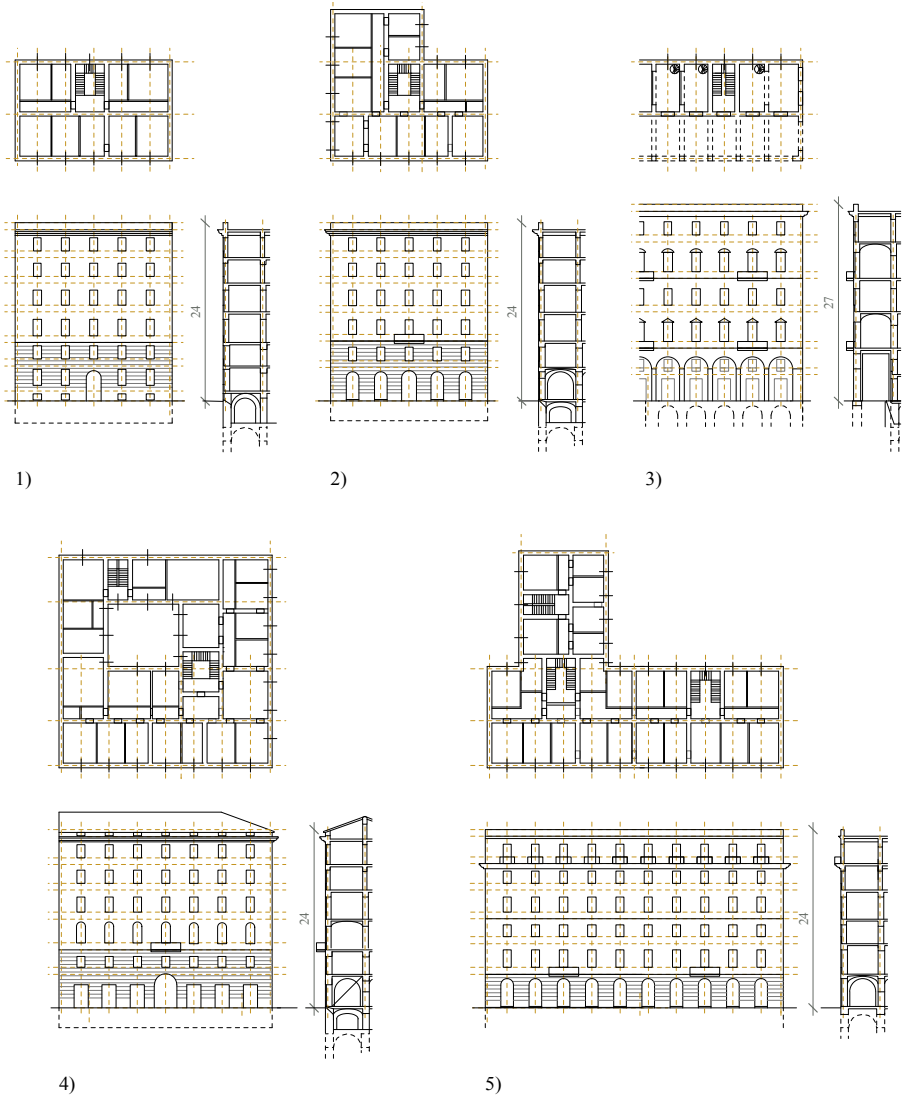
Among the structural schemes mentioned, the most widespread character is that of the longitudinal asymmetry of the plan, in which the one towards the pertinent area has greater depth to accommodate the corridor along the spine wall. It distributes all the rooms and represents the other fundamental innovative element of the nineteenth-century housing compared to the old house with communicating rooms.

Other widespread patterns are the result of perpendicular intersections of simple and double buildings, which in this way generate those houses previously called 'corner' or 'T', to

which we must add the variant to a enclosed a small courtyard (Fig. 2).

Figure 2. Typological schemes of the late 19th century roman tenements house, casa d'affitto, reassuming the main properties and morphological variants

1) elevated ground floor + basement floor, weak storey hierarchy, 1 entrance, 5 façade axis, corpo doppio.
2) shops + cellar, weak storey hierarchy, intersection of 2 corpo doppio (corner solution)
3) shops + cellar + mezzanine, portico with columns or pillars, double noble floor, corpo doppio.
4) shops + cellar + mezzanine, large entrance hall (carriage passage), noble floor and gradual storey hierarchy, attic storey, 1 entrance, 2 staircases, 7 façade axis, corpo doppio e corpo singolo arranged around courtyard.
5) shops without cellar, two or more entrances and staircases, pairwise stories a single ground storey, storey above main cornice, 10 or more façade axis, intersection of two corpo doppio ("T" solution)



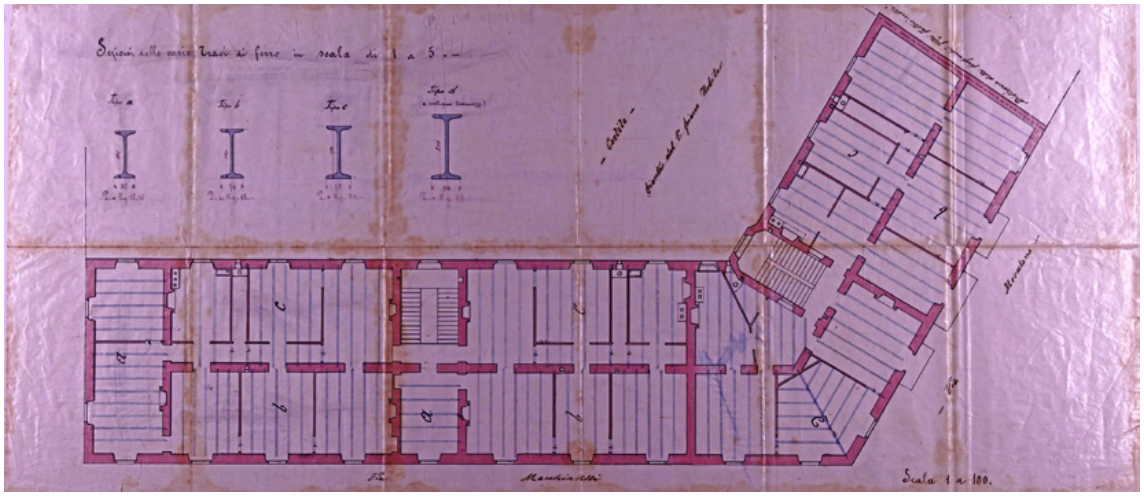
These structural principles, aggregative and distributive, found in the Rome, are described in the handbook of the Milanese Archimede Sacchi (1874) and resumed in the relevant review on the state of the art in Turin by the aforementioned author with the acronym "F.", who writes about it in the journal *Ingegneria civile e le arti industriali* (1878). As far as calculation and

sizing are concerned, almost all the historical manuals refer to the indications of the Rondelet (1834) and illustrates as examples the *corpo doppio o singolo* buildings (base on three or four parallel main walls). The propositions for the project and the definition of the types, reported in the manuals, are based on rules anchored to a treasure of universal knowledge and when considering the architecture of the facades it's important to take into account the international milieu of technicians of the time. In fact in the project of the façades we find the «imitation of the language of monumental building [...], referring to an international modeling, through the dissemination of architectural manuals, cultural exchanges and [...] of architects, following the great real estate, trained in other cultural areas.» (Vaccaro and Ameri 1984).

Next to the requested planimetric flexibility, the second fundamental requisite that influences the *casa da affitto* is economic sustainability, as F. also reiterates: «The rent house has, for those who build it, the exclusive purpose of making the most of its money; it must therefore be made in such a way that it can give the greatest proportion between this fruit and the capital spent».

The economy in the construction - which only in some cases detected leads to the construction of bad quality - is a feature of the entire spectrum of rental houses, from that destined for the upper bourgeoisie up to that only for the lower middle class, as it emerges from the following description from a constructive point of view of its factory elements.

Figure 3. Floor plan of a typical tenements house in the Esquiline district, project drawing kept in the Archivio Storico Capitolino – Rome. (Tit.54 Prot.31221 Anno 1884)



Characteristics of the building organism

In the description of the building organism we will summarize what is related to the type and the façade.

Starting from the foundations, the houses are based on masonry piers, which are often dug at different heights and go down over 12 m in search of a supporting soil. They cross large non-bearing anthropogenic layers (many new districts arise on the most densely urbanized areas of Rome ancient) and, frequently, ancient galleries of *pozzolana* quarries.

Laying the building only punctually on piers connected with arches, which represent the basis for the continuous walls above, meant therefore a saving in terms of time, manpower and building materials.

When the building hold shops, at the ground floor we find the same structure of pylons and arches, thinner, in order to obtain flexible spaces for different size shops.

The most common type of masonry, next to that one made of bricks, is the mixed masonry of tuff stone, alternated with layers of bricks, in which sections consisting of blocks of tuff (ca 20 to 30 cm in the face) alternate with a double layer of bricks at a distance of 0.5 to 1 m, always corresponding to the height of the floors, window sills, flatbeds, equally dividing

the intermediate wall portions. The tuff is a traditional (and the cheaper) building material in Rome, and it has the ability to bond very well with the traditional mortar of lime and *pozzolana*. It gives a solid masonry even in minimal thicknesses (on the ground floor around 75 cm) as the one prescribed by the coeval manuals (more than 90 cm). This is made possible, despite the often chaotic equipment of the stone, by the consolidating brick applications, and the abundant use of the very good *pozzolana* mortar (about 40% of the total volume) that makes it close to the concretion wall. Changes in the arrangement of the bricks in the wall certainly exist in correspondence with the openings (windows and door jambs, arches, etc.), the corners of the buildings (quoins) and the main walls on the ground floor, where the mechanical stresses are maximum (F. 1878). They are built of regular disposition of bricks but the arches and flat arches are often in opus mixtum with alternating bricks and well-squared blocks of tuff (Fig. 4). The local ornamental stones - travertine and peperino - is widely used on the ground floor as a thin cladding of slabs in the *zoccolo* (required by building regulations) or using large blocks inserted deeply into the wall, up to man height.

The covering of the cellars (when present), due to the greater accidental load on the ground floor is realized with real brick vaults or in concrete pouring with tuff.

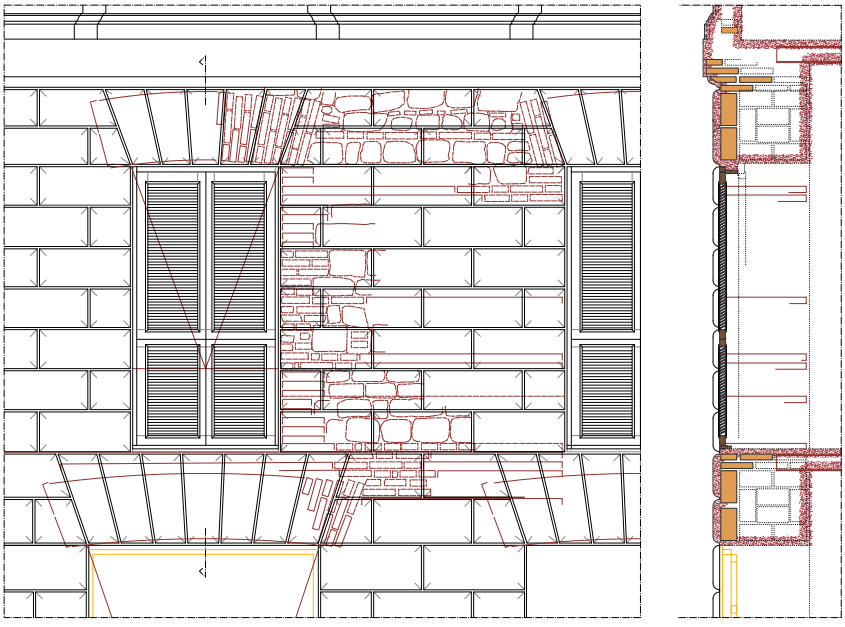
In the other storeys, the techniques for the horizontal covering are lighter and faster. The coverage of the ground floor and the main floor, if destined to a larger and richer housing, is performed with the so-called *volterranea*, that is, a thin cross vault or sail dome, with bricks placed in plane, presenting a very short rise.

In all the remaining floors there are slabs of simple warp of 'double-T' steel beams at a span of about 80 cm, laid on a brick curb and filled with brick vaults (Fig. 3).

The use of quick setting mortars, based on gypsum, or pozzolana, made possible a very fast realization. Given the ever-increasing cost of wood at the end of the nineteenth century (Cantalupi 1862), steel, often imported from abroad, becomes competitive and traditional systems such as the *regolo per convento* (Giovannetti 1989) or the heavy masonry vaults are soon abolished in the construction of the houses. Wodd use little more survives in the pitched roof, made of unfinished and cheap joists.

The use of steel also spreads in other elements of the factory: small iron bars serve as a support for the "rustic" walls of small stucco cornices, window tympanums and other decorations applied to the smooth wall surface. Large *double-T* beams are the structures of considerable overhang of the main cornices and balconies, among which there are vaulted brick bricks.

Figure 4. Example for the survey conducted on building elements in constructive scale (originally 1:20), window of a mezzanine storey



Balconies of travertine structure worked by the stonemason are present only in the wealthiest houses (mainly in the balustrade), while the *peperino* is the common material to create overhangs, also for cornices, however coated with plaster and stucco.

The façades are almost finished exclusively with plaster and stucco painted to imitate precious traditional materials: travertine, peperino, brick curtains or white marble (Pallottino 1986). The eclectic ornamentation, generally based on the architectural style of the Renaissance palaces, is richer than that of the ordinary building of pre-unitary Rome (Scavizzi 1983; Giovannetti 1989) and it is expressly requested by the building regulations.

It consists not only of simple cornices made with *modano* (or *modine*), but also of elements such as *dentelli, ovoli, modiglioni,* etc. made with plaster matrices on site but also with molds of special cement mixes out of the work. Giovanetti talks about the «rebirth of the stucco artist's art»(articolo Giovannetti). The plaster facade, as also reiterated by coeval authors (Cantalupi 1862; Sacchi 1874), is finally possible thanks to the resistance to weathering of the Roman pozzolanica mortar, while only the plasterer makes the rich ornamentation that gives dignity to the rented house economically feasible, not sustainable using stone.

Conclusions

The connections between type and construction constitutes an original link system and is an important evidence of the historical epoch within which it manifests itself and of which it is an expression. The architectural organism is more complex the more one enters into the various themes. It is the result of different skills and knowledge, which converge on the field of the architectural and urban organism. The buildings under the plaster and stucco already hides a multiplication and specialization of skills and knowledge in the evolution of the building process to modernity.

Firstly, the formal characteristics and the outward of the city are strongly based on the academic training of architects and engineers of that time, pertaining to the debate on the style to be adopted for Rome capital (Muratore 1991). The study of the *casa d'affitto* states the echoes of this dispute that focuses mainly on monuments and great competitions (*Palazzo di Giustizia, Parlamento,* etc.), and notice in the dwellings a more or less sober adoption of the Rome renaissance style.

Actually, the building type also shows, in the distribution and placement of apartments, an effective overview of bourgeois society of the late nineteenth century, at the time of its political and economic affirmation in Rome.

Then Modernity, as production and rationalization of construction and evolution of techniques, is fully represented by the building organism. At that time, we can place the stabilization of *a modo di costruire* that had a profound influence on the characteristics of the modern twentieth century.

The beginning of a tradition of lexicon and construction manifested in the mixture between masonry tradition and new techniques fruit of industrial evolution. At the end of the nineteenth century the protagonist is the iron-masonry binomial, from the early twentieth century it is the cement-masonry one.

Thus if in general there are some buildings for which a specific architectural value has already been recognized, for all this heritage we are dealing with works, widespread, with a significant stratification of cultural values, and relevant aspects characterizing the XIX century urban society, and the relationship art-technique, towards the modern. It's important to reduce the impact of any adaptation to new use not only on *form* or on *appearance* but also on *construction* as an expression of cultural heritage. The historical construction study has recovered and offered again to the use of constructive principles that define the rule of art and a first form of guarantee for the conservation and maintenance of good behavior of similar structures.

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Historical domestic architecture in the old city of Taranto. The palace and the "tower house" typology

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The research is based on several studies and reliefs started in 2013 about noble palaces and churches built in the old city of Taranto between XVI and XVIII century. This analysis will focus on constructive and typological characters of the main historical residential buildings, which can be subdivided in two categories, located in two different area of the island (upper and lower part).

The first typology is the "palace" that can be found in the part of the old town where, during the ancient time, there was the greek acropolis. It is an aristocratic building that takes its characters (entrance hall, decorated portal, vertical connection system) from baroque noble palaces of Naples whose greatest architect was Ferdinando Sanfelice (1675-1748).

The other typology of residential housing is the so called "casa a torre" located in the lower part of the island of Taranto, exactly on the filled area close to the little commercial harbor, used mainly by fishermans. It is a building made in local stone called "carparo" with a very simple plan where the wideness is smaller than the highness and its length. This "tower house", built close each other, define different compact blocks separated by narrow streets called "postierla".

Finally, the paper will underline how the two typology are strictly connected to the social use, in particular to the persons which used them that influenced even the urban settlement of the island.

The old historical centre of the city of Taranto (Apulia), enclosed within the perimeter of the peninsula (then island), arose on the ancient Spartan acropolis of Taras, and then, in Roman times, after the total destruction of the Greek Polis, it developed on Tarentum reborn along the path of the new *Via Appia*. This article will make an urban and technical reading of the ancient city focusing in the Baroque period when the main interesting historical and cultural architectural works have been built and they still exist today. This analysis will also examine the technical and typological characteristics of the main historical residential buildings which can be divided into two categories, located in two different areas of the island (upper and lower part).

The first kind of residential building is the "noble palace" that can be located in the part of the historical centre where, in antiquity, there was the Greek acropolis. It is an aristocratic building that takes its stylistic elements (decorated portal, entrance-hall, vertical connection system) from the Baroque noble palaces of Naples, whose greatest architect was Ferdinando Sanfelice (1675-1748). The other type of residential housing is the so-called "tower house" located in the lower part of the island of Taranto, exactly on the filled artificial area near the small commercial port, mainly used by fishermen. It is a building made of local stone called "*carparo*" with a rather simple plan in which the width of the front is smaller than the height of the building and its length. This "tower-house", built close to each other, defines several compact blocks separated by narrow streets called "*postierla*".

Since its foundation, the city of Taranto has been planned to have an extraordinary relationship with the natural environment and any study of the urban form and the architectural character of historic buildings cannot ignore the complex surrounding environmental morphology. The first Greek foundation core was enclosed in an isthmus that stretched longitudinally in an east-west direction. The urban fabric over the centuries, has developed on a rock 15 meters high above sea level, washed by the sea on three main fronts. The peninsula became a real island in the *Aragonese* period (XV century A.D.), after the cut of a portion of land for the construction of the massive castle canal. The city, also known as the "City of the two seas", is surrounded by the Great Sea along the outer coast in the form of a semi-circular bay, and the reservoir of the Small Sea along the north-eastern coast.

The urban setting of the Late-Renaissance-baroque city is the result of the continuous and chaotic overlapping of working and alterations-design often carried out with reuse of old architectural remains. Today it is still intact in its urban historical layout and therefore retains a wealth of unequal architectural styles that show the development and transformation of the urban model through the centuries. The basic layout of the old town probably traces the ancient acropolis of Magna Graecia, while the subsequent Roman-Byzantine grid developed progressively occluding the spaces around the main axis, now called Via Duomo. This road presumably traces the ancient *Via Appia* that crossed the island from South-East to North-West separating the island into two parts: the upper part facing the Great Sea (average 15 meters above sea level) characterized from prestigious buildings and important monumental and ecclesiastical complexes, including the Cathedral of *San Cataldo*, the convent of *San Francesco*, the complex of *San Domenico* and *Santa Chiara*, all built from the Middle Ages up to 1700; the lower part (a few meters above sea level), overlooking the old port (*Mar Piccolo*) and consists mainly of popular neighborhoods with type of row houses, pseudo-row houses or tower houses, with a plan very narrow and long and with an important height (even 3-4 levels).

At the end of the X century, under the power of the Byzantines (emperor *Niceforo II Foca*), was built a seven arches bridge on the northern channel which connected the *Appian Way*, while, on the eastern side of the island, the coast was filled on the *Mar Piccolo* advancing 40 meters over the sea to facilitate the return of many emigrant fishermen in the decades of previous wars and destruction. In this period was born the public square, the current configuration of *Via di Mezzo* and the *postierle* that connect the lower city with the upper city, as well as the churches of *Santi Cosma e Damiano*, the church of *San Nicola sotto la Cava* and those of *San Marco* and *Lo Spirito Santo*, with Byzantine influence, all attested on *Via di Mezzo*. The latter became urban poles around which corresponding building blocks were formed from the progressive occlusion of empty spaces in the urban fabric around the churches.

A gradually defined urban-structure of Byzantine imprint rather than Norman-Swabian. In

the 16th century, therefore, the urban setting was defined by a hierarchical structure of the road network and by a progressive privatization of portions of the urban context. The main axes (*Via Duomo*, *Via di Mezzo*, and then *Via Garibaldi*), were mainly a public - commercial type with a wider road section for goods transport wagons, an almost straight line path and with the buildings and the artisan shops on them. The axes of great arteries connection, called *postierle*, placed transversely to the main axes, had instead a semi-public character characterized by a narrow stretch of road, sometimes steep and not rectilinear paths (passable only on foot) and which represented the only link between the lower part of the island (port) and the upper part (noble and sacred area). To complete this study of the form of the ancient city of *Taranto* in the Baroque period, there is to add, to the previous setting, a series of small streets mainly for private use, ending in small squares or dead ends.

In 1600-1700 there was a massive renovation of existing religious structures (specialized buildings), as well as the construction of new monasteries. Was renovated the convent of *San Domenico* and *San Francesco d'Assisi*, were made important modifications to the Cathedral of *San Cataldo*, was built the Sanctuary of *Monte Oliveto* and the convent of the Jesuits, was rebuilt the monastery of the Clarisse nuns, was build the stairs of *San Domenico Maggiore* church and were enlarged many smaller churches. In civil construction (base buildings), however, were built large buildings along the main axis of *Via Duomo* that still characterize the upper part of the ancient city. The construction of large palaces often took place through the incorporation of pre-existing minor buildings of the Norman-Swabian age, but, in many cases, involved the complete demolition of the previous building. Between 1600 and 1800 were built some of the aristocratic buildings such as *Palazzo Pantaleo*, *Palazzo Amati*, *Palazzo Galeota*, *Palazzo Ciura*, *Palazzo d'Ayala Valva*, *Palazzo Carducci Artenisio*, *Palazzo Troilo*, *Palazzo Ulmo*, *Palazzo Gallo*. These buildings were built on the basis of existing structures and were often erected on large underground quarries, from the Greek, Roman and Byzantine periods (quarries on the entire Acropolis rock) excavated in limestone (175,000 years of geological dating) and create to get the building material by generating large underground rooms used in various ways over the centuries.

These significant transformations of urban space led to the demolition of entire neighborhoods, without changing the urban setting, but generating a migration of many inhabitants forced to overpopulate the new spaces still left free in the lower part of the island. This led to divisions and indiscriminate increases on pre-existing buildings (tower houses) with serious repercussions on living conditions and on the hygiene and health of the neighborhoods in the lower part of the small sea. That area is partly still perfectly recognizable by the presence of long and narrow building blocks, separated by alleys perpendicular to the sea. Via di Mezzo will become an important urban axis of division between the neighborhoods of the upper part of the city and those of the lower part of recent construction (*fig.1*).

Noble Palaces in the high part of the old town

The study, drawing and survey of the noble palaces of the higher part of the city was carried out in a series of relevant campaigns from 2014 to 2016 throughout the urban fabric of the old city of Taranto[1]. This analysis involved the morphological and typological aspects of the most important noble palaces between 1600 and 1700 along the main axis of the ancient Taranto and the orientation on the side of the Great Sea, highlighting and updating, for each case study, the structural and technical aspects.

In the seventeenth century, when it began to impose a new social class from aristocratic landowners and merchants, even from Naples and Lecce, it begins a strong urban venture along *Via Duomo* and *Via Paisiello* (parallel to *Via Duomo* towards the great sea), constructing new large buildings with cultural and artistic elements of Neapolitan origin.

These large buildings, as already mentioned, have often been erected on already occupied land, incorporating existing houses into a new and unique building. Survey and comparative study of architectural peculiarities have highlighted the presence of basic elements of the architectural composition of these buildings. The projects often had a series

1 *ReDrawing Taranto (relief-redrawing workshop) carried out with the students of the DICAR Department of Bari. Professors Alessandro Iacovuzzi and Ubaldo Occhinegro (Courses A and B of Disegno dell'Architettura, a.a. 2014/2015 and 2015/2016)*

of invariants connected to the presence of paradigmatic elements such as, for example, a particular care in the design and installation of monumental portals, the constant presence of a courtyard or distribution atrium called "*androne*", the experimentation in the design of a monumental staircase of vertical distribution often open towards the inner courtyard.

Monumental palace portal is always built along the main axes and, in the historic palaces of *Taranto*, it is the first element with strong symbolic importance in a continuous spatial sequence that causes transition from public space, which is the road, to a gradually private space, that is the house, passing through the entrance hall (vestibule), the courtyard (internal atrium) and the monumental stairways, of a semi-private nature. The portal is an element that, with its dimensions, shapes, materials and decorations, invades the street taking the attention of the passer-by. From the constructive point of view, it can be divided into two main systems: the trilithic system and the lintel system, which, in turn, is divided into various forms and types based on the profile of the arch. In the context of Taranto portals there are different curvilinear profiles, as already mentioned, of Neapolitan influence: low arches, round arches, three-pointed arches or polycentric "*anse de panier*" or mixed arches. Alongside the building system, the formal declinations of the portals are enriched by a large number of typological variations related to the architectural order and to the type of plastic and formal decoration, with multiple combinations and experiments in the trabeation, in the pediment, in the pillars etc. Generally, the portal is framed by one or more concentric moldings that surround the opening, often treated with a complex curvilinear design and decorate with elements of reinterpretation of the classical architectural orders with Doric columns and arched architrave (*Palazzo Amati* in Vico Vigilante) or with pseudo-doric semi-columns leaning against protruding pilasters holding trabeate brackets (*Palazzo Gallo* in piazzale Monte Uliveto – *fig.2*).

Alternatively, we find round-arched portals with a spring line in the middle point between the center of the circumference and the key-arch, faced by circular shaped pilasters inwards (*Palazzo Barbato* in Via Duomo) or with a round arch molded (*Palazzo Ceci* in Via Duomo, *Palazzo D'Aquino* on Pendio La Riccia and *Palazzo Lo Jucco* in Piazza San Costantino);

Portals with a leonine figure and volutes with floral decorations supporting the shelves (*Palazzo Calò* on Via Duomo), or with convex splaying (*Palazzo Carducci Artenisio*, 1650 in Vico I Seminario) or with lowered arches (*Palazzo De Notaristefano* and *Troilo* in Via Duomo). Taranto's typological examples also sees polycentric stereotomic portals, that is, with a ashlar three-centred arch (*Palazzo Gennarini* in Via Duomo) or even with Doric capitals and a coat-of-arms in key-stone (*Palazzo De Bellis* in Via Duomo) or with bases (*Palazzo Fornaro* in Via Duomo – *fig.3*); articulated plastically with floral or geometric motifs in high relief or low relief (*Palazzo Zigrino* in Via Duomo), with pilasters supporting volute with angel heads also in the key-stone (*Palazzo Galeota* in Via Duomo) or with telamons on capitals with leaves and coat-of-arms in key-stone (*Palazzo Saracino* in Via Duomo).

Finally, there are portals characterized by curved surfaces that follow the curvature of the space, creating complex surfaces with double curvature and surfaces cut from the portal itself (*Palazzo Ulmo*, in Via Duomo – *fig.3*).

Most of these monumental baroque portals were made on *carparo*-stone or compact dark-colored tuff. Only in very few historic buildings of a certain noble importance it is possible to notices the year of construction and the name of the author. In most cases we can distinguish only the century of belonging and assign the work to local workers where the building largely testifies to a craft tradition that combines formal creativity with a deep knowledge of the drawing and cutting of stone on complex surfaces. A great variety of architectural elements in stone presupposes that the local craftsmen have had a strong influence from the French and Spanish architectural tendencies of 1600-1700 (techniques of the orthogonal projection method, stereotomy, etc.). In addition to the monumental portals, we remember the variation of form and the technical characteristic of the vaults of the ground floor rooms of the palaces, made with "*leccese*" star-vaults, pavilion vaults and, in the stairwells, we can find different original spatial solutions alternating oblique and sometimes rampant arch-vault.

The scenic suggestion is typical of Italian baroque, so the planned alternation of light and darkness seems to play an important role in the design of these noble palaces. The portal in close connection with the street and the sequence of light-dark-light (sequence street-hall-courtyard) recall the eyes of the passer-by who, through the atrium, penetrates into an

intimate space, the internal hall (vestibule), and sometimes in a small courtyard. In this empty space in the middle of the building, in most of the noble palaces of Taranto, is allocated an open staircase, often placed in front of the entrance, to visually seduce the passer-by. The alternation of rampant staircases and a series of vaulted structures creates different types of staircases, which generate a strong spatial dynamism. In some cases, the facade of the stairs follows the open space, thus the atrium has been transformed into a multidimensional perceptive context that begins with the portal.

The inner courtyard, in addition to giving light to the main rooms of the building, has an important functional distribution. In fact, many buildings of Taranto are equipped with external balconies open on the inner courtyard which is the only element of horizontal distribution for the upper floors.

Among the most significant examples of the noble palaces that have the canonical spatial sequence, portal - entrance hall - internal courtyard - open staircase, we find *Palazzo Barbato* in Via Duomo, with open staircase placed at the end of the atrium and set to three ramps with landing floor with lowered arch-vault; *Palazzo Carducci Artemisio* with a three-ramp specular staircase with a convex secondary portal for access covered by *Art Nouveau* canopy; *Palazzo Troilo*, with three ramps open stairways covered by round vaults and round arches in correspondence with the landings floor. In this case, the "stairs system" has remained incomplete because, looking at the attacks of some arches left unbuilt and looking at the empty space next to the existing stairway, it can be noted that a second stairway identical to that existing would have been built in the optics to define that background scene, typical of Baroque Neapolitan palaces; *Palazzo Gallo* with open staircase with three ramps.

In other buildings, there are small typological variations such as in *Palazzo De Notaristefano* in Via Duomo where the staircase is open but it is arranged laterally; *Palazzo Saracino* in Via Duomo where the open staircase has three ramps with a central atrium and a distribution balcony overlooking one side of the central courtyard.

The open staircase of the eighteenth century buildings, as already mentioned, is derived from the Neapolitan palaces starting from the sixteenth century and usually characterized by a single architectural and spatial volume with a complex structure that manifests itself through the dynamic alternation of ramps covered by vaults and a continuous changing perception of points of view. The lights and shadows created by the perforated walls of the stairs contain an added value in the spatial continuity between the courtyard, where there is the staircase and the road from which the staircase is detected. In this way, the open staircase, in the Neapolitan style, is an architectural reality that has the function of vertical connection but, at the same time, is a space in which there is a synthesis of different factors.

Ferdinando Sanfelice and the connection between the palaces of Taranto and the stylistic design of the Neapolitan palaces

A close compositional affinity of the elements mentioned above can be found in the Neapolitan palace characteristics. The protruding out and decorated portals in local stone, the compositional path: entrance hall (vestibule) - uncovered atrium - open staircase in the background.

Among the greatest exponents of this scheme, we find Ferdinando Sanfelice[2] (and his disciples), as well as the generation of architects who dominated the first decades of the eighteenth century in Naples: Giovan Battista Nauclerio, Domenico Antonio Vaccaro, Nicola Tagliacozzi Canale, Sergio Attanasio.

In the Neapolitan noble palaces, the Baroque setting of the illusory effect of crossing the spaces, found both planimetrically and from a plastic-spatial point of view, is one of the peculiar characteristics in the design of the complex palaces of aristocratic families in competition with each other. The portal of invitation to access the entrance hall that generated a darkness such as to create a surprise effect between light and courtyard space characterized by the back wall (along the access axis) set as a "*scaenae frons*" (scenic front) of a Roman theater.

2 *Ferdinando Sanfelice (Naples, 18 February 1675 - 1 April 1748) was an Italian architect, painter and noble of the Baroque era, active in Naples, Nardò and Salerno at the beginning of the 18th century. One of the most creative architects of the eighteenth century Neapolitan, famous above all for the monumental open stairways he built.*

In Sanfelice, the model of open stairs at the end of the building's compositional scheme, was a brilliant invention capable of rewriting the elements of language and structure and able to interpret the courtyard wall (facing the street and hiding the staircase body) as a sudden dramatic front that combines to cross a system of ramps and vaults with an intelligent use of materials and colors.

The first examples of palatial models similar to the noble palace from Taranto, we find them in Naples as early as the sixteenth century. In *Palazzo D'Afflitto*, in via Nilo, the interior preserves a very unique open staircase, the only one of this kind in city. It rises on three floors and is characterized by a masonry wall adorned with composite pilasters. The structure, with a convex profile, has three openings along the entire façade: the largest, round, is flanked by two side openings, architraved and surmounted by a circular oculus. In *Palazzo Capone San Marco* (or *Palazzo Venezia*), on the other hand, the monumental staircase extends along the left side of the courtyard, assuming one of the typical architectural installations that characterize the stairs of the buildings of the city, that is three ramps overlooking the internal courtyard through the opening of round arches, of which the central ones are slightly wider than the lateral ones, which follow the course of the staircase.

With Ferdinando Sanfelice the constructions of noble palaces were increased, characterized by the characters described above. His works are realized in *Palazzo Capuano* (or *Caracciolo di Brienza*) in vico San Pellegrino where the atrium acts as a set with the stairs; in *Palazzo Lariano Sanfelice* in via Foria, built in the thirties of the eighteenth century on a project by the architect, we can find a monumental staircase composed by a double open stairway that rises through a system of vaults and pillars, accentuated by the metal curved balustrades that determine an expansion of the space; *Palazzo Sanfelice* in via Arena alla Sanità (the architect's residence since 1728) consisting of a long façade in which two identical portals open up. The first enters a courtyard with an octagonal plan at the end of which is one of the most unusual stairs designed by the architect that traces the inclination of the octagonal walls, in the second appears instead a typical Sanfelician staircase with "*falcon's wings*" even more suggestive by opening towards the back garden; *Palazzo dello Spagnuolo* in via Vergini, built in 1738 and traditionally attributed to Sanfelice, characterized by a double ramp staircase open onto the courtyard of the most typical of the Neapolitan 1700s, conceived as a sort of meeting place, in which there was a real social life.

Other Neapolitan palaces that reflect the characteristics of the civil architecture under study, are *Palazzo Miradois* in Via Duomo (*fig.4*) with a baroque staircase set in the courtyard which is accessed from the vestibule, characterized by double-vaults with hanging capitals (XIV cent.); *Palazzi Brunasso*, a pair of monumental buildings located along Via Toledo and organized around a long courtyard with Serliana on the side of the vestibule and open staircase with a deep loggia; *Palazzo De Sangro* di Vietri in Piazzetta Nilo with a ashlar piperno-stone portal and an open staircase to the courtyard; *Palazzo De Rosa* in Largo Regina Coeli, with an internal staircase from the late fifteenth century on the left side of the entrance hall and with a architraved system that imitates a serliana on the contrary, on two orders surmounted by a third floor used as a loggia; *Palazzo della Marchesa di Castelluccio* in vico San Geronimo with a double-arched staircase; *Palazzo Filangieri d'Arianello* in Via Atri, with a characteristic atrium on which overlook the open staircase and a protruding loggia supported by corbels; *Palazzo Ragni* in via Materdei, with a three-arched staircase with the central one lower, in Sanfeliciano style, originally open on the back garden; *Palazzo Tufarelli* in Via Benedetto Croce, with a courtyard in which there is a remarkable open staircase of the eighteenth century of excellent workmanship; *Palazzo Bottiglieri* in via Salvator Rosa, with an open staircase composed of lowered arches that constitutes a remarkable scenic backdrop; *Palazzo Medici* in piazza Materdei with internal staircase embellished with decorations and frescoes in the vaults and with steps in piperino-stone.

Further examples of Neapolitan Baroque style civil architecture built in Naples in the eighteenth century are *Palazzo Costantino* in via San Giuseppe dei Nudi with a staircase, which appears against the backdrop of the courtyard, set with rampant arches that connect the staggered stairs; *Palazzo Terralavoro*, in via San Severo a Capodimonte, presents a piperno-stone portal with chiselled decorations, an entrance hall with a vaulted ceiling, a courtyard with an eighteenth-century staircase by the architect Sergio Attanasio, who adapted a previous staircase. The ramps of the staircase are illuminated by openings in correspondence with the resting landings and covered by barrel vaults; *Palazzo di Majo*

on discesa Sanità with a typically baroque side staircase with a rhomboidal plan and a cantilevered structure where, on the resting balconies there are the entrances to the internal rooms (which repeat the same design of the portal); two palaces in via Materdei, the first with a single-entry loggia staircase that is articulated around a rectangular room, the second with an open loggia staircase, whose central arch is wider, presenting an arch with an elliptical profile; *Palazzo Palazzani* in Corso Garibaldi with an open spiral staircase; *Palazzo Persico* in via Pietro Trinchera with a simple and narrow façade, while the interior is crossed by a small hall from which you can see a compact courtyard with stairs at the end. The staircase has a particular peculiarity: it is set on a decagonal matrix plant, facing the space in front through arched openings; *Palazzo Trabucco* in via San Liborio, planted on the portal-vestibule-courtyard scheme, while in the background, in perspective, a staircase rises. It is open and set in three sequences of arches with staggered openings that coincide with the ramps. The four pillars of the staircase are decorated by pilasters with stucco capitals with flower's decoration, while the three larger openings have a piperno ledge that serves as a balcony; *Palazzo Mastellone* in Piazza Carità, by the architect Nicola Tagliacozzi Canale, is distinguished by the setting of the staircase in the courtyard and for the decoration of the facade, first of all the portal.

Figure 1. Location of Taranto case studies (graphic elaborations by A.Iacovuzzi, U.Occhinegro)

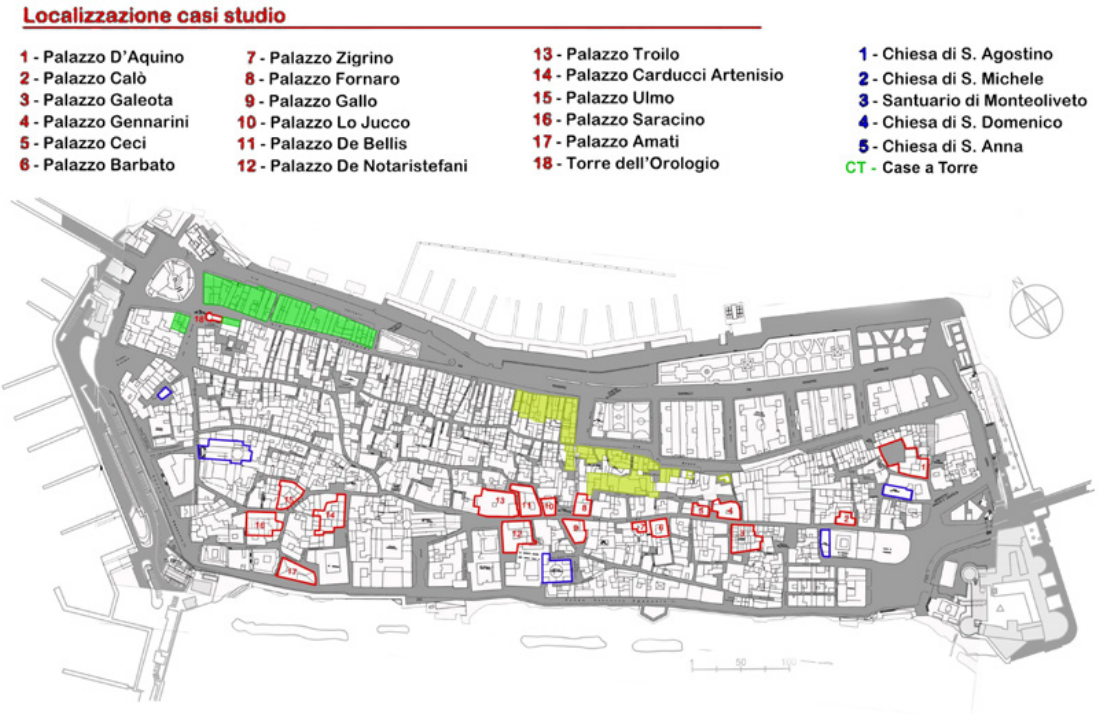

Figure 2. Palazzo Gallo, access portal on Piazza Monte Uliveto (graphic elaborations by A.Iacovuzzi, U.Occhinegro).

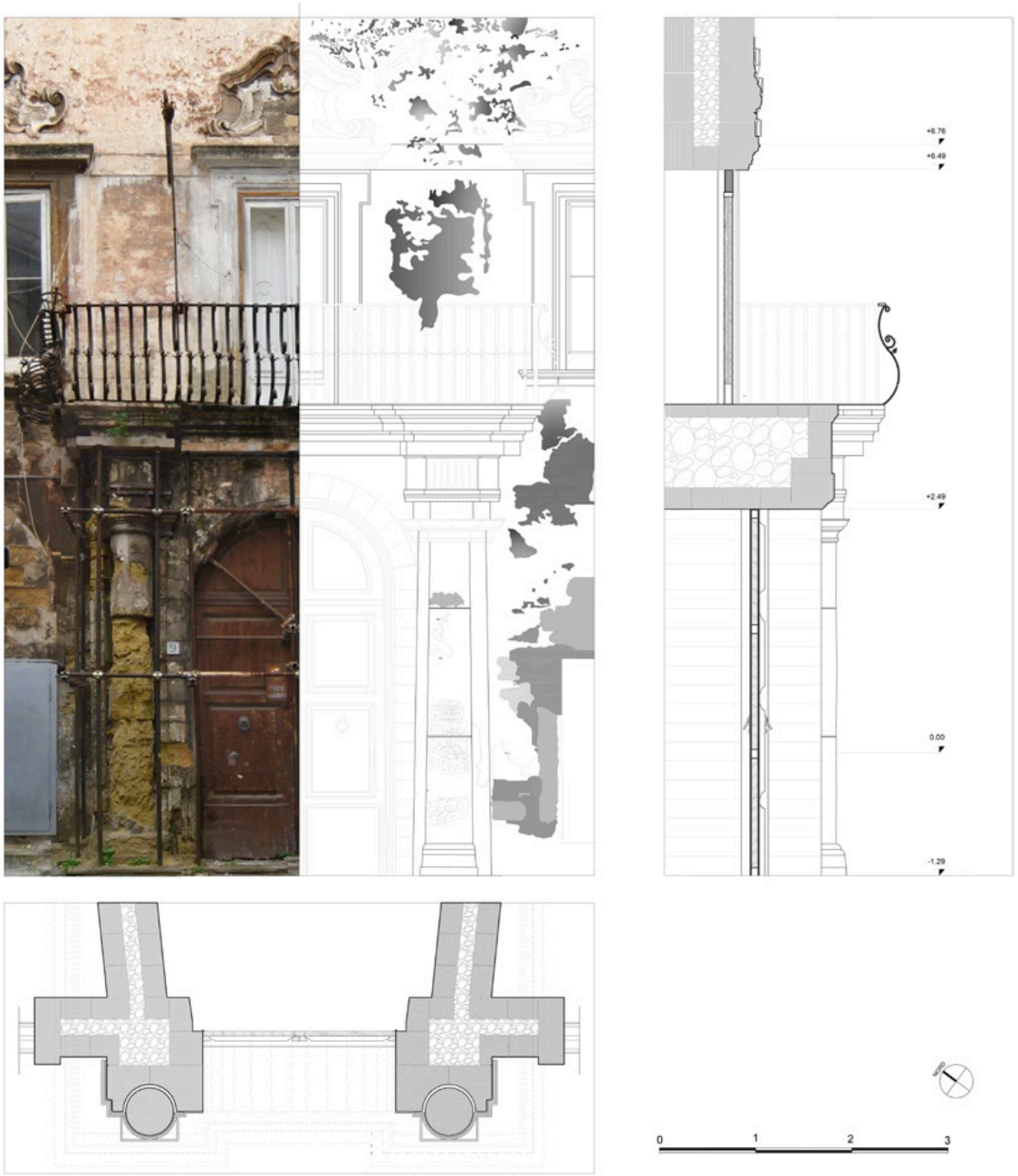

Figure 3. Axonometric sections of Palazzo Fornaro and Palazzo Ulmo (A.Iacovuzzi, U.Occhinegro).

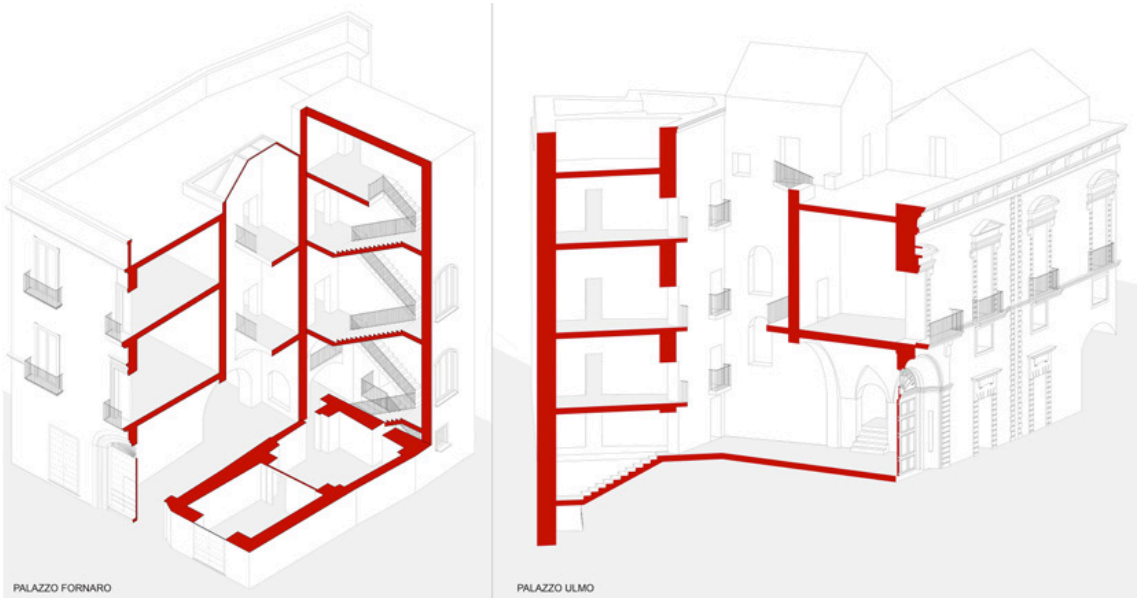

Figure 4. Axonometric sections of Palazzo Fornaro and Palazzo Ulmo (A.Iacovuzzi, U.Occhinegro).

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Tarragona: fragmented development of a city

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Keywords: *Tarragona, Fragmented city, Typo-morphological characters, Spontaneous consciousness, Critical consciousness*

The proposed subject is the result of the study realized by the Thesis Laboratory, coordinated by the Professor M. Ieva, in the dICAR department of the Polytechnic of Bari. The study analyzes the urban structure of Tarragona, a city in Spain, and tries to explain the complex evolution of the urban fabric extra moenia and how its linked to the existent walled city. The first part, built from the XVII century next to the walls, is built above the Roman Tarraco whose doesnt survive evident traces in the actual structure, even though appears as a regular planning system that doesnt seem to coincide with the former. This edification corresponds with a phase of an accentuated urbanization and, according to the historical documents, it also responds to a request of new urban residential fabric due to population increase. An important element for the definition of the new boundaries has been, on one side, the superficial hydrography, composed of the Francolì river, and on the other side the coast. The new urban fabric is built next to the coast and gradually reaches the natural limit of the river. The global urban development follows different orientations, often depending on the previous lying and on the territorial itineraries considered matrices of the new urban layouts. A first connection is realized between the upper and the lower part, which is actualized in the construction of the area between the current Rambla Vella and Rambla Nova. The orientation of the coast, instead, conditions the structure of the new district that connects the port to the built in the meantime consolidated. The present Rambla Nova is a structuring axis of the expanding district designed by Josep Maria Pujol i de Barberà, articulated on a structure defined by a central pole, the Plaça de la Imperia Tàrraco, which generates a series of radial paths and of relative controradial layouts, according to a model of behaviour that had found wide use in many European expansion plans.

The most recent developments in the urban fabric, which concurr to define a strongly torn periphery and lacking qualified hierarchies, seem to be affected by the strong industrial development that, since the last century, has produced a broad commercial and tertiary specialization with choices on the port system and on the infrastructural one that mark, even today, often negatively, the organization of the Catalan city, generating a strong incoherence of the whole urban system.

Introduction

The research work about the city of Tarragona has been realized during the activity of the Degree Laboratory coordinated by the Professor Matteo Ieva, graduands: D. Anelli, F. Bonerba, A. Brunetti, M. Campicelli, V. Cinnella, F. D. De Rosa, G. Pugliese, in the degree course in Architecture, Department DICAR of the Polytechnic University of Bari, in collaboration with the Professor V. Bagnato, the Professor M. Saura Carulla, from the Archive of the Urban Form in Barcelona and the architect J. Beltràn Borràs, with whom the results of the research have been shared.

The study reconstructs the development of the different phases of the *extra moenia* part of the city.

The analysis of the typological processes realized at different in-depth scales has allowed us to reconstruct the dynamics of evolution of the modern urban tissue. The city, today one of the four Catalonia's provinces, rises up on the coast and, during the centuries, has expanded towards north-west until the natural limit of the Francolì river.

Inhabited from the V century B.C. by the Ibers (oppidum Kesse), the city reached its maximum splendour during the Roman Period, when it was nominated as *Colonia Urbs Triumphalis Tarraco* and the great provincial forum was built, developing on three terraces the temple, the place and the circus, in correspondence with the actual historical centre. After Frankish, Visigoth and Arab attacks and invasions, that brought to the partial destruction and to a state of abandon of the city, between the XI and the XII century, a new urban fabric was built on the Roman pre-existences, using the ancient structures where possible. Until this moment, the city and its walls occupied only the two highest terraces of the ancient forum. But, in the XIV century, when the medieval fabric had been defined, there was an expansion of the city that lead to include into the walls the last terrace too. The structure of the urban fabric remained almost unvaried during the following centuries, but the building types went through a process of progressive adjustment for changed ideas of house, often producing a condition of excessive use and insufficient profit. Starting from the XIX century, the lacking sanitary conditions suggested a quick expansion of the urban tissue in direction south-west, towards the coast and the Francolì river.

The result is a city that cannot be defined as an organic system in its complex, if not barely ordered according to a hierarchy in its constituent parts: portions of tissue different between them can be identified basing on their structure, on the organisation of their blocks and on the building typologies that compose them.

Synthesis of the urban fabric's phases of development

In the urban system of Tarragona there is a very variable structure that allows to recognize four phases of urban fabric's development, starting from the meridional part of the ancient centre arriving to the two natural limits represented by the coast, at south, and the Francolì river, at north. All these phases of development of the *extra moenia* city are characterized by a generally ordered structuration, leaving space not very much to spontaneous episodes of structuration, and by specific typologies and different ways of buildings' aggregation.

1775-1869

In this period the city assisted to an economic and demographic recovery and the new commercial trades with America had a great influence on the choice of a new urban planning focused on the harbour area. This was planned towards south-west following the neoclassical guide-lines based on a grid developed around a central nucleus (actual Plaça dels Carros); the two structural axes of the new urban tissue, that started from this nucleus, were Carrer Reial (linking with the city of Reus) and Carrer de la Unió (linking with the Part Alta). The area was constituted by in-line and row houses, generally destined to the mercantile classes, in addition to hangars and little industries. Moreover, at half of the XIX century, the railway line Tarragona-Reus was introduced; considering that its walk came up beside the

coast, it forced the fishermen to abandon their residences and to move along the riverside. In this way, in 1865, the permission of building a new neighbourhood, El Serrallo, was allowed: here the fishermen built their wood huts, then substituted with residential buildings composed of small cells developed on three levels, of whom the lowest were used for commercial purpose. But the general arrangement of the area didn't appear as an ordered system and lacked infrastructures.

1870-1900

After the war against the French, it was felt the necessity of a new urban planning, capable of linking the existing urban nucleuses: on the north, the ancient city, surrounded by the pre-existing walls with the residential nucleuses of different social classes inside, and, on the south the harbour's neighbourhood (*Nova Poblaciò de Marina*). In this new urban tissue another route, the Rambla Nova, is added to the already mentioned carrer de la Uniò, that still has the function of axis and longitudinal link of the city from north to south. In this moment, the Rambla Nova becomes a new structuring axis, declassifying the parallel carrer of Sant Carles (today, Rambla Vella). The starting point of the axis, as well as pole of the same, is the Mirador or Balcò del Mediterrani, a wide belvedere that put the Rambla at a considering difference in height respect of the sea level. On the Rambla Nova there were buildings, mainly residential, that generally appeared as in-line houses. In general, the area of the new building plots was in a clear relationship with the context: in the Part Alta, in fact, it wasn't allowed to build great façades, contrary to what happened in the Marina and in the Ensanche. In the corner buildings it was preferred to realise the façade on the main route monumentally and higher then the one on the minor route.

Another important element of this urban tissue is the realisation of the Tarraco Arena Plaza in a depopulated area, mainly destined to plantations or country houses, becoming an antipole to the built tissue.

1900-1958

After suffering the economic crisis caused by the wars with Cuba and the Philippines and not being included in the process of industrialization involving other cities in Catalonia, Tarragona experienced a period of rebirth. Between 1936 and 1939, however, the city was bombed during the Spanish Civil War, thus leading to the destruction of several buildings, including the convent of Santa Chiara (at the end of the Rambla Vella towards the coast) in whose place it will be built a hotel several years later. During the first thirty years of the century an expansion plan (the third from the end of the nineteenth century), the construction of new specialised buildings and the introduction of sanitary standards for housing were proposed. Josep Maria Pujol de Barberà's plan, approved in 1922, envisaged an expansion towards the Francolì river, to the west of the consolidated city: unlike previous proposals, the urban plot should have followed a radial structure combined with an orthogonal system. The plan foresaw that a main artery, the present Rambla Nova, served as a structuring axis connecting the existing urban tissue to the Plaza Imperial Tarraco, a new important node on which the radial system was established, of which the carretera de Castellòn (now Avenida Ramon i Cajal) served as a lower limit. On this radial system the subdivision of the blocks would be established through roads of different orders; the circular squares would have given the area an idea of grandeur and regularity, especially the Plaza Imperial Tarraco, which with a diameter of 150 meters had the task of articulating the traffic of eight radial ways through a roundabout.

In this period, the most widespread building type is the aggregated in-line house: there is a transition from a single-family to a multi-family typology. Cases of more dispersed architecture are not excluded, as in the case of the Plaza de Salles, where thirty-two isolated chalets are built.

It is interesting to notice how in this phase the central role of the Rambla Nova is consolidated, which will keep up to the present situation: in the construction of new buildings it was decided to maintain a homogeneous and unitary configuration.

1958-2018

During the post-war, the economic recovery of the city was very slow. Large-scale industrialization developed in the late 1950s, taking advantage of the 1957 stabilization plan (first anti-huts plan of the city) and of the first Development Plan of 1962. The process was rapid, without controls, planning or forecasts of the consequences that the creation of different industrial polygons, mainly focused on the petrochemical industry and on a set of high-tech companies, would have led to. The industrialization process brought about a notable demographic growth, also leading to emigration from the countryside to the outskirts of the cities.

In 1960 the *Pla General de Ordenaciò Urbana* was proposed: this provided for zoning and infrastructural reorganization, as well as an expansion towards the east as a garden city. In general, the industries were built on the edge of the consolidated city, close to the river Francolì, while the expansion of the city took place creating small peripheral nucleuses mostly away from the center.

In the Eixample area, in the center part of the city, some reforms took place: in addition to the consolidation of the Rambla Nova as the central axis of the city, they took care of connecting the portions of the city to each other through the introduction of two avenues, carrer Pere Martell and avinguda Vidal i Barraquer. Other interventions involved the area of l'Oliva for a controlled planning of residential buildings, the Serrallo district to solve problems of isolation and closure to the city, and the area of Llevant, an area of urban expansion more detached from the city.

With the construction of new suburbs, the most widespread type is that of isolated buildings, especially in-line houses, which therefore allow both horizontal and vertical development.

Basic building

The most common typology in the lower part of the city is the aggregated and isolated in-line house, while row houses are more concentrated in the Serrallo district and in the first expansion tissue.

In-line house

The type present in most of the tissue of the modern city is the in-line house, which appears aggregated to other houses in the most central areas of the city and isolated in those more peripheral. The need for new living spaces derived from the demographic growth, that has occurred over the centuries, has made it essential to develop not only horizontally, but above all vertically, giving rise to the spread of multi-familiar residences.

The studied in-line houses generally have a central stairwell, although sometimes others are added. Given the need for new spaces in compliance with the sanitary regulations approved in those years, omnipresent elements are patios or courtyards, beyond which, in some cases, terraces are realised on the secondary front. The ground floors are generally designated for special destination, such as atelier, warehouse or commercial space, whereas those higher are used as dwelling. These one has long corridors and, as usual before, the most representative rooms overlook the street whereas the dining room overlook the courtyard. As concerns the treatment of fronts (whose width varies between 11 and 18 meters), it is not possible to establish a generally applied rule, especially on the Rambla Nova, where in the past the façade became an expression of the social status of the owners. The only element that seems to characterize more than one façade is the *boínder* (bow window), a jutting element recurring in the Catalan residential building.

An example of a synchronic corner variant is the Rosell house, located at one end of the Rambla Nova and distinguished by the decoration of the façade and a corner tower.

The aggregation does not generate a homogeneous and unitary structure, as the blocks are different from each other for occupied area and for the organization in plan. There is no shortage of examples of the re-fusion of row houses, especially in the Serrallo district and

in the fabric close to the old town, which can be seen in the internal subdivision and in the façade by the presence of the previous building openings.

Pluri-familiar row house

Although there has not been a wide spread of this type, in the portions of the oldest tissue, near the old town and in the Serrallo district, in addition to the in-line house, another type present is the pluri-familiar row house: the most widespread version found during the analyses generally includes a building plot of 5/7 meters of width for the double depth. Each house, which is developed on four or five floors, overlooks the route and a cloister, sometimes replaced by the overlooking the pertinent area at the rear. Moreover, in the Serrallo there are examples of row houses double facing the route, where the houses are aggregated to generate sticks and not blocks.

In this case too, it is quite recurrent to insert the *boínder*, a closed element projecting on the façade in correspondence of all the upper floors or just one of them: this solution allows to add more openings on the sides of the element, in addition to those already present on the façade.

Specialised buildings

The specialised building of the lower part of Tarragona consists of convents, factories, industries, churches and places for the community, all representing a different historical period. The convents, for example, are among the first to be built as isolated structures outside the walls, for being later incorporated into the tissue of expansion in the following centuries, until some of them undergo a re-functionalization.

The first factories date back to the nineteenth century, when there is an increase in the role played by the port; among these buildings, it is interesting to mention the Chartreuse, one of the major examples of industrial architecture of the time: realised next to the plaça dels Carros on an asymmetrical plot, due to the strong irregularity of the area of the old Fort Rejal, it was partly destroyed and rebuilt. The factory looks like a mono-axial serial building divided into three naves by two rows of pillars, a character that can be read on the façade through the scanning of the openings.

Whereas, the Tarraco Arena Plaza was the first and continues to be one of the main polar buildings of the city: born as an antipole during the second phase of expansion, it totally assumes the definition of pole in the following ages. The symmetrical radial planimetric structure is interrupted by an external square-shaped element, added to the main one, which allows the access to the structure. The building is developed on three floors, the upper two covered, and has an arena of 55 meters in diameter; the façade, with its 48 sides, is characterized by a polygonal configuration made of white stone and red bricks, used in the pilasters. Each span consists of an arch at the base and of mullioned windows in the upper floors.

Serial specialist building appears to be quite widespread in the lower part of Tarragona, especially in convents and other structures for the community. Some emblematic cases are the convent of the Discalced Carmelites, the Teresian College, the Caixa de Pensiones and the Chamber of Commerce, all buildings built near the Rambla Nova. The buildings have a strong horizontal development, a serial repetition of rooms organized around one or more courtyards and can be reached by a minimum of two staircases. The common areas are generally arranged near the court, whereas the more private spaces are located around the perimeter. The seriality of the rooms is made visible on the façade through an ordered sequence of openings, whose dimensions vary between the base and the upper floors. Another interesting element is a varied use of materials, going from brick to stone, creating some particular polychromies. At the corners, towers that interrupt the serial rhythm are realised.

On the other hand, the building of the Chamber of Commerce is an example of a synchronic variant: the basic characters are respected, but there are only one staircase and one court, choose due to the small dimensions and to the trapezoidal shape of the plot. On

the Rambla Nova there is not one of the façades, but the corner tower, which has become a distinctive symbol of the building.

In the end, a more recent case of nodal specialised architecture is the Gobierno Civil, constructed as an isolated building on Plaça Imperial Tarraco. The planimetric structure, almost rectangular, is set on a longitudinal axis that defines the main route. The building is developed on four floors, intended as the headquarters of the Civil Government and partly as residence for the governor and his collaborators. A particular organization of wider than higher openings makes the internal subdivision and the vertical development on several levels readable. The entire building is an isolated case in the architectural testimonies of the city, both for the planimetric layout and for the materials used (stone, bronze and glass).

The modern *extra moenia* city, therefore, does not present a unitary character for structuring the tissue and the building types, but appears rather fragmented: each of the phases corresponds to a portion of tissue that differs from the others. It is not possible to recognize a recurrent paradigm for the formation of the isolates, nor a general rule for the structuring of the routes, but the tissue seems to follow different rules that, as we have seen, belong to a specific historical period. Despite the cases of reconstruction of individual buildings, each piece of tissue is also recognizable by building typologies: from a greater diffusion of row houses in the quarters in the port area and close to the walls, they pass to a large use of aggregated in-line houses first and then isolated. Moreover, it is possible to notice how today along the Rambla Nova, clearly the main axis of the city, and in the adjacent streets, most of the commercial activity is concentrated. The port area, on the other hand, is mainly for residential use, as it happens portion of tissue near the Plaça Imperial Tarraco, in which only offices and services are added. The strip near the river continues to host industrial buildings, some of which, however, have been re-functionalized.

The result is a heterogeneous city and a fragmented one in several parts, with a well-established tissue whose plot is able to tell its history and evolution, paying particular attention, especially in recent years, to each archaeological find, enhancing it to keep alive the memory of the past of a glorious city that can still offer many cause for reflection

Figure 1. Phases of urban fabric's development and analysis of the functions.

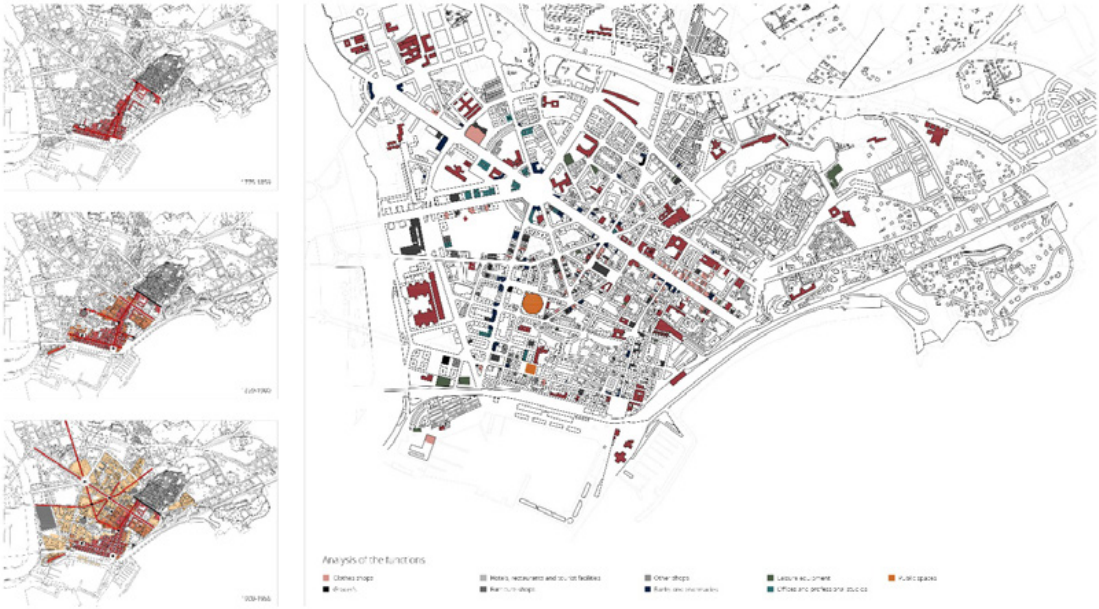


Figure 2. Analysis of the building typologies.

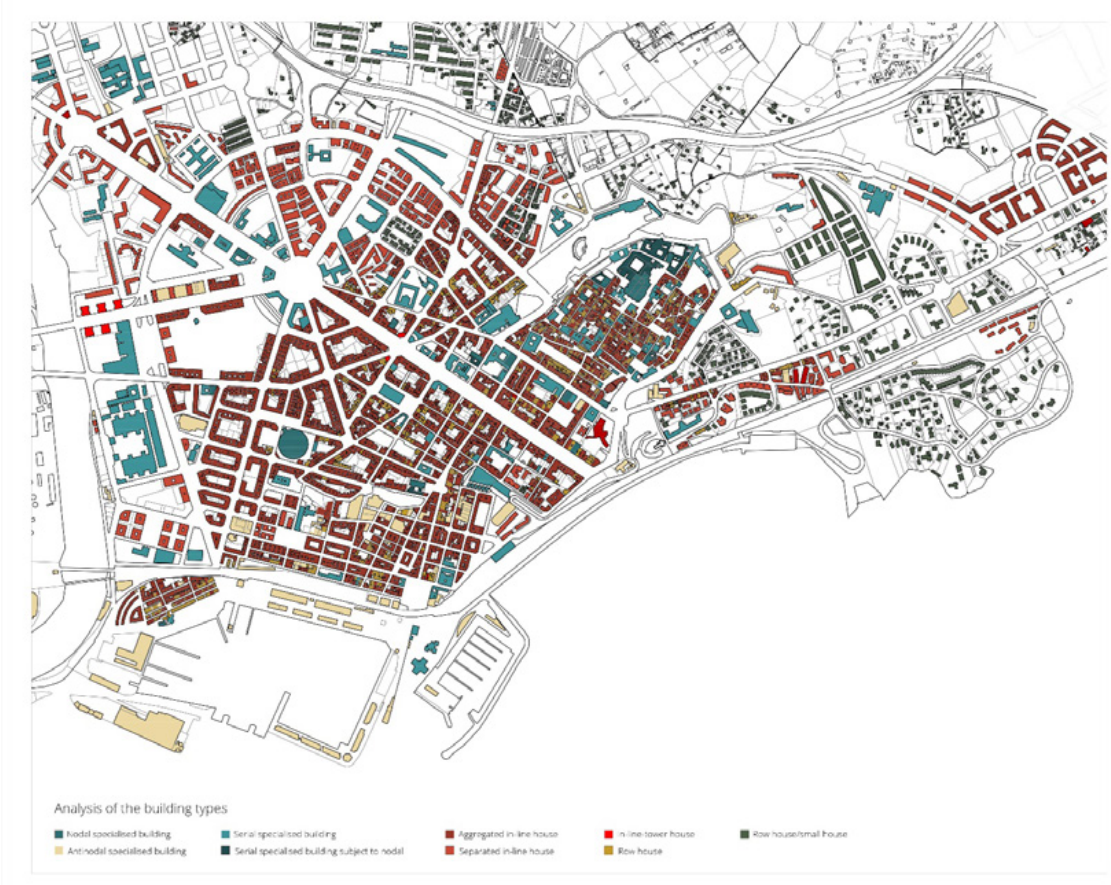


Figure 3. Base building typologies.

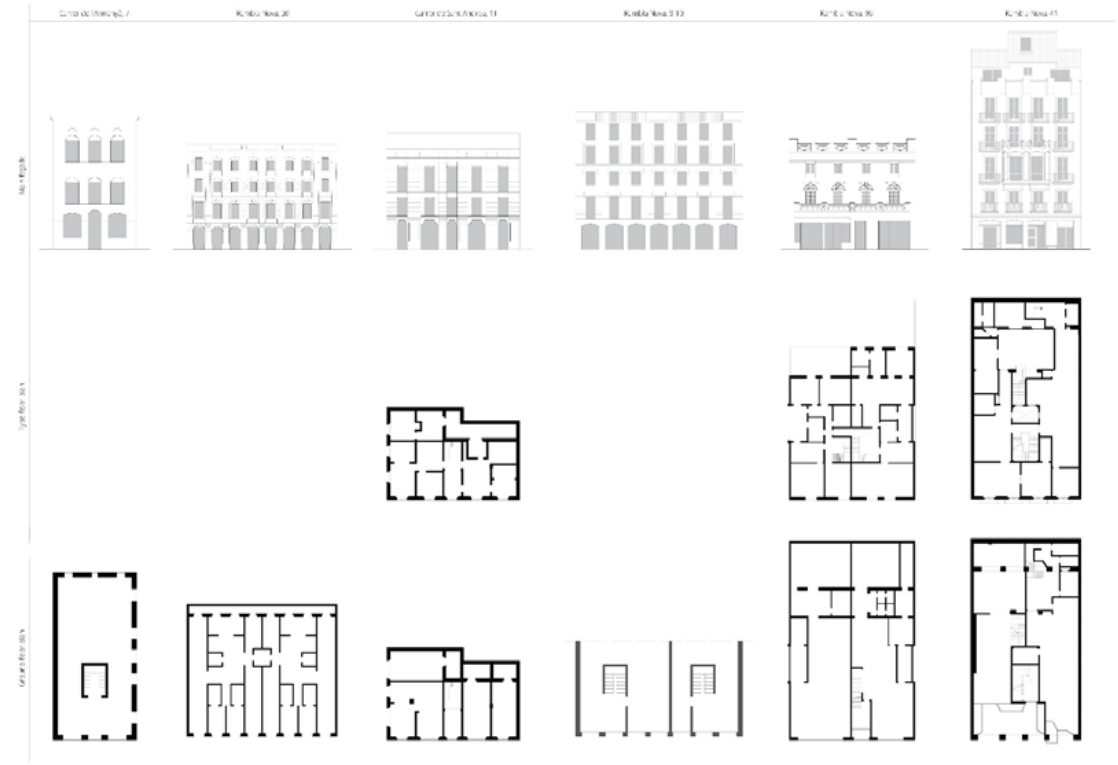
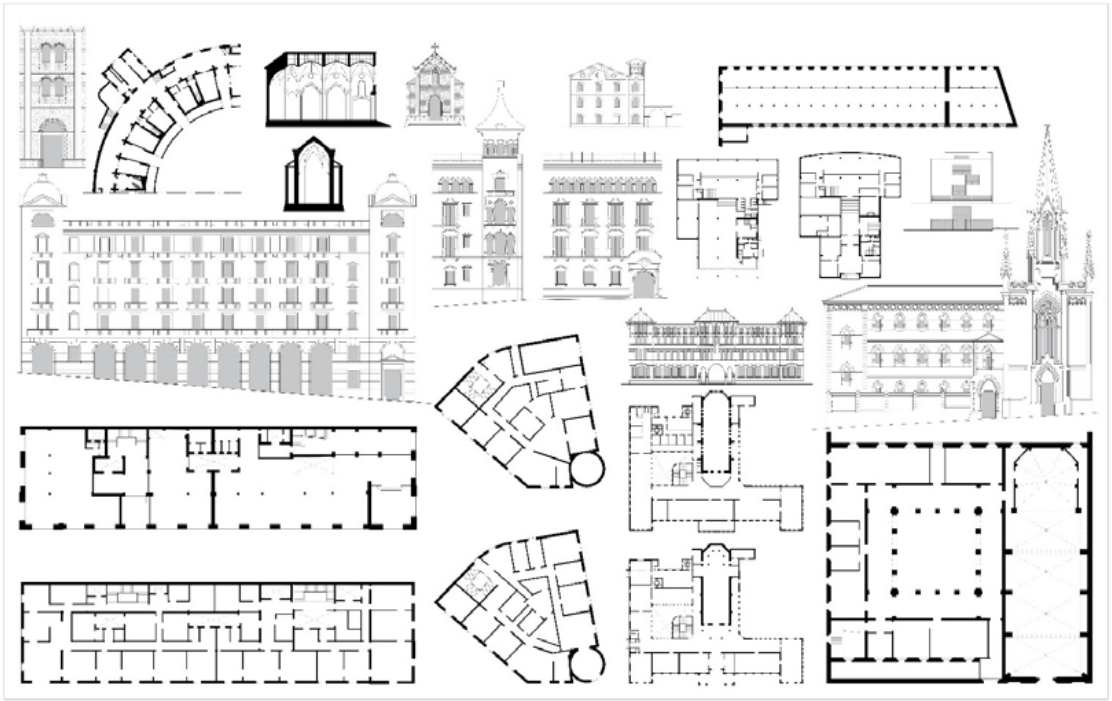


Figure 4. Serial and polar specialised buildings.



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Tarragona: stratifications of the urban fabric on the Roman pre-existences

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Keywords: *Tarragona, Fragmented city, Typo-morphological characters, Spontaneous consciousness, Critical consciousness*

The proposed theme is the result of the research carried out with the activities of the Thesis Laboratory, coordinated by the Professor M. Ieva, in the dICAR Department of the University Polytechnic of Bari. The study deepens the urban structure of Tarragona, city of Spain, and tries to explain how to run over the ancient planned substratum in the current aggregative and building system. Remember that Tarragona, the first Roman colony outside of Italy as early as 218 B.C., was born as a military camp in the high part next to the sea. After becoming the capital of the Hispania Citerior Tarraconensis province and seat of the Consilium Provinciae Hispaniae Citerioris in 73 A.C., under the emperor Vespasiano, it is endowed with a very extensive Provincial Forum that lies on the natural difference in level, using the morphology of the ground to organize three different levels: the enclosure of the imperial cult, the forensic square and the circus. The survey, performed with the typical tools of typological analysis, involves the examination of the urban fabric settled on the Roman substratum of the imperial age and the reconstruction of the subsequent transformations caused by clogging processes and specialization of the types within the walls. The collection of the cartography and the main historical-documentary sources, the results of the archaeological excavations and above all the study of the plans of the ground floors and the type-floors of a large part of the built, produced by the local administration, formed the necessary base to start the work presented here which proposes, as indicated, to elaborate a reconstructive hypothesis of the phases of formation of the urban fabric of the walled city, reconstructing the recent transformations and the hierarchies that have modified, over time, the organic relationships of the entire urban system. The scalar analysis (urban organism, urban fabric, building type) will help to explain urban evolution, through the investigation of the characteristics of basic and specialized construction and their diachronic mutations from which it is possible, in many cases, to clarify the spontaneous phenomena that occurred to modify the orderly structure of a previous planning.

Introduction

The research on the Part Alta of Tarragona is the result of the study carried out with the degree thesis, coordinated by Prof. M. Ieva, graduands: D. Anelli, F. Bonerba, A. Brunetti, M. Campicelli, V. Cinnella, F.D. De Rosa, G. Pugliese, of the Degree in Architecture - DICAR Department of the Polytechnic of Bari, in collaboration with prof. V. Bagnato, Prof. M. Saura Carulla of the Archive of the Urban Form of Barcelona and Arch. J. Beltràn Borràs with whom the results achieved were shared. The study focuses on the criticalinterpretative analysis of the building fabric of the medieval nucleus, aimed at understanding the stratification phenomena of spontaneous and intentional, diachronic and diatopic transformations of the planned urban structure. It is based on the general concepts of the method proposed by the Italian school which finds the main exponents in S. Muratori, G. Caniggia, G.L. Maffei, G. Cataldi and G. Strappa. Precisely in relation to these concepts, the city of Tarragona is also conceived as an evolving organism dependent on constant mutations over time, of which it is possible to reconstruct its vital process, its genesis and its evolution. For the purposes of the survey, the following were used: plans of the ground floors and of the standard floors and the elevations, surveyed by the Local Administration in 1986; the archaeological plan of the Roman remains still present today, drafted by the Catalan Institute of Classical Archeology in 2007; the main historical documents; the current cadastral.

Training process

The occupation of the Part Alta of Tarragona takes place in 218 B.C. by the Roman army which settles a *castrum* on the top of the hill, next to the Iberian *oppidum* of Kesse dating back to the fifth century. B.C. as it represented a privileged position on a territorial scale for the control of the *limes*, corresponding to the Ebro river, and on a local scale allowed the control of the Francolì river and of the maritime landing; all this proved to be fundamental when, in 218 B.C., the Second Punic War broke out. At a later time the walls that surround both the upper part of the city and the lower one, home to administrative and residential activities, are built; when the *limes* of the Iberian peninsula mute, the castrum loses its importance. However it is with the election, first in *Colonia Iulia Urbis Thriumphalis* and in a second time, after the reform of Octavian of the provinces, to capital of the *Hispania Tarraconensis* that the city greatly increases its importance, to the point that, to show their devotion to the central government, the construction of a grandiose *forum* is started on the site of the old military *castrum*, on which, in the meantime, other minor ceremonial structures had arisen. With the death of Augustus, in 14 A.D., the city asked and obtained permission from Tiberius to build a large temple, located on the ancient *castrum*, which was an example for the other provinces, but it is with the Flavia dynasty that begins the realization of a ceremonial area of considerable size. The system, more similar to a large terraced sanctuary than to a *forum*, is divided according to the succession of two large porticoed squares: the first larger (170 meters x 332 meters), the second smaller (134 meters x 156 meters) with in the center the great temple dedicated to the cult of Augustus; the passage between the two ones was allowed by a series of stairways, which connected the level of the square with the level of the portico, raised on a podium, from which it was accessed after the smaller square. Due to the large differences in height on the hill, many excavation works were required and land was moved to level the whole area. Shortly subsequent to the construction of the *forum is* the *circus*, placed at the closure of the forensic system, acts as a place of connection between the *forum i*tself and the city and is tangent to the *Via Augusta.*

Starting from 197 A.D. the city begins to lose importance, the provincial forum is converted into *praetorium consularis*, or governor's palace fortress; the decline will culminate with the tetrarchy reform of Diocletian (293 A.D.) when the capital of the new *Diocesis Hispaniae* is moved to *Emerita Augusta* (Mérida); subsequently, starting from 324 A.D., the administration of the city will pass under the control of the *Praetorium Galliae*. In this period it is possible that a first occupation of the forensic complex took place. Indeed, we find the size of the *actus* (equal to 120 Roman feet = 35.52 meters) in the block at the intersection of carrer Major and carrer de la Merceria. As can be seen from the analysis of orthogonality, within

the planned structure of the road network of the upper part there is an anomalous diagonal path, which can be explained by admitting the presence in this historical phase of a large free area bounded by a building - contained in the forensic structure - having a 'C' shape open towards the privileged distance. With the progressive clogging of the urban center, the houses are on the existing building, leaving a path that crosses the free area diagonally. In 466 A.D. the city passed under the Visigoth control and one of the traces still visible is represented by the remains of a church near plaça Dames i Vells, while, starting from 713 A.D., Tarraco is occupied by the Moors who will keep control until 942 A.D., in this period the city is almost totally looted and abandoned, leaving only the substratum of the future Tarragona. Starting from the year 1050 A.D. the repopulation of the city begins in the upper part, reusing in part the ancient Roman structures. It dates back to 1171 (completed in 1331) the beginning of the construction of the Cathedral of Santa Tecla where originally there was the temple dedicated to Augustus; the convent attached instead, will rest on the fence structures of the forensic complex; always in this period the Castell del Rei is built in the ancient Torre Pretoria, near to the circus, while the Castell del Patriarca dates back to the 13th century, near the current Plaça del Forum. From the analysis of the hierarchies of the areas pertaining to the built-up area, we can see that the carrer Major, polarized in the Cathedral, is the matrix path of the area previously occupied by the larger provincial forum, becoming the central and main axis of symmetry. The plant paths are set orthogonally to it, including carrer de la Merceria, which becomes a subordinate path, due to the presence of a limit corresponding to the remains of the Roman forum on which the medieval residences are founded. To close the blocks there are connection routes created by removing housing units along the plant paths. The distance between these paths, parallel to the carrer Major, does not refer to a repeatable module, so that they are created isolated with areas of relevance of variable depth; this phenomenon must probably be due to the contrast between the different tracks planned throughout history: the new buildings built in this era use the ancient traces of the walls as foundation, disregarding the consequent irregularity of the infrastructural meshes, guided rather by a rational principle of economy. At the same time buildings are built along the curvilinear paths that connect the access doors at the side towers and the main road to the center of the old forensic system, following the shortest route rather than keeping consistent with the regular mesh: this is carrer dels Cavallers and carrer de la Nau. Both ones end in nodal spaces, plaça del Pallol and plaça del Rei, from which branches are hierarchically prevalent with respect to the surroundings, determining a considerable specialization of the building. It is probable that in the current plaça de l'Oli there was a structure that influenced a "fraying" of the upper street structure, i.e. determining curvilinear paths that deviate from the existing building to connect with the main gates of the wall (Portal del Carro to the north and Portal de Sant Antoni to the northeast).

Later there is a further clogging of the consolidated fabric through the advancement of the main road frontage which is hypothetically divided into several phases: at first there is an occupation of the free space in front of the shop on the ground floor through a porch, at a later time the upper floors are brought to the thread of this structure which loses its provisional value becoming an integral part of the new housing organism. This phenomenon can be read in the plan of the ground floors by the misalignment and by the change of position of the load-bearing walls. The presence of some lots placed diagonally with respect to the planned mesh suggests the occupation of a pre-existent path by a house, often distinguishable even from a structural step different from that of adjacent houses; the latter often present a "fanning" of the dividing walls to accommodate the different position of the routes with which they are compared. In 1368 the "Muralleta" was built along the façade of the circus, with the aim of defending the houses that will then be built to expand the urban soil. The new buildings are located near the path that compensates for the jump in altitude between the western gate of the Roman wall and the beginning of carrer Major. The extension of the latter, offset by the presence of the ascent ramp, becomes a master path at the center of the *circus*. As a counter space a free space is left which takes the configuration of an elongated square polarized on the convent of Sant Domènec, transformed in the nineteenth century into the town hall. The city, between 1348 and 1650, lives several phases of expansion and depression, related to the outbreak of various pestilences and

conflicts. In 1868 it ceased to be a fortress, beginning expansion outside the walls that had long conditioned development. In the middle of the 80s the Plan Especial of the old center (Pla Especial de la Part Alta - PEPA) was drawn up, with the aim of redeveloping it: it was foreseen the demolition of several blocks of the historic core and the opening of new internal connections to the same. These operations have produced the creation of public spaces that do not affect the image of the most representative and solemn places, while ignoring the coherence with the urban organism's process, thus transforming the use of places rooted in the course of history.

Typology of buldings

The study of the plants and façades of the basic construction of the Part Alta of Tarragona has highlighted affinities and differences between the types present. Thanks to the method of comparison - even between different geographical areas -, it was possible to trace a carrier type that represents the "multiple common minimum" of this fabric, devoid of all the superfetations and transformations caused by time and by the different use that man has imposed to adapt to new current housing standards. This type of building is a terraced house consisting of a structural step of the relatively narrow dividing walls, which stands between 3 and 4.5 meters, and depths between 7 and 11 meters. The supporting structure is given by a wall box that coincides with the perimeter of the building, with no walls of spine, of which the long sides, orthogonal to the path, divide the various building units and carry the load of the floors, while the short sides act as bracing, road closure and area of relevance. The constructive system is made up of irregular or squared stone masonry - at a later age the use of bricks, especially for arches and cantons, is spreading - and from wooden floors composed of a rigging of joists with a tight rhythm. On the ground floor, the construction of ogive diaphragm arches is frequent at first. The limited dimensions of the light of the living cell, as well as the short distance between the joists, may be due in part to the use of pine wood as the main carpentry material for the humble band of the Tarragonese population, a choice that determines reduced sections of the joists , therefore equipped with lower shear strength and bending moment. Another reason can be given by the importation of building types by the Normans who repopulated the city in the twelfth century, in fact the housing cells have dimensions similar to those of central Europe of the same historical period, but implementing a process of lithisation of the system constructive elastic-wood to adapt to the greater availability of limestone in the area and the different climatic conditions, due to the greater thermal inertia of stone material. Owing to the proximity to the maritime coast, the houses had to present themselves to their construction with a coating of lime, which could preserve the stone from the corrosive salts carried by the winds coming from the sea, as well as to avoid the dissolution by atmospheric agents of the binders of the masonry, of poor quality, composed substantially of muddy material. The roof is on two pitches, with a ridge parallel to the front and placed in the center of the building unit. The roof construction system consists of one or two pieces of joists, planks and brick cladding. The tectonic knot of connection with the vertical structure is characterized by a frame made up of several layers of ceramic tiles and tiles in slight overhang on each other, so as to make the rainwater flow outside, until water channeling systems are introduced. It is assumed that the type rises for a number of levels equal to three, with a ground floor used for commercial and work functions, the first floor dedicated to the living area, the second floor for the sleeping area. The internal distribution identifies different variations of the type, comparable to coeval those of the florentine period: "*atrium*" type, with a staircase placed parallel to the front in the center of the living cell; "shop" type, with a staircase to a ramp placed perpendicular to the front, leaning against the wall. Constructively, the atrium solution is simpler as it is possible to arrange a discontinuity in the floor in the warping direction of the joists, unlike the shop type, which requires a further load-bearing wall that closes the flight of stairs: it therefore has the advantage of isolate on the ground floor the space on the road front, for semi-public use, in the case of commercial activity, from access to the unit located on the upper floor, which requires more privacy. The façade of the "*atrium*" type has an axis of symmetry, with a single hole centered by plane, since the limited width of the front does not allow the arrangement of several

rooms overlooking the street, while the "shop" type consists of smaller openings in correspondence of the stairwell and larger openings in axis with respect to the residual compartment, thus renouncing the line of specularity in the centerline of the façade. The masonry discontinuities on the fronts are obtained for the most part by peeling structures that work by size, such as stone lintels; for the holes of greater light, for example at the entrance to the shops, structures working by form, such as lowered arches, are sometimes employed. Between the nineteenth and twentieth century, the windows on the upper floors are transformed into French windows with a balcony, with the exception of the holes in the stairwell. Synchronous variants of the type are identified in the corner solutions, in which the stairwell is divided into two ramps, arranged on the bottom of the building unit, directly accessible from the outside because close to the side; the latter allows the air-lighting of intermediate rooms, unlike the load-bearing type, closed by the two load-bearing walls. The imposition of the rhythmic wall as a nineteenth-century aesthetic canon has produced, in situations of greater nodality, lateral facades marked by a regular pitch of holes, often closed near the corner for a better arrangement of the interior furnishings, but legible outside by of frames that return regularity to the prospect. The roman provincial complex of the imperial age generated huge elevation jumps in correspondence with the overlapping lines of the *forums* and the *circus.* Along these bands the spontaneous consciousness has been related to the substratum building blocks of width equal to the depth of the terraced house, thus constituted by double facing on the road with opposite fronts: one of three levels is at the lower altitude, with floor commercial on the ground floor, built in roman vaults: the other upstream is of a level, with the entrance to the house, erected on the vaults of which it takes the structural step, between 5 and 6 meters. The facades take up the arrangement of the holes of the type previously exhibited in its two variants. A further variant of position is given by the houses located in the area of the angular particles in antinodal points, when the clogging phase of the fabric starts. The main differences from the types described are in the greater width with respect to the lot depth and by the presence of a single view. This type of pseudo-terraced is also present in a group of buildings of the first half of 1800 in carrer Trinquet Nou: the impossibility of building terraced houses in this block is due, as suggested by the street toponymy, in the presence of a pelota sports field, which exploited the high and long wall of the medieval wall, now deprived of its defensive function. Due to the demographic increase of the population of Tarragona and the lack of free space for the construction of other houses, there was a need to dispose of more dwellings in the same lot, thus implementing the multi-likenization process of terraced houses. The type was then transformed to accommodate one apartment per floor, through the introduction of a stairway with multiple flights, a semipublic space able to vertically connect the housing avoiding entry into private property, and through employment of the area of relevance, to derive more useful surface. The result is buildings that are over 20 meters deep, where the quality of housing in favor of housing density is considerably reduced. On the street front the living room is always arranged, with the kitchen directly facing it in a sort of open space solution. For the aeration and lightning of the rooms without a view, light-wells are created, often insufficient to serve all the rooms, so the sleeping area is placed at the back.

With the progress of the construction techniques, it was possible to equip the stairwell with zenithal light, becoming for some apartments a further light-well on which to open windows with opaque glass. The multifamily ranks on south of plaça de la Font use the vaults of the roman circus as a foundation, so they have greater width of the front that allows the arrangement of several rooms in a transverse direction, even near the facade, which has two equal holes size. The angular variants have the possibility of obtaining more habitable surface, as they do not require light-well, for this reason they often contain two dwellings per floor. Towards the end of the 19th century, with the need for stairs with a more comfortable riser / tread ratio, a variant of the "shop" row type was introduced, providing it with a double ramp on the front. This solution, however, reduces the space of the room facing the street and affects the regularity of the openings in the façade, since the landing of the stairwell that rests on the front is at a different level than that of the lodgings. In the carrer de la Merceria, near the monumental staircase leading to the Cathedral square, there is a type with a portico on the ground floor, obtained by a succession of ogival arches and pillars

with a shoe profile, which support the rooms of the upper floors. Two similar buildings are located in the plaça de la Seu, not far away, with a portico in a trilithic system. These unusual characters within the fabric of the Part Alta are due to the greater degree of specialization of the buildings, used as dwellings of the archiepiscopal curia, subsequently re-asserted and transformed into multi-family houses. The nineteenth-century expansion plans of Tarragona have put an end to the Part Alta's building blockage process. For the new bourgeois class, houses in line that would have supplanted the existing buildings, in imitation of the noble palaces, present the typical features of European contemporary productions, such as the rhythmic wall, the hierarchy of the floors and sometimes the axis of symmetry . Other rifuses, on the other hand, only change the internal distribution, presenting in a prospect substantially as a union of the pre-existing terraced houses, also highlighting the different share of the floors of the various residential units. The variants are almost interminable, resulting from the combination of different pecularities: the position of the building inside the block, the dimensions and the shape of the lot on which it is built, the layout of the stairwell, the number and position of the views on road, internal distribution, number of dwellings per floor, etc. Unfortunately, many traces of the historic fabric of Tarragona have been erased with the renovation of some buildings, in which the continuous masonry, rich in often multi-century historical stratifications, and erected structures in steel or reinforced concrete, which have their own distinct constructive logic, disinterested in inventories.

The research also involved the identification of the type-morphological characters of buildings in which residential use is subordinated to the representation function. An embryonic form of Gothic was introduced into the Iberian peninsula thanks to the Cistercian order. It was characterized by a standardized planimetric system, limitation of decorations, replacement of barrel vaults with pointed vaults; the first abbey, founded in 1131, was located in Morerula, in the province of Zamora (Castile and León). The mature Gothic came in the late twelfth / thirteenth century from the north of France, the characters contemplate sophisticated floor plans, use of richly decorated capitals, and the explosion of ribbed ogival vaults. The result is an increase and improvement of internal lighting. The early Gothic remained however detached from the Romanesque and Islamic currents; it was in fact imported both by King Alfonso VIII of Castile and Archbishop Rodrigo di Toledo (who died in 1247) as a protest against the styles therein. Catalan Gothic is a late Gothic form, configured as a national style, a reflection of the Aragonese and Catalan historical events; in fact it is only with the dynastic union of the two families, which occurred in 1137, when the dynasty turned into a Mediterranean power, that the Catalan Gothic was created as a style able to rival (but at the same time emulate) with the French Gothic. The style is characterized by the exploitation of internal buttresses, a distinctive trait as a determined search for ambiguity. The system of buttress, as present in the choir of the Cathedral of Barcelona, derive from the Gothic of southern France. However, they were already widely used in Catalonia as a support for both wooden roofs and as support for ribbed vaults.

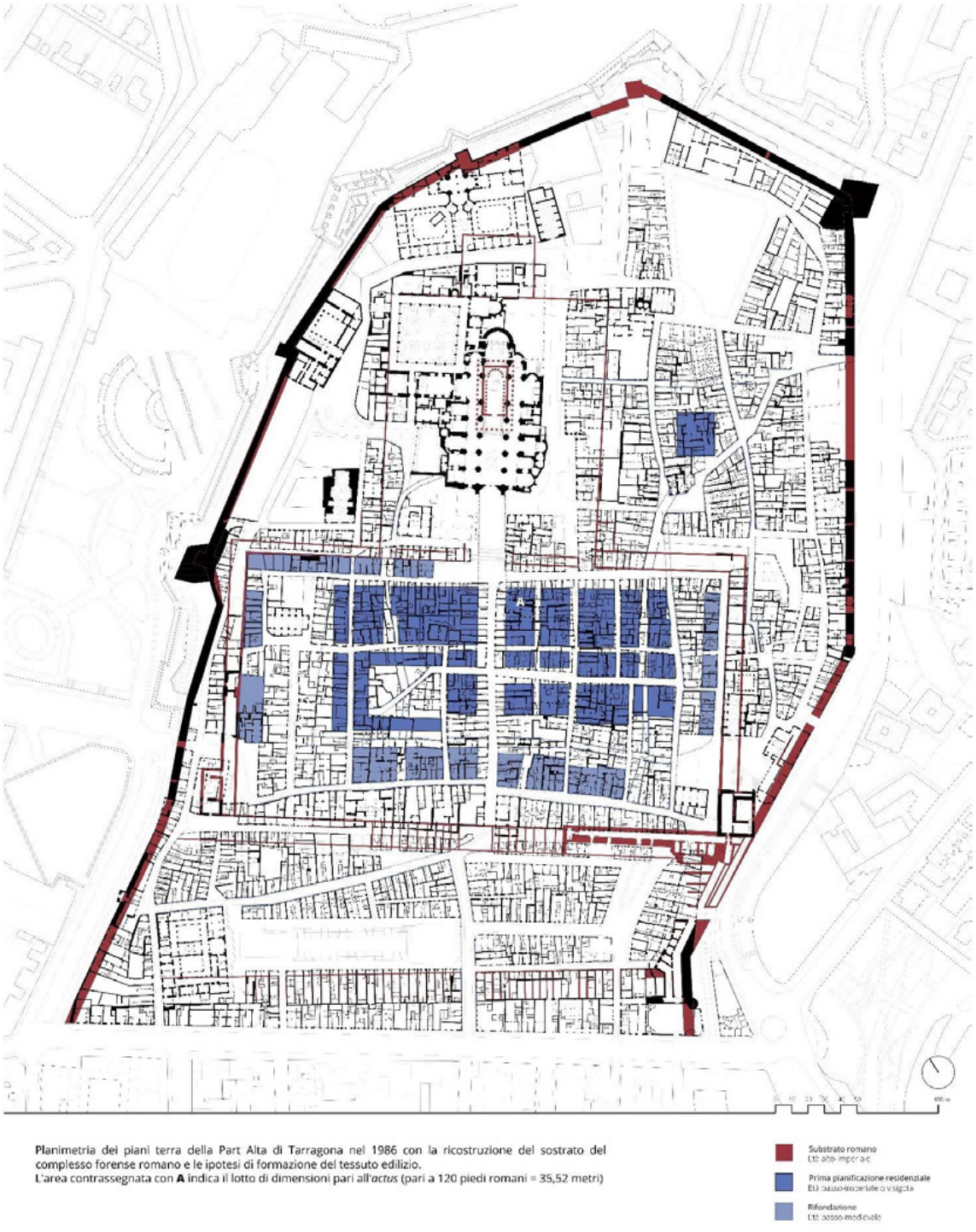
The Cathedral of Tarragona can be considered an epitome of the type of Spanish church before the introduction of Gothic architecture; it was built in two phases (1171-1331), in the first phase it was conceived as a massive and relatively obscure structure. The main structures, 14 m high, were barrel vaulted; the intent was to honor and simulate the Roman city of the past and its remains: it rises on the site of the temple of Augustus. The Cathedral is inspired by the French romanesque, coupled columns flanked by twin columns, which also support the arches leading to the side aisle; derives from the church of S. Etienne de la Cité, Perigueux, but in Roman key. Likewise, the planimetric layout was modified by inserting chapels along the transept. In 1180 another idea became feasible: the construction of cross vaults and a clarist. The result was the raising of the east end for the creation of a space for the windows and the role of the twin columns changed depending on the support at vaults. The effect was bright but not less massive than the previous one. The structure was raised from the previous 14 meters up to 26 meters. This cathedral, cavernous and muscular, was taken as a reference throughout the north-east of Spain, as Tudela (finished in 1204) brighter, and Matallana (begun in 1228), having a larger size. For the analysis of the cathedral, methodologies similar to those of the analysis at urban level are adopted, ie according to the distinction between: matrix, implantation and connection path; this is possible given the formative analogies of the urban organism of the single building. The organism is set in axis

and at the end of Major calle, characterizing itself as urban polarity. It is configured as a multi-axis organism where the matrix is configured as the one passing through the central nave and having as its center the apse and the altar, the other two instead of plant, correspond to the side aisles and configure a polarity in the minor apses; the first three spans see the connecting paths between these axialities, impeded in the others by the presence of a wooden choir. The transept is configured as a matrix path, having polarity in the Chapel of the Blessed Sacrament. The cloister of the adjoining convent (accessible from the transept) is configured as a serial aggregative space of several basic elements, thus becoming the center of the serial structure. Analyzing the paths inside it is possible to notice how, considering the cathedral as a polarity, a matrix path is created, connecting the cathedral to the polarity of the Chapel of the Verge de les Neus, on this path there are also two other accesses: the first from the outside, the second from the Chapel of the Blessed Sacrament. Perpendicular to this, in the end zone, the two plant paths are set in succession; these paths retrace the ancient plan of the great perimeter wall of the *Provincial Forum* of the roman age. Along these are numerous chapels and worship spaces. Finally, tangent to the church, the last wing of the cloister is configured as a connecting path, the last area to be clogged however not less important given the presence of a large vertical connection compartment. For the construction of the Basilica of Santa Tecla and the appointment of Tarragona as a bishopric, it was immediately necessary to build residential buildings for the members of the Cathedral Chapter, including the house of the Archbishop, the Dean, the Waiter and the 'Archdeacon. The main façades generally have some common features, including triphoras or gothic quadriphoras in correspondence of the main rooms on the main floor, while on the ground floor a large portal serves as the main entrance, in direct communication with the central courtyard of the building, when present. Along the carrer dels Cavallers arise in the late Middle Ages many stately buildings as a recast of pre-existing terraced houses, probably due to its proximity to Campo Marzio. The particular orographic shape of the site has led to the construction of buildings with double views on roads at different altitudes; this has allowed the raising of a high floor - possibly with mezzanine, used as a stable, warehouses and servants' quarters - at the level of Carrer dels Ferrers, hierarchically subordinated to Carrer dels Cavallers on which the main facades overlook. The internal distribution conforms like a *raumplan* of *en suite* rooms, sometimes connected by means of large hallways or corridors.

Casa Montoliu, for example, consists of a large, axial colonnaded atrium with a monumental staircase that splits into two ramps with a hooked cross, one of which allows access to all levels through a stairwell distinct from the other rooms, the other leads to a central distributor environment in direct communication with the main hall of the main floor, characterized by a greater inter-storey height. To illuminate and ventilate all the chambers are placed two cloisters in symmetrical position. The main façade has a variable hole spacing, corresponding to the internal distribution, but vertically aligned; the axial entrance is highlighted by a large splayed architraved portal. The succession of floors is clarified by the size of the openings: small wall breaks at the base level, large French windows with balcony on the main floor and small windows on the mezzanine level.

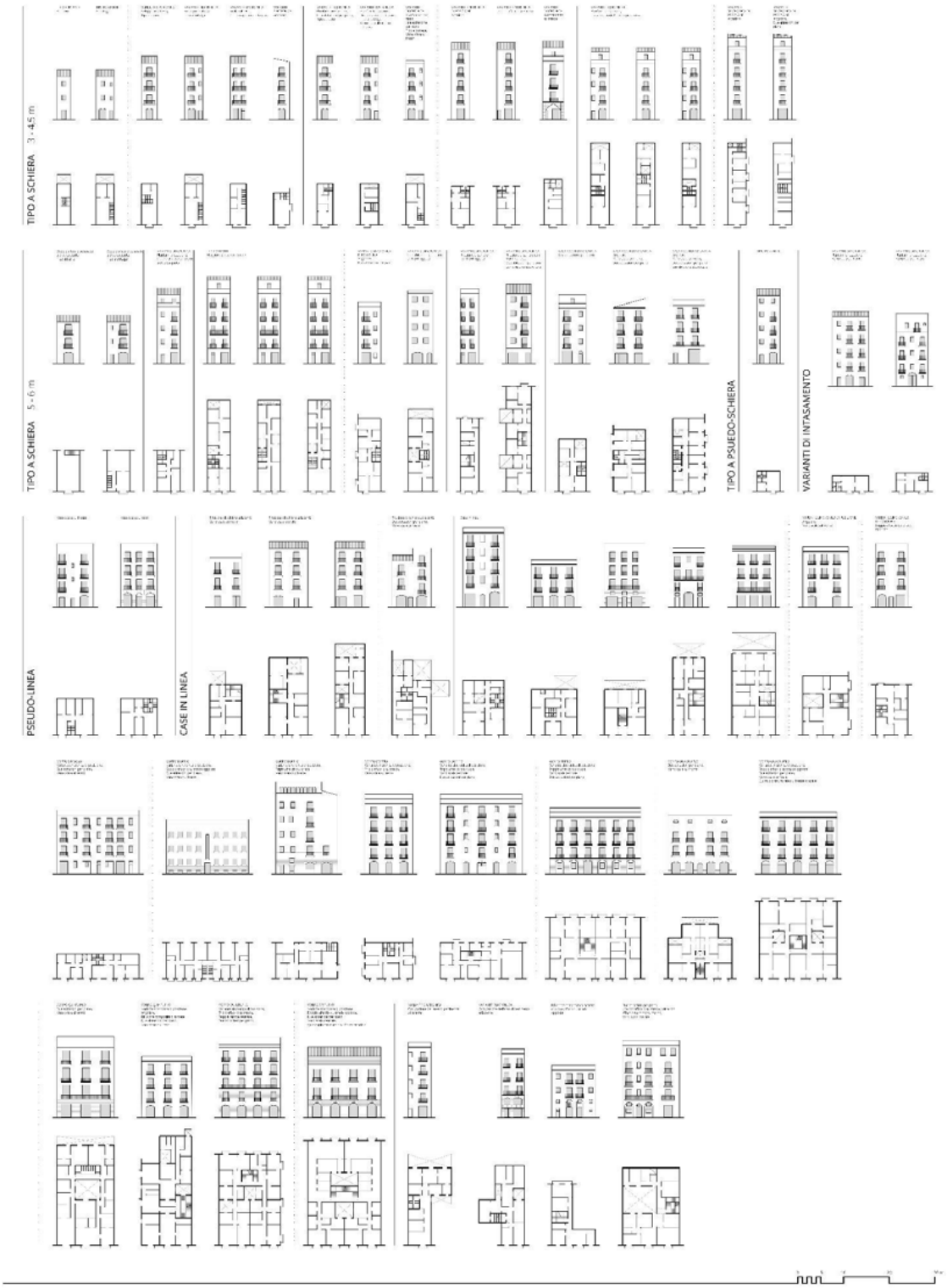
Casa Castellarnau presents substantial differences concerning the internal structure: a double-height space is located in a central position on the main floor, around which the various rooms are arranged; the aero-lighting is regulated by a loggia and two little cloisters leaning against the short sides of the lot, one of which houses the vertical distribution system - covered by a colonnade - the other is configured as a small garden raised above the street and hidden from a fake facade. The entrance is articulated through fauces with stairs leading into a small atrium. The main façade has openings according to a variable but symmetrical pitch with respect to the entrance portal, in an order dissociated from the internal organization of the rooms.

Figure 1. Ground floor of Tarragona's Part Alta.



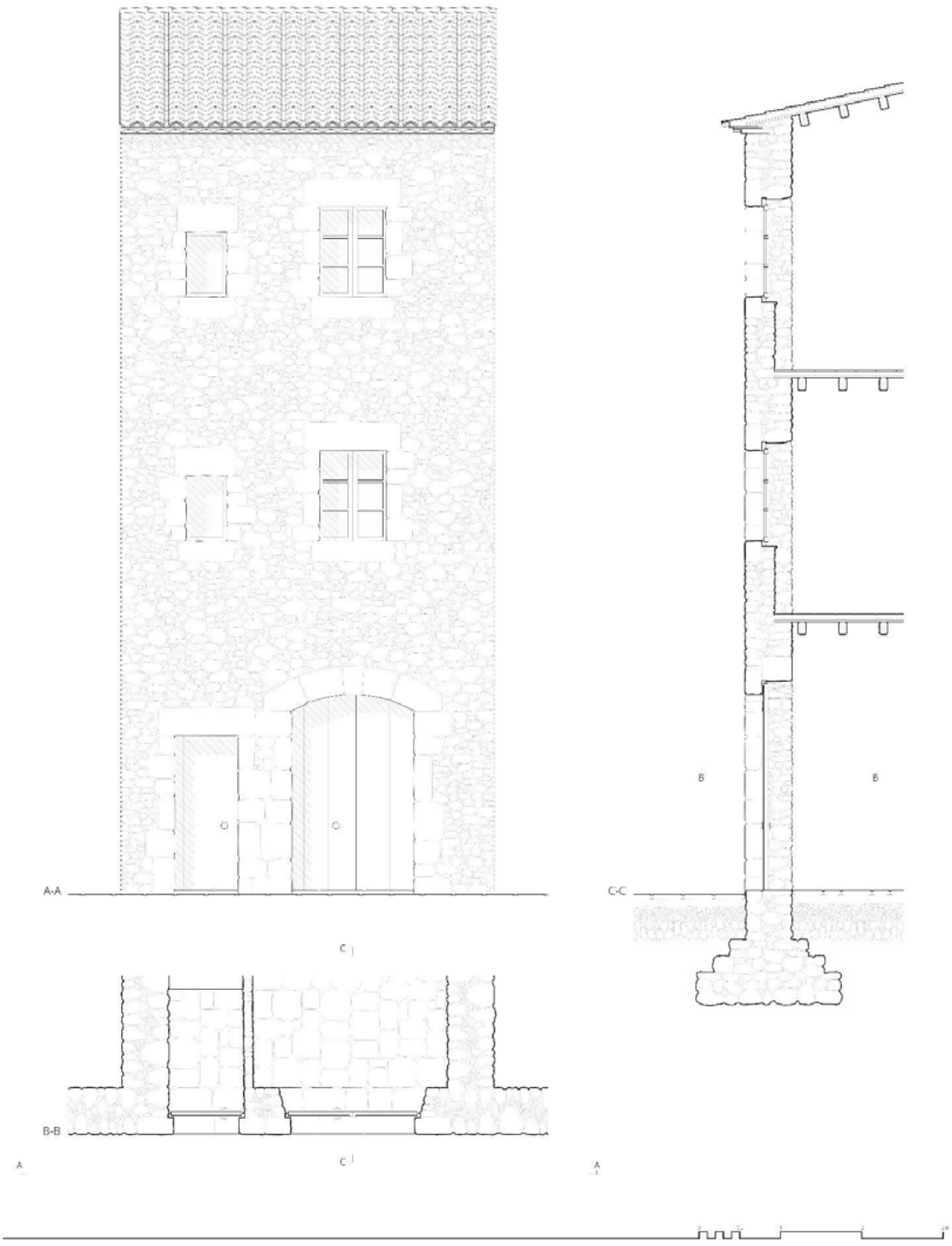
Planimetria dei piani terra della Part Alta di Tarragona nel 1986 con la ricostruzione del sostrato del complesso forense romano e le ipotesi di formazione del tessuto edilizio.
L'area contrassegnata con **A** indica il lotto di dimensioni pari all'*actus* (pari a 120 piedi romani = 35,52 metri)

Figure 2. Typology of buildings.



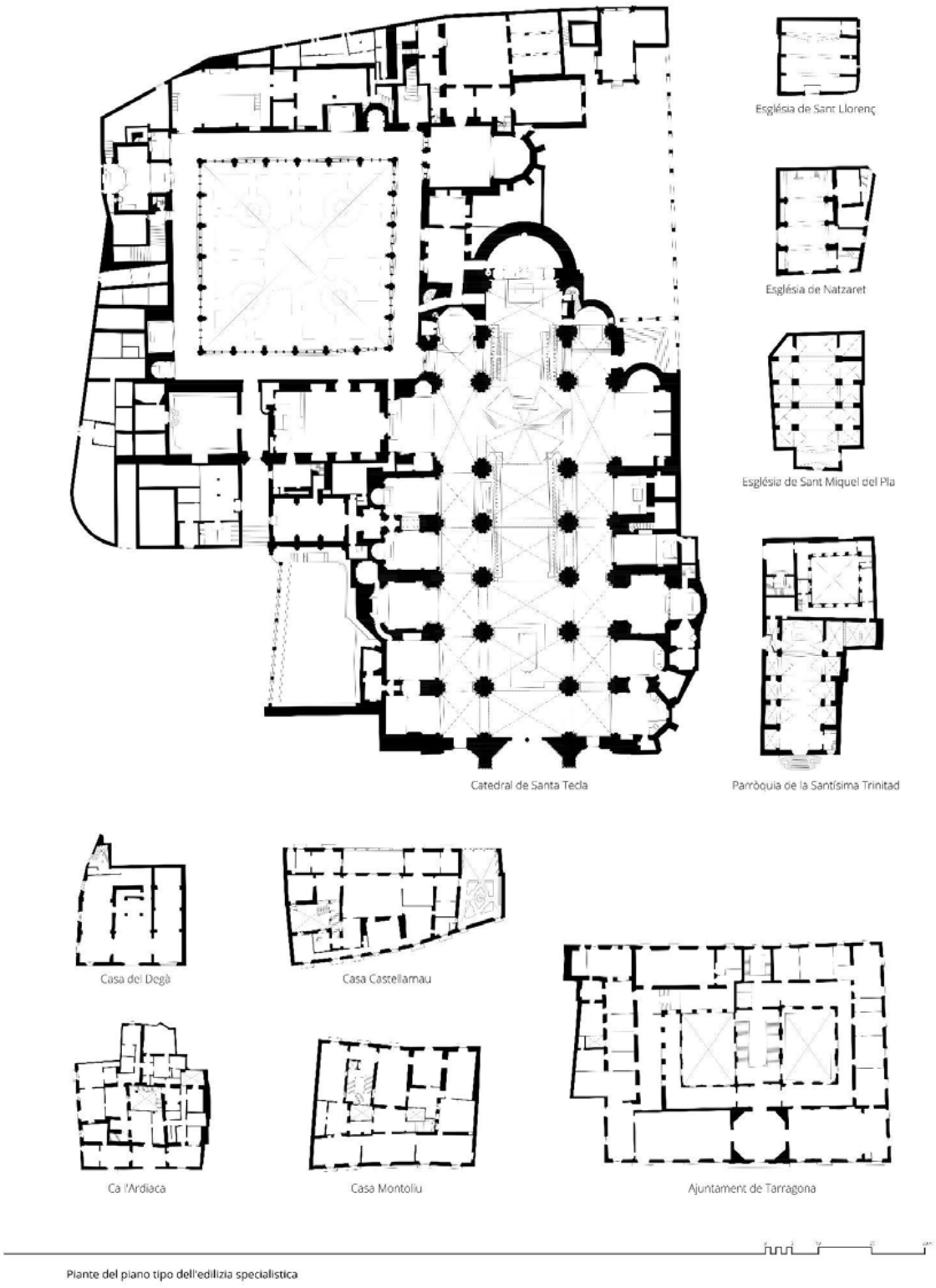
Abaco delle tipologie edilizie residenziali presenti nella Part Alta di Tarragona

Figure 3. Main type.ne



Prospetto principale, stralcio di pianta e di sezione trasversale del tipo portante con passo strutturale da 3 - 4,5 m

Figure 4. Ground floor of specialised buildings.



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Fortified architecture as monarchy propaganda in Sicily

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The study of urban architecture in the Hellenistic age shows how the society of that time paid particular attention in realizing scenic spaces in which the peculiarities of every single building found their meaning. Monumental complexes found out their true value in visibility and fortifications had a basic role in recalling an image of a city characterized by its walls and closed in its fortified perimeter. Between the end of the 4th and 3rd century, Hellenistic monarchies promoted fortified architectures with a prominent semantic value, in which high visibility, magnitude, and spatial organization played a key role. The present paper aims at isolating these formal peculiarities, common in the Greek Mediterranean, to consider specifically the case, singular in some ways, offered by Agathokles's monarchy in Sicily. In the island, the construction of massive defensive systems became propaganda of the sovereign's presence on the whole territory: both in Syracuse, the capital, as in Selinunte and Agrigento, placed at the borders of the disputed territories by the Carthaginians.

At the end of the 5th century BC and, significantly, during the 4th century BC, *poleis* assumed different characteristics and developed specific functions that mark the passage from autarchic settlement forms (city-state), typical of the archaic and classical age, to urban systems included in dynastic kingdoms or in over-cities military federations. These urban centres can be assumed like complex organisms appointed to perform management of economic resources and territorial defence. The conquests of Alexander the Great considerably spread out the Mediterranean horizon and immediately, at his death, that same horizon became the object of contention by his successors (*diádochoi*) who gave life to the kingdoms that lasted until the final affirmation of Rome, before the end of the 1st century BC.

In this age the new role of the urban communities is also manifested in the architectural growth. Taking the Periclean Athens as a paradigm, monumentality of public areas finds a common expression in the creation of superb urban complexes in which the overall vision has a primary role in shaping the image of the city, enhanced with propaganda values and symbolic meanings: *theatroeidès* is the term used by the ancient sources referred to urban settlements with a great visual impact, "images of a political structure that it is represented through highly significant buildings" (Lippolis, Rocco 2011. Cit. p. 289). The cities of Caria (south-western Turkey) – a region facing the Aegean Sea, linked to imperial culture of the Achaemenian dynasty – clearly show the organization of a central system, able to manage a territory and to propagate his power through building activity. Visibility and spatial organization are the expressive mark of Halicarnassus, but the same architectural qualities can be found in Cnidus, Priene and also in Kos and Rhodes; the latter two formally not included in the Achaemenid possessions but strongly influenced by Hecatomid dynasty that ruled Caria. This urban development in the territories under Persian influence seems to be similar to the process that invests Greek *poleis* after the definitive affirmation of the Macedonian dynasty with Philip II who used the cities (Pella, Aigai) as a propaganda scene (Caliò 2017), and even more with his son Alexander, founder of numerous cities in Egypt and Asia. Since the death of Alexander the kingdom is fragmented but his figure is assimilated by successors as paradigm of the dynast, placed at the centre of a system that requires a ceremony, a court and a propaganda apparatus that invests the major city or the new foundations in the ruled areas (Lippolis, Rocco 2011, pp. 358-399). The claim of succession, the flaunt of wealth and even more military strength are prerogatives of the *basileia* and constitute a set of ideals diffused through the monetary images, enriched through the urban arrangements and the architecture of the major centres: in this system based on visibility, the fortifications are enhanced with a high semantic value that will lead to the identification of the city as a built, finished, and closed space within its walls (McNicoll, Milner 1997; Chaniotis 2005; Caliò 2012; Caliò 2014).

Some studies on urban environment's perception of and architecture's communicative value (Rapoport 1990, Eco 2008) clarify how socio-cultural aspects are crucial for understanding the relationships between the stimulating properties of the environment and the human responses to it (Rapoport 1990, p. 29). "Since there is society, every use becomes a sign of that use" (Eco 2008, cit., p. 23, note 2): assuming the aesthetic, emotional and mean-functions of imperative communication that Umberto Eco assigned to the architecture (Eco 2008, pp. 202-206) it can be understood the fortifications' high symbolic value in the Hellenistic society in which the war, fought in a new way and with unusual violence directly on the city walls, has characterized the formation and survival of kingdoms and leagues, determining a new cultural/interpretative model in which urban fortification denotes a *function* and an *ideology of function*. The city wall is, therefore, a material sign of city presence (Ducrey 1995; Camp 2000): strong element of characterization, it embodies the sense of independence, security, military power and economic strength of the civic community, as it exhibits the sense of autonomy, solidity, wealth and power to those who are outside of it. If the city is deprived of its walls nearly loses its consistency and, for sure, its political identity. This connection between fortification and urban reality can be seen in a certain way reading historical sources about the sieges of the Carthaginians against Greek cities in Sicily: for Agrigento the scientific research shows a considerable decline in the archaeological record, following the destruction of the its walls (Diodorus Siculus XIII 108, 1-3), which lasted at least until the newfound autonomy in the second half of the 4th century BC, when the city shows a revival of the building activity and a process of growth in monumentality in the public ar-

eas. The importance of defence can be grasped also from other ancient sources. The topic returns several times in Aristotle's *Politics*, with different points of view: speaking of the walls - contrary to Plato - he argues that it is right to realize them in a manner appropriate to the war and also to the decorum of the city (Aristotle, *Politics* VII H, 11-12, 1330b-1331a), expanding the primary function to all "functional" communication destinations (Eco 2008).

On the basis of real experiences, in the course of the 4th century Greek mindset about war became an autonomous concept and when it was turned into instrument for politics it become object of technical study. Reading Aeneas Tacticus (half 4th century BC) and Philo of Byzantium (end of 3th-beginning of the 2nd century BC) an empirical model of city is revealed whose architecture is enhanced with defence's functional qualities: so that public spaces, inhabited areas, and walls become elements of a complex structure, organized in a harmonious system that establish internal organization of the city, as can be observed in the urban arrangement of Alexandria (Egypt) and in the redefinition of Pella (Macedonia) by Cassander. Wide spaces without construction are now included into the circuit wall, lending a new, enlarged, perception of the city: the defensive works in Syracuse by Dionysius I are exemplary in this sense for extension and bulkiness of the *geländemauer* model, widely used in Greek cities from the Peloponnese to Magna Graecia (Beste, Mertens 2016). The fortification and its shape constrain the appearance and disposition of the interior spaces also by virtue of the changed tactical necessities; so the realization of *diateichismata* served to modify too extensive layouts in order to defending urban areas by linking fortifications and inhabited areas in a composite organism as perceptible in Antioch on the Orontes, founded in Syria at the end of the 4th century by Seleucus I (Fig. 1). For their technical and social value, defence systems, therefore, are among the main concerns of the Hellenistic dynasties, who dedicated themselves to the construction of new structures or to the modernization of existing ones. It has been previously mentioned the experience of Caria under Hecatomid's reign but recent studies show that in a similar way the Molossians of Epirus, especially during the reign of Pyrrhus (3rd century BC), were able to achieve the necessary military and economic strength to militarize territories under their domain. Fortified cities and settlements on the main regional routes show common landscape system and language that organize urban centres on the basis of a model that becomes evident mark of the sovereign's presence. These characteristics are visible among others at Elea, Phanote, Dymokastro, Gitane, Byllis, Antigonea: cities in which the arrangement of the defensive systems goes along with increasing monumentality of public areas, showing once again the relevance of architecture as an active carrier of a political ideology (Caliò 2017).

In this historical context the experience of Agathocles's monarchy in Sicily (306-289 BC) is interesting for the ethnic and geographical environment in which it has developed, following behavioural and expressive forms quite similar to those known in the Mediterranean area. By Diodorus Siculus it appears significant that the assumption of the royal title is connected to Agathocles's awareness of being on the same level as the *diádochoi* (Antigonus and his son Demetrius Poliorcetes, followed by Ptolemy, Lysimachus, Seleucus and Cassander) for the force of the army, the extension of the territory and the accomplished military enterprises. Aside the historical events, it's important to note here how Agathocles' monarchy set out by his military achievements: the *basileia* was reached by the war but the guarantee of concord, *conditio sine qua no* to keep the authority, passed through a cultural policy that celebrated the autonomy of civic communities, held in a direct bond with the central authority by means of a dense network of relations within the cities themselves. This policy can be detect in the recovering of public buildings' construction expressed in theatres, *agorai* and – especially – fortifications, that seem the real evidence of the sovereign's will to propagate a common message through the forms of architecture (Consolo Langher 1999; Caliò 2017), according to the behavioural schemes experimented in the West Greece based on the government experience of Philip II. Lars Karlsson appoints to Agathocles the fortified systems of Syracuse, Gela, Eloro, Camarina, Leontini, Megara Iblea and Selinous (Karlsson 1992). To these it can be supposed to be added Segesta, while, in the context of my post-graduate thesis, I postulate to include Agrigento within the interventions promoted by the sovereign of Syracuse. To understand the role of fortifications as an instrument of propaganda for Agathocles, the present contribution will be limited to the better known cases of Syracuse and Se-

linous, carefully studied by Germanic Archaeological Institute of Rome (Mertens 1985-1987; Mertens 2003; Mertens 2006, pp. 421-423), and to the specific case of Agrigento.

The defensive system of Syracuse is a unique complex and a stratigraphic palimpsest that encompasses all the Greek siegecraft experience from the end of the 5th century to the Roman conquest. The first construction is due to Dionysius I, while Agathocle was able to enlarge, strengthen and adapt the system to the tactical necessities due to the progress in siege techniques. The island of Ortygia, the original nucleus of Syracuse where the palace of Dionysius stands, is fortified with an autonomous system while the long walls and the Euryalos Castle are developed far from the inhabited areas enclosing a wide territory: there on the Epipole the system has the fulcrum of the overall defence of the city (Beste, Mertens 2016). The walls run along the impervious nature of the reliefs (*geländemauer*), creating a system actually impregnable and praised by ancient sources that recall the active participation of large sections of the population along with the commitment of the tyrant himself that, with his by partecipation, strengthens the process of idealization of the defence (Diodorus Siculus XIV, 18), increased by the awareness acquired by the Syracusans of the danger coursed during the tragic events of the siege brought by the Athenians between 415 and 413 BC right on the hill where the Euryalos Castle rises.

The Germanic Archaeological Institute of Rome has clarified that at the end of the 4th century the fortification underwent interventions and improvements due to the Agathocles' war experience, contrary to previously claimed hypotheses about the implication of Hieron II in the realization of the admirable defensive works that hindered the taking of the city by the army of Rome. Agathocles provided for the arrangement of the so called "Bastion of the five towers", an imposing *belostasis* composed of five massive pillars and four connecting chambers useful for housing at least thirteen catapults. The structure has been reenact as a monumental front (about 32 m long, about 15 m high), two floors with a sturdy wooden ceiling in the lower rooms and an upper terrace, probably uncovered and provided with a barrier wall with openings. An interesting detail are also the leonine protomes gutters from the front of the bastion that inform us of a certain care reserved to the architectural decoration of the mighty construction. In front of the bastion an arrow-shaped *proteichisma* was built, useful to deflect the blows and protect the space in front of the towers to serve the sorties of the besieged; in addition the excavation of the deep moat was provided that combines the passive and active defence offered by possibility of exploiting the underground space not exposed to enemy fire as a gathering point for soldiers ready for sorties. Moreover, a tower with flanking wall was placed in front of the Tripylon which led into the fortified area (Fig. 2). The series of works carried out during the reign of Agathocles certify the adaptation of the defences to the tactical necessities of the war and, in the same time, represents the most powerful means available to the sovereign to show his commitment to the safety of the city to which, otherwise, the civic community could hardly have provided for. The defensive system on the Epipole with his complexity is a strong landscape element that overlooks the city and massively characterizes its image. The fortress on the hill militarizes the view of Syracuse and its monumentality remains a distinctive character that makes the capital of the kingdom a *unicum* among the ancient Greek fortifications. The connection between kingship and military power of the sovereign, that - as mentioned - provided for the settlement of defensive circuits in many cities, contributes to the common identification of the Sicilian *poleis* (Caliò 2017) and it is remarkable that his efforts where profuse with greater commitment on the borders of the conquered territories. Indeed only the defensive architecture of Selinous, on the westernmost border of the kingdom, technically and monumentally can be compared to the system of Syracuse. The plan of the North Gate in Selinous is arranged as an architectural complex, physically distinct from the boundary wall and the actual door: according to contemporary siegecraft concepts the defence organization physically moves the barrier outside the city, apart from the closed circuit of the city perimeter. The restitution proposed by the German Archaeological Institute in Rome shows the composite structure, covered by a roof, which is divided into a three-storey building about 73 meters long and 13 meters high, placed in the lengthwise direction to the original door. To the West the long central building is closed by a semi-circular tower, while to the North a second tower protected the entrance. The two massive towers were designed to house artillery machines and, thanks

to their configuration, provided cover fire also to the side flanks of the fortification which along the eastern side was protected by walled entrances with smaller openings for the defenders' sorties and was equipped with towers for artillery to protect the door that allowed vehicular traffic. The western side was steeper and less vulnerable and only two powerful towers were built; these are very interesting due to some surprising data. Tower F has allowed the researchers to reenact the image of a noticeable defence system in which the towers were distinguished from the massive front, provided by the white and glossy colour reserved for the upper elements. Traces of plaster show that the towers, marked by a large cornice with drips and crowned with balustrades with merlons, stood out from the wall, standing on the horizon, so that at a certain distance they could stand out as "flags" (Mertens 2003). In Selinous the plan that manages the "North gate" with the long three-storey central building, the semi-circular towers for the artillery and the ditches, dating to the final years of the 4th century; the system is the resulting of Agathocles's solid war experience, responding to the siege craft rules for defencing the strongholds, based on the movement of troops and on preventive actions against the besiegers (Fig. 3). The reconstruction of a tower informs us of the decorative features and gives back the impression of a striking defence system for which some observations on construction' features and adoption of re-used material are also useful to understand the urgency in the realization of a demanding work that take care of aesthetic quality and efficiency. In this regard, the functional character and the search for visibility in the systems of Syracuse and Selinous are useful arguments to introduce a new hypothesis for the Akragas fortifications that, in my opinion, can be considered among the realizations due to Agathocles.

The North side of the urban area of the ancient Akragas is distinguished by the presence of the hills of Girgenti (326 m), Rupe Atenea (351 m) and by rocky cliffs of considerable impacts that border the edge of the city, while to the South it is closed by the rocky ridge on which the famous temples stand, characterizing even nowadays the magnificent landscape view of Agrigento (Fig. 4). Recent researches conducted by DICAR, Polytechnic of Bari in agreement with Ente Parco Archeologico e Paesaggistico della Valle dei Templi has allowed the acquisition of new data, redefining the urban system near the central public area and, lastly, the discovery of the theatre of the ancient Akragas. The latest studies show a new image of the city between 3rd and 1st century BC, including the central area of Akragas in the series of noticeable urban realizations that characterize the Mediterranean in the Hellenistic age (Caliò L.M., Caminneci V., Livadiotti M., Parello M.C., Rizzo M.S. 2017). Knowing that, it was considered proper a new study on the fortification system that encircles a large area taking advantage of the highest elevation or adapting to the slopes (*geländemauer*), on a total perimeter about 12 km. The previous studies appoint the construction at the Archaic age, preserving its shape and characteristics over the centuries; during the 4th and 3rd century the most consistent changes took place, especially evident for some gates. The study on Porta VI and Porta VII allows some observations on the characteristic elements of these plans, to which, however, a very brief mention will be possible.

The system at Porta VI consists of a barrier defending a small valley with a road at his bottom that leads into by the western side in the ancient urban area. On the north-west side, a stepping structure, almost 30 m long, has a defensive and terracing function for the overhanging plateau overlooking the valley, while providing a large and solid base for housing defence artillery. The structures that specifically define access and accessory defences are not easy to recognize due to the overlapping of several phases and to the insufficiency of excavation data and the lack of a correct architectural survey that allows a deep understanding of the evidence. In short, the gate seems to be configured with a massive central body of rectangular shape (length about 33 m, width 12.5 m) with front access protected by a stepped spur connected to the curtain wall that continues along the western slope of the high ground of Poggio Meta, which morphologically characterizes the area of the gate. The current state do not allow a clear reading of the structures but two main moments can be perceived that strongly characterize the whole system and a third phase with arrangements that determine the different articulation of the system internal structures.

An echo useful to understand Porta VI is in the arrangement of the north gate of Segesta at the end of the 4th-beginning 3rd century, to which Agathocles might have contributed

while he was giving a new name (Dikaiopolis) and a new definition to the city. The case of Segesta/Dikaiopolis, is a strong propaganda act which means and demonstrates – even more – the full adherence of the king to the ideology and the behaviour of the Hellenistic sovereigns which Agathocles expressed especially in the field of fortified architecture. In matter of military science, the peculiar elements found in the defence of Segesta can be seen in a monumental form in Selinous and Syracuse, while the arrangement seems to be very close to the example of Porta VI in Agrigento.

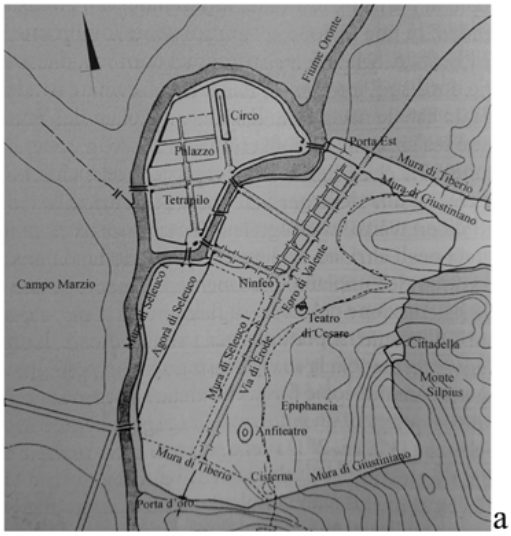
For Porta VII structural elements are very poor but the whole system can provide new interpretative insights on its siegecraft characteristics. The complex actually develops on a series of terraces that manage the area between the upstream structures and an advanced rampart, located at 100 m from the (unknown) gate entrance. The terraces system, characterized by divergent orientations, seems to obey the need to place the launching machines on high points, placed at different altitudes, according to the principles of the Hellenistic siegecfraft theory by Philo of Byzantium, so as to exploit the trajectories of artillery to provide mutual coverage to the batteries placed on ridges, made stable by the terracing works (Le Bohec-Bouhet S. 2000). The bastion built in the valley, on the cliff overlooking the ancient river Hypsas, is the key element of the system. The structure, in *opera isodoma*, is kept for a considerable part (height m 7, length m 15, max. width m 12.5, min. m 9) but it is not currently possible to completely reenact its configuration; however an echo of the decoration characteristics of Segesta can be found in the observations made by Pirro Marconi who noticed the presence of fragments of architectural decoration near the bastion, which he attributed, hypothetically, to a frame and a crenellated crowning. Moreover, the bastion was not an isolated building, as it seems today, due to the presence of a wall about 31 meters long that flanked the tower (P. Marconi, 1930). The measures and the disposition of the defences indicate that the system in Akragas has been object of interest by Agathocles for many reasons. In general, some tactical and technical solutions in some fortified systems in Sicily demonstrate the will and necessity of Agathocles to set up practical, economic and functional systems to defend the territories seized by the Carthaginians that became the concrete base of his *basileia*. The care for tactical solutions of advanced defence of the bastion at Porta VII, interpretable as a *belostasis* provided with side walls, finds comparison with the *proteichisma* equipped by Agathocles on the Euryalo's Tripylon terrace. The use of terraces to support earthworks with war machines on the top seen at Porta VI and Porta VII can be found starting from the Agathocles's experience in Sicily but can also be seen in Magna Graecia near Castiglione di Paludi and on the eastern Adriatic coast (Caliò 2017). Moreover, according to Lars Karlsson, the use of towers with internal transversal walls spread in Sicily through the builders of the sovereign and just in Akragas, near Porta V, he recognizes an example (perhaps among the first) of this type, dating between the end of the 4th and the beginning of the 3rd century (Karlsson 1992, pp. 39-50; 59).

The 3rd century, in general, seems to be the very moment in which the idea of monumental spaces is deeply connected with natural environment; in this process, the fortifications are one of the most peculiar elements of this kind of architecture. In wider terms, a look at the context of Akragas during Hellenism it's helpful to a better understanding of the context. The studies by the DICAR (Polytechnic of Bari), are giving back the perception of a city ~~get~~ involved in a western architectural *koinè* in which Sicily, Magna Graecia and Epirus prove to be linked. The monumental image of Agrigento is now perceivable, with a greater distinction, in the public space with his civil buildings in the central area of Poggio San Nicola and in the mighty terraces that enhance the orographic trend of the ground. Shortly thereafter, the contiguous Poggio Meta militarized with the imposing structures of Porta VI stood as a martial barrier between the outer space and the inner space of the city, playing his visibility on the mutual connection between artificial and natural element that is still echoed in Polybius's descriptions (IX 27, 3-6) and in Virgil's verses (III 703-704). The majestic materialization of the contrast between *inside* and *outside* is still perceived along the path of the rocky ridge that winds beneath the railway line that connects Agrigento to Porto Empedocle: here the mighty rock stands between urban space and the outer territory; the size of the calcarenite bench with its characteristic ochre colour was offered to the inhabitants of Akragas as a natural defence, adequately exploited and implemented with artificial terracing systems. At

Porta VII, research has been limited to a small part of a construction of which the actual limits remain unknown but already reveals its complexity. Immediately below the rocky ledge, the noticeable difference in height between the outside and the inside of the perimeter of the walls is more impressive if we put attention at the height of the defensive curtain plus the natural configuration and if we consider the layout of the advanced bastion for the artillery and the *proteichisma* close to the Hypsas river. Like the Epypole for the Syracusans after the events of 415-413 BC, the arrangement of such a complex plan on this side of the city is reasonable if one imagines the suggestion of the capture of Akragas by the Carthaginians, who entered the city by Porta VII.

This new conception of the fortified system of Akragas is expressed in the general context of the city included into the reign of Agathocles within broader dynamics, determined in Sicily by the experience of the first *basileia* that took the island in the ranks of Hellenistic kingdoms, to then merge in the smallest and wisely governed kingdom of Hieron II. With the assumption of the royal title all the Greek cities with the Sicilians and Sicans centres were in the reign of Agathocles. Experimentation and solutions in the field of fortified architecture can be considered exemplary and inform us - with their specific characteristics - of the creation, thanks to the monarch, of a system that is measured on a large scale and expresses itself with *monumentality-visibility* and *functionality* appropriate to territorial management of a kingdom, which shares the same model of the aforementioned case of Caria and the similar example of the fortified territories of Epirus. It is on the eastern shore of Adriatic Sea, in the intense relationships that it shared with Sicily since the time of Dionysius I and even more strongly with Agathocles and Pyrrhus, that the Agrigento defensive system finds, in fact, a significant reflection. Here, as mentioned, the Molossian dynasty organizes the territory and the control of the routes structuring a network of fortified points, monumentalising the most important centres with enterprises that have the same needs, in a sort of landscape storytelling aimed to the creation of an *image=identity* that seems to have similar formulae in Sicily. The technical solutions, the strategic choices and the considerations on the general development of similar systems contribute to reinforcing the feeling of strong ties between the two shores of the Adriatic Sea: an architectural *koinè* in which Hellenistic Sicily plays a leading role. Observing the composition of these defencing state models it seems that in Sicily a complex structure of centres organize the defence of the territory starting from its borders: Akragas, finally in the reign of Agathocles after 305/304 BC, became the frontline of the kingdom and his fortified system contribute - physically and ideologically - to give the image and the expressive example of a city bound by his sovereign.

Figure 1. a) Antioch on the Orontes, Syria. Plan of the ancient city (Lippolis, Rocco 2011); b) Syracuse, Sicily. Plan of the city wall (Adam J-P. 1982, L'architecture militaire grecque, Paris); c) Ramnous, Attica. Plan of the city wall (Adam 1982); d) Stratos, Acarnania. Plan of the city wall (Adam 1982); e) Messene, Messenia. Plan of the city walls (Adam 1982); f) Caulonia, Magna Graecia. Plan of the city and walls (Tréziny 1989, Sondages sur la fortification nord (1982-1985), Napoli)



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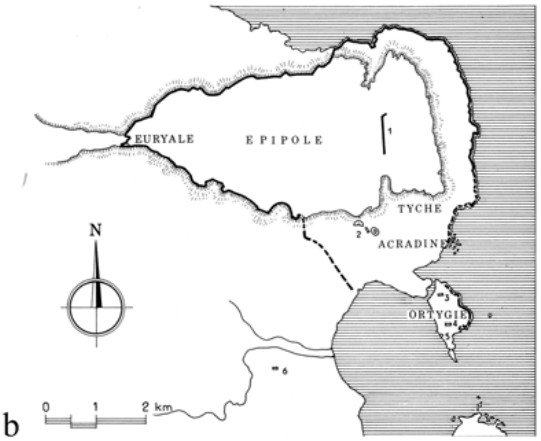

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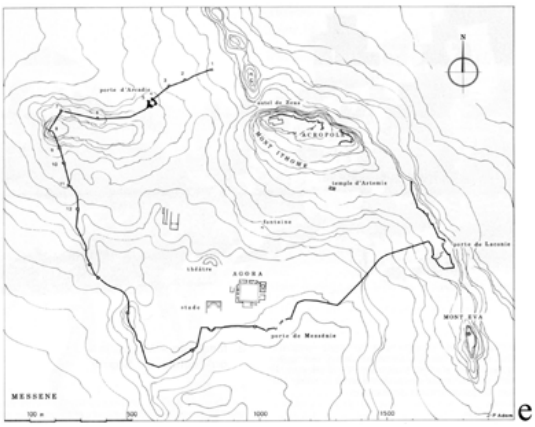

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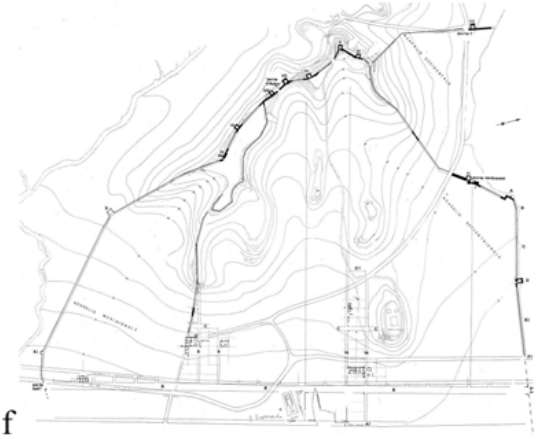

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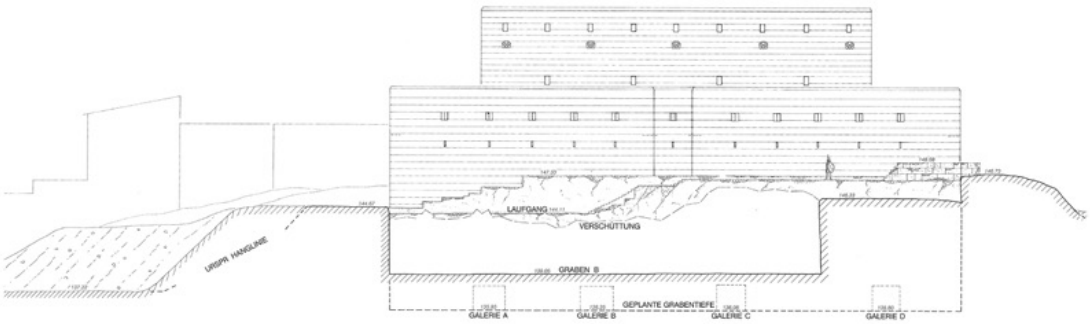
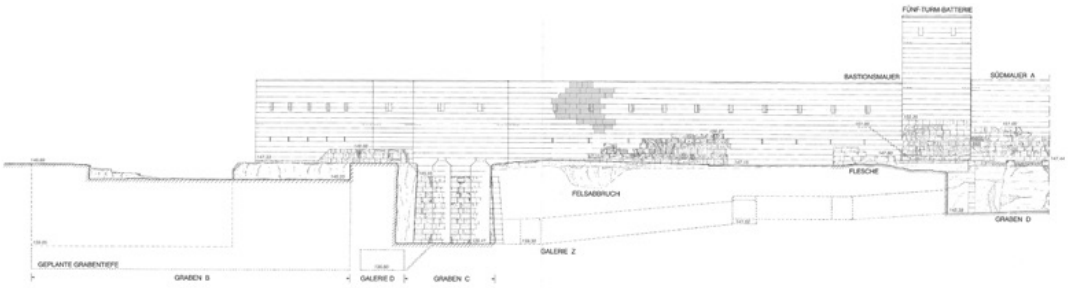
Figure 2. Syracuse, Euryalo Castle. West and South front reconstruction. General plan of the system (Beste H-J., Mertens D. 2015, Die mauern von Syrakus. Das kastell Euryalos und die befestigung der Epipolai, Reichert Verlag Wiesbaden)





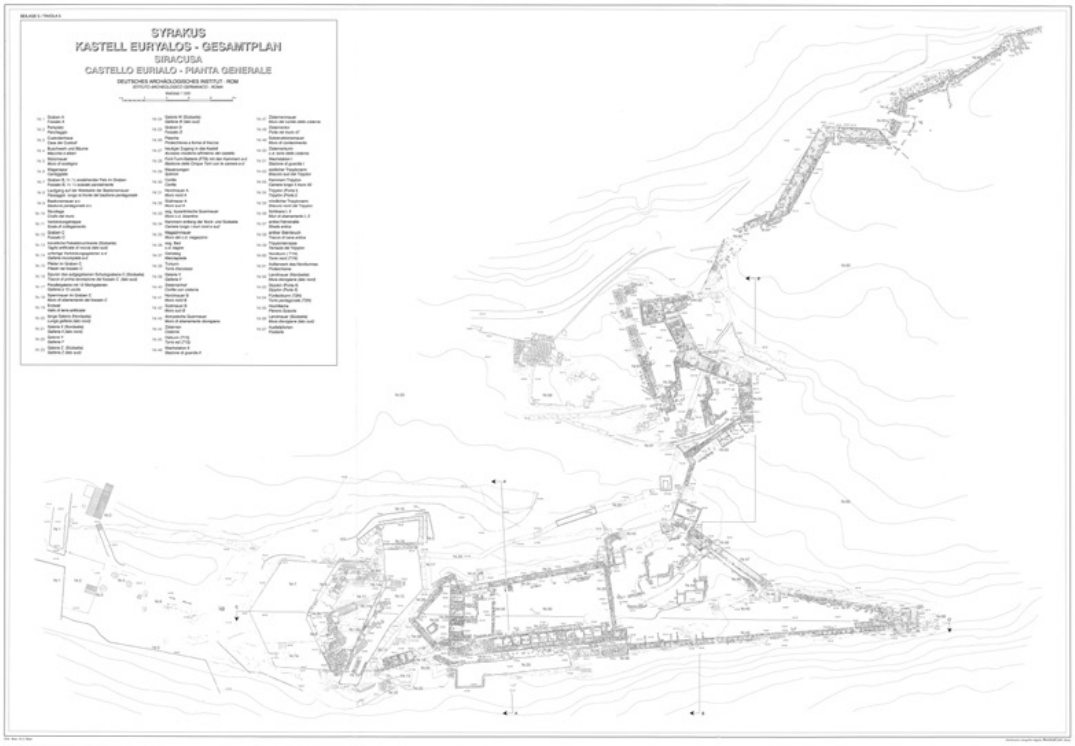


Figure 3. Selinous. Reconstructive model of the North Gate (Beste, Mertens 2015)

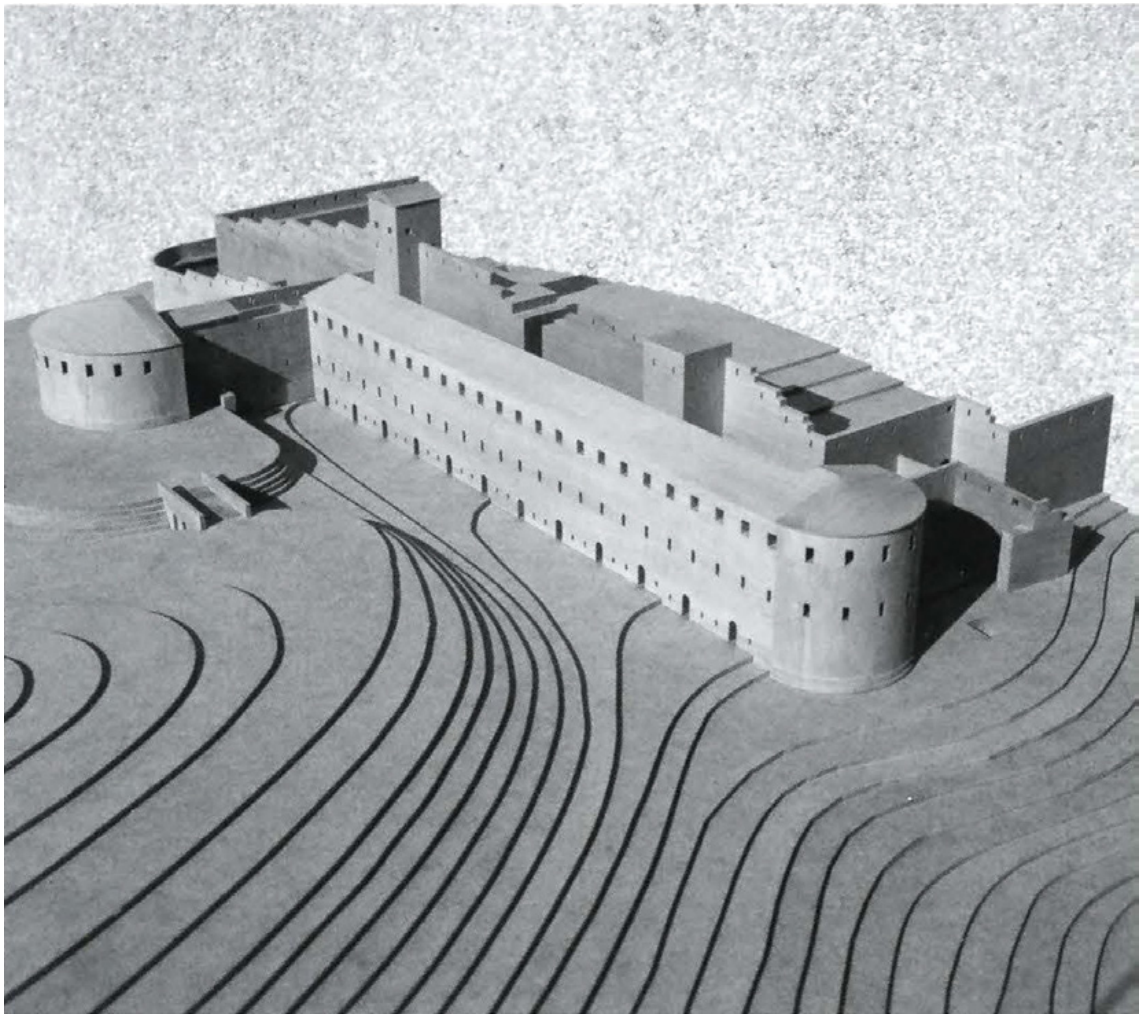
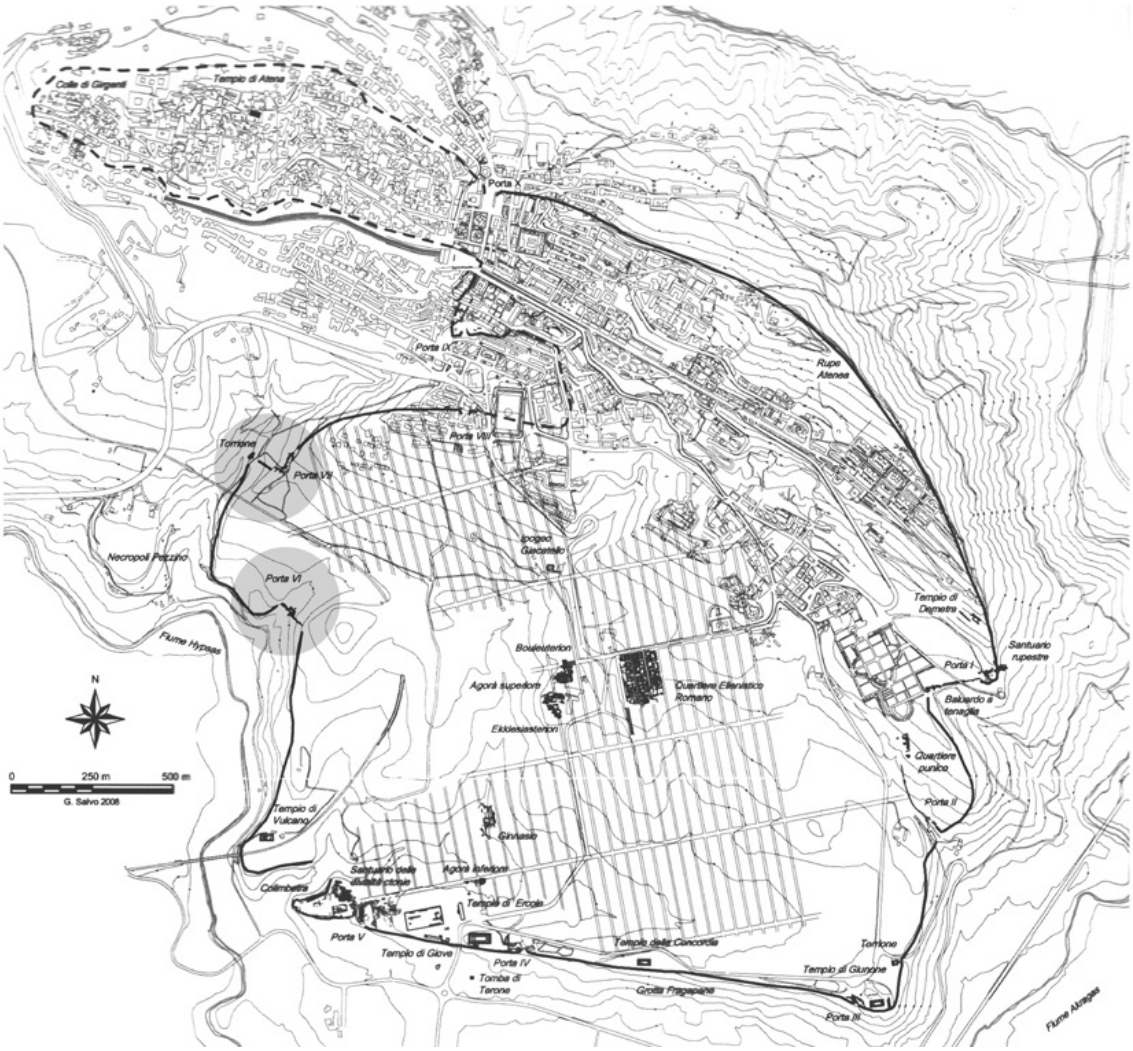


Figure 4. Agrigento, general plan of the city with indication of the fortification. Elaboration by author. (Fiorentini G. 2009, Agrigento V. Le fortificazioni, Roma)



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From ghost town to guest town: the show as urban renewal

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According to UNESCO "the urban historical landscape is the urban area regarded as the result of a historical stratification of values and cultural and natural characteristics that go beyond the notion of historical center or ensemble to include the most broad urban context and its geographical location (setting). It is rooted in a balanced and sustainable relationship between the urban and natural environment, between the needs of present and future generations and the heritage of the past (...). The approach to the historical urban landscape learns from the traditions and perceptions of the local communities respecting the values of the national and international communities". It is therefore evident that city becomes landscape being the physical place where the natural space merges with the anthropic space in a complex, almost equivocal, stratification of meanings and values, expression of what we call "identity". Starting from this reading, the contribution proposed here intends to investigate the cultural instance of conservation, enhancement and almost re-appropriation by local communities of small urban historical cores in abandonment, through three apparently very distant cases of study: Bombay Beach in Florida, Humberstone in Chile and Calcata in Italy. Instead, these urban sites, united by the particular relationship with the geographical and natural context, arise in impervious areas with clear physical limits (sea, desert and orography), isolated from the infrastructural network or uninhabited due to environmental disasters. In particular, the attention of the research focuses on the common choice of all three reported examples of a peculiar strategy of action for the revival and regeneration of these singular realities of settlement: that of the show. You wonder, therefore, on the effectiveness that the event, thought as an extra-ordinary experience, can in a certain way restore life to these ghost cities, if not even lead to the permanence of living (experience of the ordinary). Nevertheless, the study leaves a question open: is it correct to speak of "dead city" or rather would it be better to say "dormant"? Cities, in fact, as organisms in continuous metamorphosis, conceal an immense resilience in their ability to transform and adapt their structure and their image.

Introduzione

Definire strategie di tutela e valorizzazione del patrimonio storico urbano è ormai quasi una tradizione culturale della società d'oggi, rivestendo tra l'altro un ruolo significativo e centrale anche in materia legislativa. L'Unesco definisce il paesaggio storico urbano come *l'area urbana intesa come risultato di una stratificazione storica di valori e caratteri culturali e naturali che vanno al di là della nozione di "centro storico" o "ensamble" sino a includere il più ampio contesto urbano e la sua posizione (setting) geografica. È radicato in una relazione equilibrata e sostenibile tra ambiente urbano e naturale, tra le necessità delle generazioni presenti e future e l'eredità del passato (…). L'approccio al paesaggio storico urbano apprende dalle tradizioni e percezioni delle comunità locali nel rispetto dei valori delle comunità nazionali e internazionali*[1]. *Questa definizione fa dialogare il concetto di patrimonio culturale con quello di paesaggio. Il primo, in continua evoluzione, nell'attualità riconosce che un monumento fa parte del tessuto urbano in cui si contestualizza, nel considerare i centri storici nella loro interezza come sistemi culturali identitari* (Gabrielli, 2010). Il secondo è definito dalla Convenzione Europea del Paesaggio, sottoscritta nel 2000 a Firenze dagli stati membri del Consiglio d'Europa, come *una determinata parte di territorio, così come è percepita dalle popolazioni, il cui carattere deriva dall'azione di fattori naturali e/o umani e dalle loro interrelazioni* (CEP, art.1, lettera a). In questa definizione si sottolinea l'importanza della relazione tra l'abitante e il suo territorio, permettendo di capire, come riportato da Castiglioni, *la differenza concettuale tra paesaggio e territorio; il coinvolgimento della "popolazione" e la presenza di una componente immateriale nel paesaggio, data dai valori e dai significati attribuiti appunto dalla popolazione "che percepisce"* (Castiglioni, 2007).

Dunque il paesaggio, nel momento in cui viene interpretato non solo come l'insieme delle condizioni fisiche di un territorio, bensì come anche una porzione di territorio nella quale questa dimensione fisica dialoga con quella umana e storico-urbana, diventa la testimonianza di un sistema complesso di valori propri che rendono la città, e soprattutto i centri storici, carichi di una particolare identità.

A partire da questa lettura il contributo proposto indaga sui nuclei storici urbani in abbandono, con l'obiettivo di capire come questi complessi paesaggi urbani in degrado possano essere valorizzati attraverso iniziative culturali delle comunità locali. Il cogliere l'opportunità di sviluppo culturale in questo contesto diventa un modo di riutilizzare i beni da tutelare e allo stesso tempo un modo di riappropriarsi del patrimonio da parte dei suoi abitanti.

Le strategie di intervento culturale mirate alla rivitalizzazione urbana verranno esemplificate attraverso l'analisi di tre casi studio: Humberstone in Cile, Bombay Beach in Florida e Calcata in Italia. Questi dimostrano in scenari molto diversi come avviene da una parte l'abbandono dei nuclei minori in contesti geografici in cui protagonista è la forza della natura e dall'altra come lo spettacolo si trasforma nell'azione di rilancio e rigenerazione di queste realtà insediative. In questo modo, lo spettacolo come strumento di valorizzazione dei paesaggi in abbandono, più che restituire vita ai centri urbani che hanno vissuto la sfortuna della "morte", cerca di risvegliare i tessuti addormentati, per così dire "in pausa" dalla trasformazione dell'organismo urbano.

La valorizzazione dei nuclei storici in abbandono attraverso la cultura e lo spettacolo

La conservazione e il recupero sembrano essere l'unica via per garantire la sopravvivenza della memoria collettiva dei piccoli centri storici, tuttavia bisogna essere consapevoli che questi da soli sono insufficienti per risolvere l'abbandono se non si lavora insieme a un programma di valorizzazione del patrimonio, concetto su cui è incentrato questo studio. La valorizzazione, definita nel Codice dei beni culturali e del paesaggio, *consiste nell'esercizio delle funzioni e nella disciplina delle attività dirette a promuovere la conoscenza del*

1 In Proposte relative l'opportunità di uno Strumento Normativo per i Paesaggi Urbano Storico (Conferenza Generale 36a Sessione Parigi 2011) 36/C23 del 18 agosto 2011.

patrimonio culturale e ad assicurare le migliori condizioni di utilizzazione e fruizione pubblica del patrimonio stesso (…). Essa comprende anche la promozione ed il sostegno degli interventi di conservazione del patrimonio culturale[2]*, cioè è indispensabile il riconoscimento del valore di questi nuclei urbani per la giusta promozione del loro patrimonio. D'altra parte, un punto importante da considerare perché sia effettiva la valorizzazione di questi centri riguarda l'inclusione della collettività per non rischiare la sola gestione da parte di attori esterni privi del senso di appartenenza del luogo, allontanando cosi le comunità locali e accrescendo al contrario la perdita di identità.*

In questo senso sono tanti i tipi di intervento di valorizzazione dei nuclei urbani, tra i più significativi quelli a fini turistici, produttivi[3] e a fini creativi e/o artistici. I casi più riusciti integrano le diverse strategie di intervento; in essi, grazie all'inclusione nei circuiti turistici, si apre l'occasione per la produzione artigianale e locale. A loro volta la cultura e lo spettacolo diventano uno strumento di attrazione di flussi, con un programma architettonico flessibile che si adatta più facilmente a diversi spazi e integra diversi attori.

Quest'ultima strategia, oggetto di studio di questa ricerca, è un'opportunità concreta di investimento per creare una rete di iniziative culturali nella quale si organizzano diversi tipi di scambi tra la comunità locale e il turista, un ciclo vivo di flussi che riattiva i nuclei urbani attraverso la valorizzazione del loro patrimonio e della loro identità. D'altra parte, le iniziative culturali, specie se attraverso lo spettacolo, rappresentano uno degli investimenti più economici perché non occorrono grandi interventi nel costruito, sono sufficienti il riutilizzo dei beni culturali o persino delle strade, che possono ospitare mostre d'arte, orchestre, balletti, performance ecc. In questo modo si mantiene un programma di attività durante tutto l'anno, le quali riattivano i circuiti "addormentati" e mantengono viva la memoria collettiva di questi centri urbani.

Tre casi studio: Humberstone in Cile, Bombay Beach in Florida e Calcata in Italia

La cittadella delle officine di salnitro, Humberstone, nel Deserto di Atacama in Cile, è un esempio di nucleo urbano storico in abbandono, dichiarato Patrimonio Mondiale per l'Unesco nell'anno 2005. Poiché rischiava la perdita di questo titolo per il forte degrado, negli ultimi anni sono state implementate diverse strategie di recupero e soprattutto di valorizzazione del patrimonio attraverso attività culturali e turistiche.

Questa cittadella, chiamata originariamente "La Palma", fu costruita per gli operai e le loro famiglie nel 1892 dalla "Peruvian Nitrate Company". Tra il 1933 e il 1940 Humberstone, amministrata questa volta dalla "Compania Salitrera de Tarapaca y Antofagasta", si trasformò in una delle industrie produttrici di salnitro più importanti del mondo, arrivando a 3.700 abitanti nel momento di maggior splendore[4].

Dopo una forte crisi economica nel 1958 l'azienda dichiarò la chiusura dell'industria e di conseguenza avvenne l'abbandono della cittadella. Anche se le istallazioni industriali hanno subito un importante degrado, il nucleo urbano conserva ancora le costruzioni più significative: il municipio (1883), il centro sociale, commerciale e pubblico dell'officina, la chiesa (1949), la scuola (1936), la biblioteca, l'ospedale (1936), il negozio alimentare "pulpería" (1938), il teatro (1936, capienza massima 800 persone), l'albergo (1934), la piscina (1936), il mercato (1934) e la piazza principale.

Humberstone per tanti anni è stato considerato un paese fantasma del deserto, tuttavia dal 2001, grazie alla "Corporación Museo del Salitre" che gestisce diverse iniziative culturali e di recupero, ha iniziato a raccontare con le sue costruzioni l'abitare nel deserto e l'implementazione di modelli architettonici sviluppati nel periodo della Rivoluzione Industriale.

2 Codice dei beni culturali e del paesaggio, ai sensi dell'articolo10 della Legge 6 luglio 2002, n. 137.

3 Ad esempio, il Borgo di Solomeo a Perugia.

4 Ministerio del Interior y Seguridad Pública Subsecretaría de Desarrollo Regional y Administrativo (Marzo 2014). Puesta en Valor del Patrimonio. Chile, p.56.

5 http://www.bombaybeachbiennale.org/about/

6 Ibidem.

7 https://www.theguardian.com/us-news/2018/apr/23/salton-sea-bombay-beach-desert-town-artist-influx

Sebbene manchi ancora tanto per riuscire a parlare di un'ottima gestione riguardo a questo nucleo urbano isolato nel deserto, si è cercato di trasformarlo in un museo vivo: le abitazioni si utilizzano come sale di esposizione degli oggetti degli operai e delle loro famiglie, mentre vi si possono osservare pannelli informativi e fotografie d'epoca con musica in sottofondo.

Tra le attività culturali quelle più significative sono: la "Semana del salitre" (2017), organizzata dalla "Corporación Hijos del Salitre", nella quale si festeggiano le tradizioni locali della "cultura pampina"; vi si presentano diversi artisti che si riferiscono ai vecchi tempi della cittadella potendo in questo modo recuperare anche il patrimonio intangibile e rivivere le pratiche culturali autoctone; il riutilizzo del teatro per spettacoli, come per esempio il ciclo di teatro, danza e musica "Arte y Cultura en la Pampa" (2011) che cerca di proporre questo scenario come vetrina dei nuovi talenti locali, o diversi concerti come quello di musica classica della "Orquesta de Cámara del Teatro Municipal de Santiago" (2014); diversi circuiti turistici suggestivi come quelli di carattere notturno organizzati da "Magical Tour"; il "Dia del Patrimonio Cultural" (2012), giornata nazionale dedicata alla promozione del patrimonio cileno, nella quale Humberstone partecipa aprendo le istallazioni gratuitamente e offrendo un programma di attività varie come spettacoli musicali, spettacoli teatrali della Compagnia "Saltibanqui", giochi e cibo tradizionale, laboratori per la creazione di giocattoli tradizionali (run-run, zancos, emboques), competizioni e il concorso di disegno "Pinta tu Pampa".

Insieme a queste attività culturali e alla promozione turistica, si cerca di includere la comunità locale anche attraverso gite scolastiche e iniziative come "Ser Parte" (2013), nella quale si chiede alla comunità di essere partecipe del processo dell'ultimo progetto di recupero e valorizzazione del negozio alimentare "Pulpería" (2016) attraverso l'invio di oggetti e fotografie d'epoca. A questo progetto si aggiungono recentemente (2018) le ultime finiture delle vetrate della "Pulpería", la musealizzazione del "Centro de Interpretación del Salitre" e l'abilitazione del Centro di Documentazione per la consultazione di materiale.

In sintesi si assiste al riutilizzo degli spazi della collettività, quali la piazza principale, e dell'edilizia cosiddetta specialistica ad essa prospiciente, di cui soltanto il teatro conserva la sua originaria destinazione d'uso.

L'autenticità di Humberstone risiede principalmente nel particolare processo industriale del salnitro nonché nello stabilimento di un insediamento urbano che si è adattato alle forti condizioni ambientali del deserto più arido del mondo. La gestione di questo ex-nucleo urbano diventa un'opportunità per ideare un sistema economico sostenibile attraverso la cultura e il turismo, diffondendo un'architettura particolare, che ha segnato la memoria collettiva del Cile e del Sudamerica. D'altra parte, in questo caso specifico il recupero e la valorizzazione del patrimonio attraverso la cultura diventano azioni fondamentali per mantenere il giusto stato di conservazione che consentirà di elidere Humberstone dalla lista del Patrimonio Mondiale in Pericolo, nonché di riattivare i processi tipici della trasformazione del tessuto urbano.

Il secondo caso oggetto di studio è Bombay Beach, California. L'agglomerato urbano dal tipico disegno a scacchiera, si estende per appena 2,3 kmq, sulla sponda destra del Salton Sea, a 68 m sotto il livello del mare. Bombay Beach è dunque la comunità americana che si trova al livello più basso in assoluto, stretta, similmente ad Humberstone, tra i limiti fisici del deserto e del lago. In particolare il lago si è formato recentemente, nel 1905, quando il fiume Colorado sfondò un canale e si riversò in questo bacino deserto asciutto, creando un habitat privilegiato per centinaia di specie di pesci e uccelli. Bombay Beach e alcune altre località sorsero e prosperarono negli anni '50. Poi a causa della crescita incontrollata dei livelli di salinità dell'acqua e della diminuzione progressiva del bacino idrico per lo sfruttamento e l'inquinamento agricolo, si è assisitito a una vera e propria catastrofe del sistema ambientale e umano, con la morte della fauna lacustre e il progressivo abbandono anche da parte della popolazione, ad oggi ridotta ad appena 295 individui. Le autorità statali hanno annunciato un piano per ripristinare parte del lago, prima fase di un salvataggio promesso da lungo tempo. Di fatto si è di fronte a una città fantasma, costituita di case abbandonate su terreni fortemente inquinati.

La Bombay Beach Biennale, nata nel 2016, è una celebrazione d'arte, musica e filosofia che si svolge ogni anno sul "confine della civiltà occidentale". Come definita dagli stessi organizzatori, *trasforma la città in un movimento artistico completamente immersivo per tre*

giorni all'anno, tuttavia mira a lasciare un segno duraturo in un luogo che rifiuta di essere dimenticato o cancellato, proprio mentre il lago artificiale che è stato costruito scompare[5]. Prima finalità dichiarata della manifestazione è quella di attirare l'attenzione mediatica sulla città, cercando di imporre alle autorità locali per lo meno un tentativo di salvataggio a livello ambientale e paesaggistico. *Man mano che l'arte all'interno della città cresce nel tempo e sempre più visitatori affollano l'area, stiamo sensibilizzando l'opinione pubblica sia attraverso la copertura dei media, sia arricchendo la vita dei residenti che sono al tempo stesso tormentati e sostenuti da questo disastro ecologico*[6], si legge sul sito internet della manifestazione. Tao Ruspoli, uno dei fondatori, principe, fotografo, musicista e cineasta, ha affermato nel corso di una recente intervista al Guardian[7]: *non vogliamo che sia una cosa passeggera. Vogliamo lasciare un segno, anche se con la consapevolezza che nulla è permanente. Siamo attaccati da tutte le direzioni - vandalismo, caldo estremo, venti da 50 miglia all'ora*.

Come si evince dalla planimetria dell'ultima Bombay Beach Biennale, il tessuto di quella che potremmo definire l'ex cittadina è organizzato su un percorso matrice da est a ovest, che può essere visto anche come un vero e proprio asse direzionale della Biennale, lungo cui hanno luogo tutti i principali avvenimenti, spettacoli e performance, che modificano per rifusione le strutture seriali esistenti (prevalentemente leggere). Tra gli highlights della Biennale 2018 si leggono: la Bombay Beach Opera House, una casa fatiscente trasformata in uno spazio all'avanguardia per le arti dello spettacolo, ideato dall'artista James Ostrer; il Museo dell'Ermitage Bombay Beach, definito un regalo permanente per la città; lo Ski Inn, il bar più basso dell'emisfero occidentale, epicentro per concerti folk, blues e soul; il Bombay Beach Drive-In, un cinema all'aperto con carri armati, barche e fuoristrada recentemente rinnovato; e infine il Bombay Beach Estates, parco d'arte contenente installazioni di Thomas Linder e Camille Schefter.

Il flusso di artisti e turisti ha tra l'altro accresciuto i numeri relativi alle compravendite immobiliari, di fatto alimentando il processo di trasformazione avviato dalla manifestazione culturale e di spettacolo.

Terzo ed ultimo caso di studio è la cittadina di Calcata, in provincia di Viterbo. Il borgo, di origini altomedievali, è interamente costruito su un ammasso tufaceo che domina la valle del Treja. Anche in questo caso il limite fisico, rappresentato dall'orografia, ha determinato lo sviluppo di un insediamento fortemente circoscritto. Durante i primi anni del '900 il borgo venne progressivamente abbandonato, anche in seguito a perizie risalenti agli anni '30, secondo cui sarebbe stato strutturalmente insicuro. Nel dopoguerra si è assistito a un progressivo ripopolamento di artisti che hanno costituito una forte comunità, finendo col richiamare anche la realizzazione di interventi di trasformazione del tessuto ad opera di architetti del calibro di Paolo Portoghesi. Calcata è stata ed è tuttora, inoltre, un set cinematografico a cielo aperto, si pensi ad *Amici Miei* (1975) di Mario Monicelli. Rispetto ai casi precedentemente analizzati Calcata rappresenta il tessuto urbano più complesso, quasi interamente riabitato, di fatto concludendo idealmente l'iter descritto.

Conclusioni

I casi di studio di Humberstone, Bombay Beach e Calcata si configurano come livelli, o, se si preferisce, stadi diversi e progressivi di riuso e trasformazione di interi tessuti urbani. Seppure distanti nel tempo e nello spazio, i tre insediamenti sono accomunati dal medesimo rapporto con il contesto naturale dominante e limitante, nonché sono al tempo stesso luoghi identificativi di paesaggi culturali, i cui caratteri e particolarismi sono direttamente discesi dalla loro stessa conformazione. Senz'altro il teatro, la performance e lo spettacolo in genere hanno costituito e costituiscono un elemento culturale propulsore della trasformazione urbana, fino ai casi "estremi" riportati. La trasformazione momentanea, legata all'occasionalità dell'evento, tende dunque a concretizzarsi progressivamente con interventi via via più "pesanti", producendo evidenti segni nei tessuti "risvegliati".

Figure 1. Planimetria di Humberstone, Chile.

Figure 2. Gioco tradizionale del "Salto del saco", Humberstone, Chile. http://diarioelnortino.cl/juegos-criollos-en-salitrera-humberstone-por-celebracion-de-fiestas-patrias-al-estilo-pampino/

Figure 3. Bombay Beach Biennale 2018, planimetria.
http://www.bombaybeachbiennale.org/

Figure 4. Bombay Beach Biennale 2016.
https://loves.domusweb.it/bombay-beach-biennale-2018-california/

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Substraum Architecture: characters of permanence in the formative process

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Saverio Muratori in Studi per una operante storia urbana di Roma gives us the need for new critical-historical and critical-technical categories for defining the urban forms of historical fabrics that find a virtuous example in Rome. The themes of the categories deduced concern the continuity of the relationship between the ancient city and the medieval city and the permeation of building types and their functional and structural features that allow a clear reading of the formative process. Starting from the concept of "organic hierarchy of forms" the accentuating, cohesive and unitary structures will be treated, represented by the resilience characters of Roman public and monumental buildings that differ for the urban role from the most elementary structures to modular and rhythmic fabrics represented by the residential building. During the crisis of the seventh and eighth centuries, monumental buildings allowed a contraction and reorganization of fabrics thanks to the ability to "unite in variety", or to share common basic values, autonomous and individual forms that, although different in size and in the forms, they reflect the unity and scale of the city. Through the reading of the phenomena of building transformation occurred on the (and from) ruins of the theater of Marcello in Rome, urban phenomena will be treated that allowed the persistence and evolution of the special organism. The proposed research aims, through the study of the architecture deriving from an ancient substratum, to show the educational process of building organisms capable of adapting themselves to change and of physically transforming themselves within the productive cycles.

Introduzione

Nell'articolo scritto sulla rivista di morfologia urbana U+D (Sammarco C. 2018) si è già trattato del ruolo dell'opera muratoriana (Muratori S. e altri 1963) nell'identificare una "gerarchia organica delle forme" che permetta la lettura della forma urbana attraverso due categorie: le strutture elementari a tessuti modulari e ritmici (edilizia di base) e le strutture accentrate coesive e unitarie (edilizia speciale/ monumenti). Queste categorie permettono di leggere i tessuti urbani semplificando la comprensione delle componenti edilizie che se anche se suddivise per parti presentano un rapporto di interdipendenza e "formatività" del processo. L'edilizia di base è modulo e materiale di rifusione per l'edilizia speciale e quest'ultima, nelle fasi di crisi e contrazione della storia, è stata il sedime per nuove trasformazioni urbane che hanno ereditato i caratteri principali della sua struttura. Attraverso la storia operante di Venezia prima e Roma poi, Muratori fa emergere il tema del sostrato, in particolare quello delle forme antiche, come elemento catalizzatore e strutturante del processo formativo che permette di comprendere il passaggio dalla città antica alla città medievale: questo passaggio è stato studiato da Gianfranco Caniggia attraverso il tipo della domus elementare per i tessuti modulari (Caniggia, 1997, p. 63) e ripreso attraverso la "dequantificazione" dell'edificio speciale da Maffei (Maffei G. L. 2011, p.50) che accenna ai casi toscani di Lucca e Firenze e al tessuto di sostrato romano (Sammarco C. 2018). È doveroso però identificare quale è la tipologia di struttura speciale antica che ha permesso di organizzare il tessuto e avviare il processo e come è possibile leggere i caratteri di permanenza delle forme urbane preesistenti nella città contemporanea.

Caratteristiche formali e geometriche

Tra i monumenti dell'antichità (strutture coesive e unitarie) gli edifici ludico scenici per spettacoli sono tra i protagonisti delle trasformazioni della città sedimentata in tutto il mondo greco-romano e tra i più evidenti e identificabili all'interno dei tessuti urbani. Il bacino del mediterraneo è così il luogo delle città di sostrato ed è possibile trovare un nuovo elemento culturale e urbano comune legato alla processualità e alla ciclicità delle trasformazioni all'interno del mondo della realtà plastica dei nostri centri storici. Dal Portogallo alla Turchia, dalla Francia all'Italia questi manufatti architettonici hanno rappresentato la volontà umana di mettere in relazione con un linguaggio formale e tecnologico diverse aree geografiche attraverso una comune Koinè che ha innescato processi comparabili di esperienze del riuso.

Se il teatro greco dalla sua forma primitiva sino all'età classica ha sfruttato la topografia del terreno scavando la materia naturale attraverso la sottrazione di un volumetria concava o adagiandosi come uno strato superiore seguendo la pendenza del declivio, il teatro, l'odeon, il circo o stadio e l'anfiteatro romani hanno segnato un punto di svolta nel sistema di "attrezzature" della città antica. Questi infatti a partire dal teatro di Pompeo a Roma vengono spesso costruiti in muratura su terreno. La qualità plastica di queste costruzioni di grande dimensione e la loro posizione urbana hanno innescato nell'arco temporale i fenomeni di trasformazione ancora oggi caratterizzanti le nostre città. La scelta di circoscrivere la ricerca a queste strutture romane deriva inoltre dal loro essere contenitori di tematiche teoriche inerenti come la memoria, il tempo e il tipo. Ma perché queste strutture antiche, la cui materialità muraria e monumentalità non è dissimile da altre strutture urbane speciali come terme, templi e palazzi, ha avuto una così grande fortuna nelle dinamiche di sedimentazione e trasformazione della città, della realtà costruita?

L'edilizia speciale antica per spettacoli, in particolare l'anfiteatro, è prodotto ultimo della tipologia costruttiva romana e non è possibile come per molte strutture antiche partire da un "processo all'intenzionalità" (Maffei G. L. Maffei M. 2011, p. 17), specifico dell'edilizia speciale, ma dalle caratteristiche tipologiche di questi organismi speciali, dal loro rapporto con il tessuto urbano e con i percorsi. Il teatro, l'odeon, anfiteatri e stadi presentavano in sé le caratteristiche dell'unitarietà architettonica definita dalla *ratio* vitruviana: la *ratio utilitas*, la *firmitas* e la *venustatis*. Queste nelle costruzioni romane sono tra loro inscindibili e compenetrate e l'eccessivo potenziamento di una componente rispetto alle altre è sempre indicativo di una situazione di crisi. Per tanto se analizziamo questi organismi attraverso la ricostruzione

dei concetti pre-operativi che stanno alla base della costruzione antropica dei diversi edifici speciali nel tempo; concetti che sono unitari e sintetici di tutte le componenti indispensabili a strutturare in maniera esaustiva l'oggetto attuato dall'uomo, allora sarà possibile riconoscere le caratteristiche dell'edilizia minore, seriale e ritmica, che hanno formato e poi permesso la de-specializzazione della struttura speciale trasformandola in sostrato per successivi sviluppi del tessuto. Questo tessuto si attesta nel tempo sulle sostruzioni antiche attraverso delle "azioni di sostrato": il consumo, la sedimentazione e la sintesi. Azioni che sono accomunate dalla geometria riconoscibile della curva la cui permanenza permette di desumere degli "strumenti della città".

Conclusività della curva: forma e recinto

La curva è portatrice della caratteristica geometrica di generare superficie e del principio di conclusività che nella circonferenza trova una forma perfettamente raccolta, conclusa ed è riconducibile ad una delle "strutture tipiche elementari" (Strappa G. 1995, p. 77): il recinto che Strappa definisce "come il risultato dell'atto di avvolgere con una struttura continua una porzione limitata di territorio, di terreno, di superficie muraria" (Strappa G. 1995, p. 80).

Isolando gli attributi che le forme urbane in esame hanno sviluppato nel tempo è possibile risalire ai caratteri originali, ovvero alle radici dei tipi edilizi identificabili nelle azioni di appropriazione dello spazio e protezione di esso. Il recinto secondo Giuseppe Strappa coincide con il livello minimo di tipicità, ovvero "l'identificazione dei caratteri più generabili riferibili all'universo di tutti i tipi edilizi, come il riconoscimento delle forme primarie dell'atto costruttivo che precedono la formazione dei tipi edilizi, generate nella primissima fase del processo di antropizzazione del territorio" (Strappa G. 1995, p. 77): Si può parlare di un processo di antropizzazione del territorio anche per l'occupazione di queste forme di sostrato in quanto l'uomo medievale si trovò di fronte a rovine divenute spesso delle topografie naturali in cui persistevano i caratteri fondamentali della recinzione, del limite esterno ed interno.

Per desumere questa struttura tettonica primaria è necessario un processo di astrazione che arrivi sino ad individuare le forme simboliche originali che non sono rintracciabili allo "stato puro" poiché possiedono il massimo grado di significato universale che non è immediatamente visibile nella realtà della città sedimentata ma desumibile attraverso la lettura delle sue parti. Interessante il parallelo che Strappa fa con i simboli delle scritture ideogrammatiche: gli antichi egizi della I e II dinastia rappresentavano la parola "città" attraverso due passaggi logici successivi in cui la città coincide con la figura della circonferenza. La circonferenza/ recinto racchiude poi la cellula elementare della casa orientata secondo i percorsi.

Il recinto è dunque appropriazione dello spazio, associabile all'azione dell'occupare; la forza di questa forma tipica elementare sta nell'essere anteriore alla forma degli stessi tipi edilizi. Se attraverso Muratori le forme urbane di sostrato in esame appartengono alla categoria delle forme coesive/ unitarie e, nel nostro caso, la curva e la circonferenza sono le forme matrici, è conseguenza che il loro principio generatore, l'essere recinto, sia l'idea di legame a cui seguono i termini di centro e nodo, base del sostrato seriale e ritmico della domus. Il recinto, la perimetrazione di una parte appartenente ad un unità, è così "conclusione", e presente ad ogni scala dell'operare antropico: dalla cornice di un quadro che ne definisce il limite nello spazio, alle mura di una città che sono limite di un microcosmo. Esso è esclusione e inclusione, è sperimentazione dello spazio concluso.

Due categorie tematiche antitetiche: Firenze e Lucca

Le forme urbane di sostrato accomunate dall'elemento della curva sono divisibili in due prime categorie tematiche che permettono attraverso un processo deduttivo di configurare gli "strumenti della città". Questi "strumenti" sono assimilabili ad azioni spontanee che sedimentando le forme che hanno agito nella modificazione del tessuto urbano senza perdere la visione complessiva del processo formativo; visione rappresentata dal permanere del sostrato come elemento organizzativo del tessuto. Tra i diversi casi di forme urbane di sostrato è possibile individuarne due, analoghe per struttura di sostrato, che hanno avuto un

destino differente all'interno della città e che permettono di raccogliere alcuni tessuti derivanti da sostrato, in due prime grandi categorie tematiche.

Gli anfiteatri romani di Lucca e Firenze (fig. 1-2) sono stati consumati, occupati e interpretati con nuova edilizia sino a diventare parte del tessuto urbano in maniera organica continua hanno però processualmente portato a due forme urbane diametralmente opposte ma complementari. Lucca è assimilabile ad un grane recinto abitato permeabile attraverso percorsi che sostituiscono alcune partiture dei fornici e che portano ad uno spazio pubblico centrale; Firenze è un grande "pieno" della città, una forma conclusa, tagliata da due percorsi che ci consegnano la percezione della misura di una materia abitata e porosa. Una è un grande vuoto raccolto mentre l'altra una massa viva. Si individuano così due categorie derivanti dalle forme di sostrato: quelle lavoranti sulla permanenza del limite e dell'elemento geometrico della curva, sia in qualità di convessità esterna che di concavità interna, e quelle che pur mantenendo la forma curvilinea esterna sono lavoranti sull'intasamento dello spazio centrale a seguito della formazione di nuovi percorsi.

Venafro e Sepino

I casi del centro urbano di Venafro (fig. 3-4-5) e dell'area archeologica di Sepino (fig. 6) in Molise rappresentano un campo di indagine per evidenziare il carattere di iniziale autonomia degli organismi speciali per spettacoli e la persistenza del limite e dello spazio nodale, l'arena o l'orchestra, come spazio pubblico. Entrambi i casi rientrano nella categoria tematica della concavità e convessità nella permanenza del limite ma rappresentano una fase primitiva rispetto a Lucca poiché mancanti di un gesto di intenzionalità per accordare e sintetizzare le variazioni tipologiche attestatesi sul sostrato antico. Importante è evidenziare l'area culturale e il contesto urbano differenti dal modello toscano a cui si fa riferimento: l'area molisana dopo la caduta dell'impero romano ebbe un rapido declino e quando i longobardi giunsero nella regione spopolata non trovarono nessun centro urbano significativo. I due casi sono diversi per tipologia tra loro ma analoghi per evoluzione; la scala dimensionale di Venafro è simile a quella dell'anfiteatro di Lucca ma la città ha avuto un ruolo più marginale, e come gli studi sul tessuto edilizio romano trovano un'applicazione concreta sui piccoli centri storici, così partendo dalle categorie tematiche generali è possibile interpretare criticamente e trasmettere il valore di questi due complessi non particolarmente conosciuti negli studi morfologici.

Il teatro borgo

Sepino, nel medioevo chiamata Altilia, sorse in un'area che era punto di incontro di tre direttrici per la transumanza, ove vi era la presenza di una sorgente. La città romana è il risultato di una serie di stratificazioni che dal III secolo a. C. videro diversi insediamenti sull'asse del tratturo principale della dorsale appenninica: nonostante l'applicazione dello schema urbanistico romano, le tracce dei collegamenti sannitici strutturati dalla presenza del percorso del tratturo, influenzarono la struttura cardo-decumana e i due assi principali della città risultano non ortogonali (Pinder 2016, p. 23).

Questo punto di sosta attrezzato fu delimitato dalle mura tra il 2 e il 4 d. C. ed è in epoca imperiale che sorge il teatro: questo viene costruito non semplicemente in un rapporto di tangenza con il recinto murario ma addossato ad esso e mentre la parte superiore della cavea poggia sullo spessore della parete, l'ima cavea è scavata nel terreno. La peculiarità principale di questa struttura rispetto alle altre della stessa tipologia è, oltre al suo impianto urbano, la presenza di una porta nel punto in cui i due sistemi vengono a sovrapporsi: è un ingresso sia alla città che al teatro; manifestazione della nodalità di questa tipologia speciale in cui i percorsi convergono in quello che in età medievale e moderna diventerà lo spazio pubblico dell'aia. Dal primo medioevo infatti si è formato sul teatro della città antica un complesso di edifici che hanno sfruttato la parete intera dell'ambulacro perimetrale come fondazione assumendo la forma di un semicerchio.

Franco Valente evidenzia che dalla lettura di una pianta storica conservata nella Biblioteca Provinciale Pasquale Albinio di Campobasso (Valente F. 2008) esisteva, a metà dell'800,

visibile ancora oggi, una casa impiantata sulla scena, un edificio sul tetrapilo occidentale e una serie di tre case a schiera; non vi era ancora la casa che saldava queste unità tra di loro. Prima dei restauri del XX secolo il complesso edilizio dunque manteneva solo la forma, il limite dell'antica struttura, mentre la maggior parte della cavea e dell'orchestra era lo spazio pubblico comune delle abitazioni. La vocazione collettiva permaneva così come la sua forma ma con un valore storico aggiunto di testimonianza di una comunità agricola e pastorale autonoma, che aveva trovato nel riuso dell'antico l'elemento coesivo in grado di saldare in un unico organismo più unità residenziali. Qui il teatro antico è matrice di collettività.

Fortunatamente non furono attuate le demolizioni che la pratica archeologica di un tempo richiedeva per mettere in evidenza l'antico ma principalmente fu scavata l'area collettiva per far emergere le prime gradinate, la pavimentazione e i residui della scena. Così come il Nottolini a Lucca, che focalizzò la leggibilità del sostrato e delle tipologie che da esso erano influenzate nel limite esteriore, nell'elemento convesso, a Sepino fu il piano orizzontale ad essere citazione dell'antico attraverso la visibilità dell'elemento originale antico. La forma attuale di questa architettura di sostrato è sintesi di due architetture che non sono mai esistite contemporaneamente, anche se una ha influenzato l'altra, ma che insieme danno origine a un terzo tipo di monumento che è sintesi di due momenti storici differenti. Come nel caso di Venafro e dunque Lucca, i percorsi sono identificabili come accessi ad uno spazio centrale che conserva una sua autonomia rispetto a ciò che vi è fuori dal limite; casi antitetici a quello dell'anfiteatro di Firenze.

Conclusione

Questi primi casi studio citati fanno parte di un più grande abaco di forme urbane di sostrato che raccoglierà all'interno delle categorie tematiche dedotte le variazioni di tessuto che si sono formate dagli edifici speciali ludico-scenici antichi, mettendo in evidenza come cambi il destino di una forma urbana in relazione non solo alla forma del sostrato ma alla sua posizione, alla gerarchia dei percorsi, al ruolo economico-politico di un centro abitato e alla tipologia edilizia derivante all'area culturale in cui sorgono (S. Muratori 1963). Struttura urbana iconica che è manifesto di questa processualità è il teatro di Marcello a Roma: qui sino ai primi anni del XX secolo erano ancora presenti le botteghe occupanti gli antichi fornici del piano terra e su questo anello antico di sostrato si innestava - e ancora oggi è presente - il palazzo rinascimentale ad opera del Peruzzi il cui carattere di elemento urbano formatosi attraverso rifusione di unità residenziali a schiera è riscontrabile dalle case a schiera che occupano ancora una parte dell'isolato. Isolato in cui la caratteristica nodale era rappresentata dal cortile-giardino del palazzo.

Figure 1. Lucca: relazione tra la maglia urbana antica, le mura e le strutture coesive nell'evoluzione della forma urbana. (C. Sammarco); **2.** Firenze: relazione tra percorsi e poli nella "densificazione" della struttura coesiva. Emerge come la posizione intrapolare dell'anfiteatro tra il Palazzo Vecchio e Santa Croce (entrambi edifici speciali con un carattere catalizzatore di fenomeni urbani) abbia permesso il passaggio dal tipo urbano "lucchese" operante sul concetto di limite abitato a quello di tessuto "denso" e poroso attestatosi sui percorsi di ristrutturazione necessari a unire i due poli. (C. Sammarco)
http://www.bombaybeachbiennale.org/

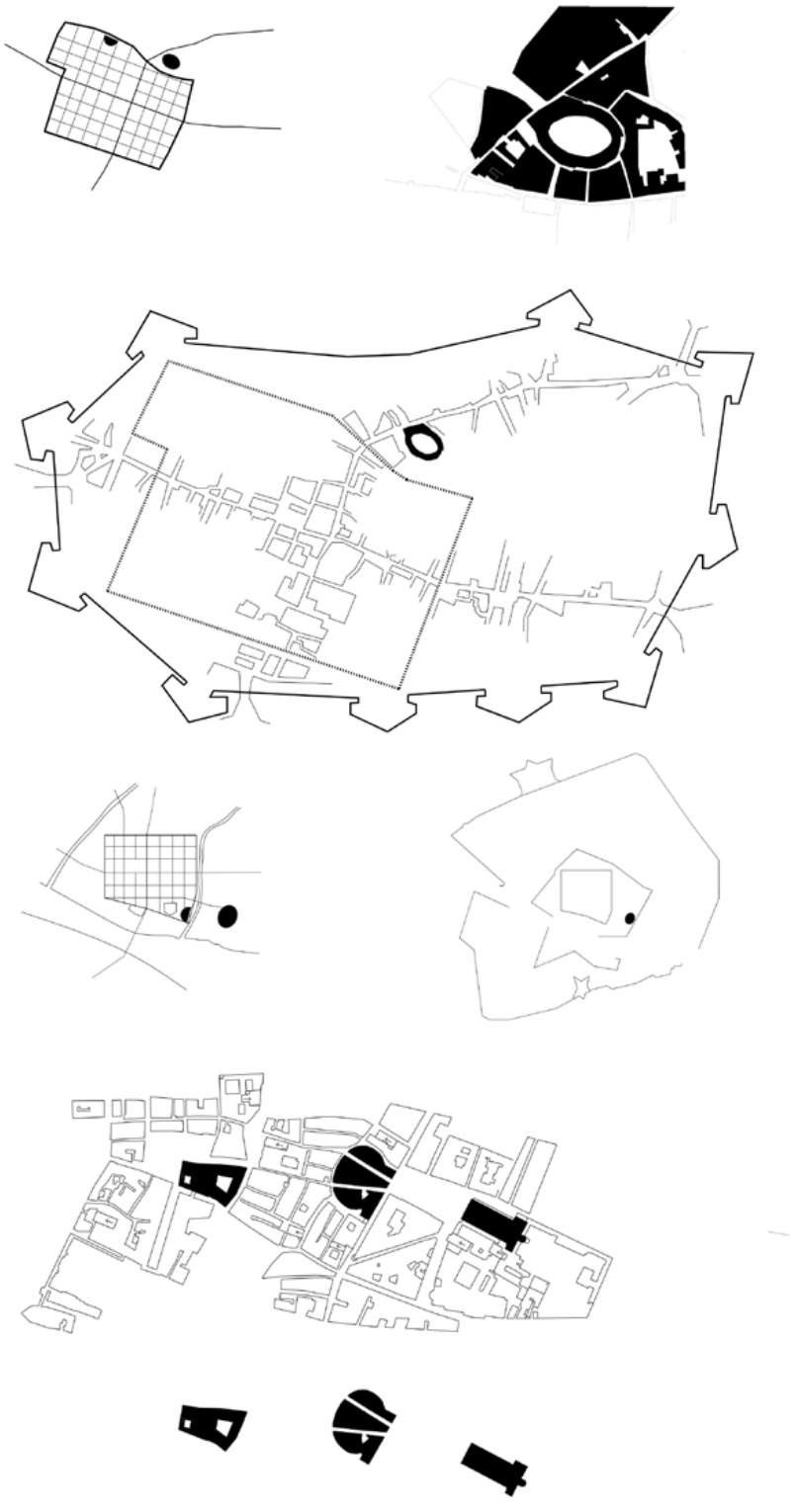
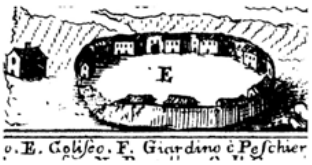
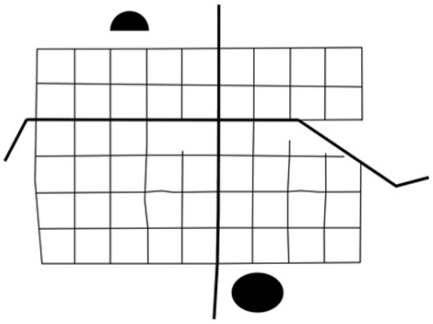
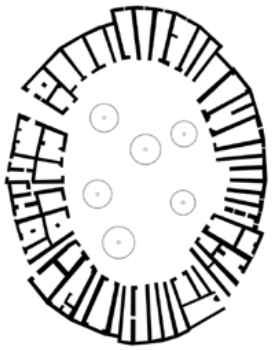
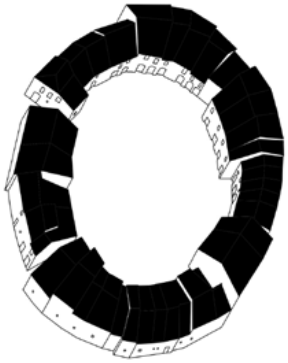


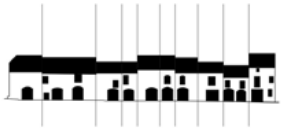
Figure 3. Venafro: la forma curvilinea dell'anfiteatro diviene elemento catalizzatore autonomo al di fuori del centro urbano medievale in relazione con i percorsi territoriali. Per secoli è stato una struttura di servizio per la pastorizia e l'agricoltura; **4.** Il tessuto edilizio di stalle e magazzini eredita le caratteristiche seriali e organiche della struttura antica e la sua forma radiocentrica; **5.** Si nota come la serialità della struttura sia leggibile anche in alzato e di come sia identificabile la muratura romana che fa da sedime a quella medievale e moderna. (C. Sammarco)











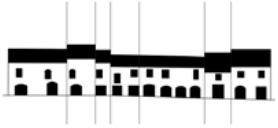
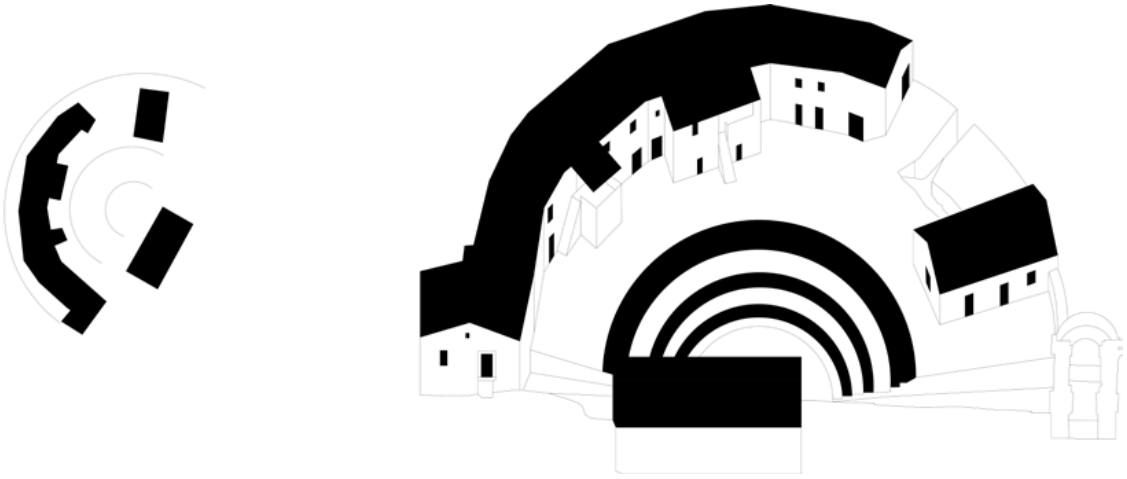


Figure 6. Sepino: i restauri hanno messo in evidenza la natura metamorfica dell'insediamento rurale di Sepino derivante dal sostrato del teatro romano. Un sostrato che anche se giaceva sepolto emergeva attraverso la modularità e la curva dell'edilizia come nel caso di Venafro (C. Sammarco)



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Reflects the tenet of privacy to be formed of the dead end in Iranian urbanism after Islam Case Study: Historical Center of Shiraz. Iran

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The architecture and construction of a city in each culture are subject to the conditions it created for that culture. This culture is the result of human and natural geography. One of the most important aspects of culture and geography is the architecture and urbanization of homes and neighborhoods. The main principles of cities and the architecture of the metropolises of the Islamic world are the principles of introversion, concealment, and confidentiality. This principle has foundations and wide results in culture and geography, and many of its theorists have considered it the most important principle of architecture and urban planning of the past. This culture exists in the old context of all cities in Iran. The visual confidentiality of these features is the overwhelming debate about it. Nonetheless, in urban studies, the concepts of the realm of personal space have been investigated, rather than directly referring to confidentiality. Alongside these two concepts, which are primarily lenders to behavioral studies, there are other dual concepts such as confidentiality and the local community in urban studies.

One of the reasons for this study is the lack of direct studies on privacy and its relationship with the formation of private urban spaces defined as alley that named dead-end.The city of Shiraz is one of the ancient cities of Iran, which has a unique historical texture.By studying the structure of Iranian cities after Islam, it can be seen that the formation of the dead-ends in urban neighborhoods is subject to special cultural conditions.

The dead-ends created in this city, which is one of its structural features, is the result of the cultural interaction of residents in a small urban neighborhood.The purpose of this research is to investigate how dead-ends occur in urban neighborhoods. This research is descriptive-analytic and has selected the historical context of Shiraz as a pilot.

Introduction

"Introspection" and "Confidentiality" are two basic principles in the Iranian-Islamic architecture that have greatly contributed to the formation of the spatial organization of cities and the physical elements of traditional Iranian buildings. Although the climate has been effective in choosing the principle of introversion in the urbanization of Iran before Islam, but in the Islamic era, based on the foundations and values of belief and Islamic worldview, in addition to the model of introversion, the principle of confidentiality, from both the physical and semantic perspectives as one The main criteria for designing cities and buildings were considered by architects. These features led to the establishment of a close link between the principle of privacy and the principle of introversion in the formation of homes in traditional Iranian architecture. In a way that architects specifically consider the intrusion of privacy in designing and organizing the spatial-physical elements of homes.

One of the most important architectural elements that plays a major role in creating confidentiality in Iranian homes is the entrance to the house. The process of entering a house in Iranian architecture can be divided into two parts. The porch, which is used to divide the space into the private sector, and the frontage who divides the space into the public space.

There is a lot of research in relation to Islamic cities that Which has been studied directly on the concept of privacy and its effects on the shape of settlements.

In this research, the concept and dimensions of visual confidentiality have been analyzed by reviewing texts and documents related to the subject and reviewing their content.

The results of this study show that the concept of confidentiality is a fundamental factor in the control of the physical organization of the city, which has led to the development of guidance from the inside to outside. This means that the private realm is superior to the public sphere, covering the main aspects of human life, especially in the central courtyard of the house. Therefore, it can be argued that the nucleus of the forces forming the Islamic cities is based on the concept of visual confinement and its structural rules (an introvert structure based on constraints and thresholds) that derives from Islamic law.

Therefore, the main objective of this study is to obtain a precise and scientific cognition about the factors affecting the provision of privacy in the residential area through dead-end and entrance spaces.

Data and research method

The research methodology has defined the search process (rather than the search product) (Grout & Wang, 2007). Research methods are considered in a variety of ways such as basic research, descriptive, exploratory, exploratory, empirical, strategic, comparative, analytical, and so on(.Andalib,2003). For this purpose, we first study and analyze the physical structure of the cities of Iran in terms of urban morphology and then, by comparative comparisons of existing samples in Shiraz, we will address the mutual effects of the typology on dead-end. therefore, the research method is descriptive-analytic using analytical methods. To do this, at first, using the descriptive method, the statements and definitions and theoretical frameworks of traditional and modern urban planning were followed up to the Iranian-Islamic city as a research approach. The purpose of this research is in the theoretical research group. For studying the literature and collecting basic information, library studies and referrals have been used. The stages of this research include reviewing the theoretical foundations of research, analyzing research findings, and concluding and presenting a solution.

Theoretical fundamentals of research

The city is a kind of social organization, whose emergence in the time-frame required the provision of specific conditions. In a survey of cities and a general look at cities, it is a feeling that each city has its own space and with a scientific look that has a morphological distinction. In cities, every activity that is considered by humans is essentially reliant on culture, and culture is the result of habits, customs, traditions, traditions, styles, and common ways of life. In general, it can be said that in urban spaces there is a complex of civilizations that are like islands in the city.

One of the factors that have always played a decisive role in the construction of cities

and is used in all cities is the "urban culture" factor. It can be said that urban culture is the very foundation of civilization and behavior of citizens, which is the result of values in the heart of society, which is the product of this process of the concept of space in the city, which is itself a very important part of the morphology of cities.

In the morphological development of Islamic cities, the following factors have been involved: 1) religious factors 2) climatic factors 3) economic factors 4) communication factors 5) governmental and military factors 6) health factors 7) waqf factors.

Islamic culture, with the slogan of equality, fraternity and vertical and horizontal movement, caused the dynamics of urban society and the dynamics of people in the urban community. In the beginning, a close relationship was established between the concept of the city and Islamic culture. And was formed in the city of the first Islamic state. Islamic culture has been important for the privacy of its family and its values. Consequently, all of the rules and regulations in the way planned affected the construction of cities and gave them a special identity to their morphology that It is different from other cities in the world. Therefore, the religion of Islam was also effective in the transformation of the former cities, and also the establishment and growth of new cities with its own special structure. On the other hand, Islamic ideology is not only effective in the emergence of cities but also has greatly influenced the structure of the body. This structure involved various changes during various periods of time, with new governments and ideologies.

The role of entrance space in the formation of buildings

The entrance space is as a joint between the building and the public domain. The space used to change the direction of the journey and also to enter it(Sultanzadeh, 1993). In urban and rural historical contexts, generally, two types of entrance space are recognizable by the type of generalization (public and private). Usually the main entrance of large and important buildings of urban architecture is located in a location that is well visible from the open air and the surrounding roads. They also often made some of the elements and interior spaces of the building that everyone's attention immediately after entering(Sultanzadeh, 1993). But in the area of neighborhood and area of residence, what matters is how to interact in both the private and public arenas and create the confines of the building. The entrance as the space on the border between the two arenas while separating outer and outer is also the factor of the interconnection of space inside and outside. On the one hand, it is part of the entrance to the house and is part of the interior space, and in another aspect is part of the public space that responds to behaviors in urban context(Mehdi Pour, Jafari, and Saadati, 2013). privacy can be considered one of the principles that has existed from the past in Iran's architecture and is also somewhat available in other cultures؛ But the peak of its flourishing should be seen in the post-Islamic architecture of Iran (Sifian and Mahmudi, 2007). Based on this, if we look at the experience of the past in the old cities of Iran, we can recognize three spaces with different characteristics from each other.First, private space includes a courtyard and its elements; the second is the semi-public,semi-private space which is as a special dead-end or porch connected to the several houses. And the third was the public space that was on the alley or the square(Tavasoli, 2011).

Entrance space in the historical context of Shiraz

What that is remarkable about the historical context of Shiraz; is the attempt to create confidentiality while squeezing and enclosing alleys and streets. This attempt has been made in the field of passage by creating an inward space, in accordance with its hierarchy. Considering the general and private nature of the passages in the historical context of Shiraz, it is possible to divide the entrance spaces and access routes into three categories:

- Entrance spaces formed in the main passage.
- Entrance spaces formed on the secondary passage.
- Spaces formed on the secondary passage and porch main passage.

According to the subject of this research, only the third sample (Spaces formed on the secondary passage and porch main passage) are examined.

This sample is the simplest form of the entrance space in the historical context of Shiraz, due to its organicity and the reduction of the width of the alleyways, the lowest spatial arena is compared to other samples.

Due to the plurality of secondary passage and dead-end in the area of habitation, this pattern is more diverse than other species and can be seen in simple entrance spaces, awning entrance spaces, camber entrance spaces, and so on.

Visibility control in secondary passages and dead-ends

All paths that connected the main passages to one another or the carriers constructed to provide access to a neighborhood or a number of residential or urban units are considered to be the secondary passage (Sultanzadeh 2008). In the context of privacy in architecture and urban planning, defining the space in such a way as to have an environment of both physical and semantic aspects. privacy in architecture is more foc

used on the principles that will shape space security. In the semantic field, there are features that bring respect and value to the architectural environment in such a way that the individual is at lull (Mahdavi Nejad & Mashayekhi, 2010).

Hence, maintaining the respect of family and individuals and paying attention to the principle of confidentiality has been one of the most prominent manifestations of religious and cultural principles in Iranian-Islamic architecture and urbanization. Other aspects of Iranian architecture are respect for the Iranian architecture and the fitting of building organs with human organs.

Passages

The most prominent feature of historic passages is their human scale. The proper width is another characteristic of the passageways of historical cities, which are tailored to the passers by them, and we interpret it as a passing and physical hierarchy.

security

In the historic city of Shiraz, the city's fence and gates were an important factor in controlling the arrival and departure of people in the city. Also, the densely populated city of the city was able to focus citizens in a more limited space, in order to be able to attack against the invaders able to defend. Also, the principle of territory in the city is a very important principle for creating a sense of ownership of the people to deal with crimes. One of the other measures taken to reduce crimes is the use of design solutions.

That can be pointed out the hierarchy of entry, the lack of visibility from the outside into the house, the presence of the neighborhood, alleys, dead-end alleys and urban organic texture that was not identifiable to strangers.

Urban morphology in small cities

In historic cities, structures of varying scale can be seen; while contemporary cities attempt to add the largest scales by suppressing small-scale structures. Another of the distinct goals of modernism was the elimination of all the fractal dimensions of architectural commonality and the replacement of them with direct and long paths, as well as strengthening them with regular building rows. The justification for this was to eliminate the apparent confusion of old cities, while they do not realize that this apparent disorder is, in fact, an organized combination with a hidden order to keep these cities alive until today. Organic cities with integrated and coherent structures on all scales from very large to very small in a hierarchical order are vibrant and vibrant cities. In other words, living cities have a large number of connections between nodes, while modern cities lack these characteristics. These connections require a large variety of adjacent nodes to be developed naturally(Kay Nush, 2013).

Population increase and change in urban morphology

Increasing the population of the city is one of the contributing factors to urban morphology. Sometimes the unnecessary growth of the city fails to shape the city and make the city uneven. The increase in population and the increase in residential per capita in

construction units causes the morphological structure of the city to crumble and the city's organic pattern becomes unusual. With the change in residential per capita in construction units and changes in the city's fabric, dead-ends are eliminated from the main alleys and main paths and are added to construction plots. Destruction of dead-ends, which itself forms an important part of the private-public space of the city, reduces the level of confidentiality of residential units associated with it.

The study of the research and the history of the formation of indigenous and traditional cities suggests that traditional urbanization is essentially organic and interacting with the natural and social environment, and urban utilities and how they are constructed are balanced, coherent and compatible with each other. In traditional urban planning, the combination of utilization, housing diversity, sense of place, open spaces, mental and human transport, social participation of people and economic management of the city have been an integral part of urban life. These features are also the core of Smart City today.

The structure and features of historical textures in Iranian cities

Traditional Iranian cities express a special construction, and this conjunction of the city center and neighborhoods is through main passage and bazar routes, which have been responsible for linking the main elements of the city. In the ancient textures of Iran's historic cities, the city center and the center of neighborhoods connect through the main passage. The centerpiece of the city consists of various elements close to the gates and continues to the neighborhoods. The main elements of the city center are the mosque, the bazaar with different function, caravanserai, madrasa, bath and so on(Habibi, 2006).

In general, the main feature of making the body of the old part can be summarized as follows:

The principle of the continuity of space that the physical organization of the old towns based on the spatial association between the following elements is:

1. City Center
2. Local centers
3. Main passages
4. Square(Tavassoli, 1997).

The functional-functional elements of the historical textures of Iranian-Islamic cities

Elements and components that existed in the ancient cities of Iran have had an integrated and interconnected spatial interaction. In Islamic cities, such spaces as mosques, bazar, government centers, residential spaces, etc., each of them preserve their place, rank and character in the urban hierarchy. These spaces together play their role and create a unit that displays the city in terms of space, coherent and interconnected. The main elements of the urban complex in Islamic cities are: citadel and great wall of the city, mosque, bazaar, square and residential neighborhoods.

Street network, wall and external facade

The structure of communication has been shaped in the context of ancient urban textures in the context of historical formation and past functions, with a view to the human and organic scale.

Short-range in pedestrian scale with a socially-prominent role, the complexity of the passageways due to weather conditions and urban security, is one of the hallmarks of the old-fashioned communication network structure(Esmaeilian & Pourjafar,2013).

The link between neighborhoods was through a narrow network of twisted streets, the streets that are divided into a dea-end street, quasi-private, private, and public. The city wall also includes a number of gates, each of which ends in a neighborhood(Komeili & Khodaei,2011).

Preference of space relative to volume

In this urban planning system, which has been popular in Islamic urbanization, urban streets and blocks are not elements of the organization that has been infected with urban texture. But urban texture was created from the side-by-side arrangement of residential spaces, which is

unlike the medieval cities. In the Islamic city, the spatial organization of building volumes and passages, as well as the geometry and order of the city, are determined step by step during its growth(Afsharnaderi, 1996). A noteworthy point in urban passages and accesses is the extent of its passageways. Which is wider than the other streets of ancient and Islamic cities. The bazar is seen as a linear element in the structural of the city. Therefore, the spatial and social organization of the city is located on the basis of neighborhoods, Mosque, Hosseiniyeh, water depots, baths, accesses and bazar that can be identified in the city fence according to the environmental conditions.

Analysis of the findings

Each of these historical periods has had a direct impact on urban morphology. Each Iranian city has its own morphology due to its physical structure. By studying the history of urban morphology in Iran, it can be seen that many of the definitions of modern urbanization do not coincide with the Iranian urbanization in the old periods. The formation of urban morphology in Iranian cities was not only subordinate to culture, but also to economic, political and social conditions. These include the formation of urban dead-ends. These generally shorter alleys, shared by private and public spaces, are the result of the Iranian urbanization process. This space has a variety of functions including:

- Creating a semi-private semi-public space and creating confidentiality in a common space.
- Establishing the relationship between outer space and outer space as an intermediate space.
- Create a common point between multiple homes and spatial sharing.
- Securing home entry by sharing the entrance of a house in a semi-private-semi-public space by neighbors.
- Securing the city at the onslaught of enemy forces and trapping them.
- Balancing open and closed space in urban morphology.

In the process of urban development and change in the cultural and social structure of the inhabitants, the old urban structure has been changed and many of the parameters effective in the formation of morphology have been eliminated. One of these can be the loss of the principle of privacy. The change in the social structure of the city has also been followed by the change in urban morphology. One of the effects of this change was the disappearance of dead-ends. Nowadays, the social structure of cities, as in the past, does not have identity cohesion, and this has caused a lot of social problems in the cities.

Conclusion

The major role of religion as the source of the formation of many cities in the Islamic countries is undeniable and, like other factors creating cities, plays a major role in the creation and development of urbanization. The plurality of cities in the Islamic lands has been accompanied by the development of a kind of Islamic urbanism. What is important in Islamic cities is the presence of elements such as religious places, bazar, public baths and Squares. In case of neglecting each of these elements and their specific function, their Islamic and historical identity is dimmed and replaced by elements that do not have a native smell and lose their previous functions. The obvious example of such a change is the change in the extent of the impact of the role of urban morphology on creating confidentiality.

Accordingly, the absence of dead-end alleys, which is part of the structure of Islamic cities, has caused today's cities to be unidentified and to remain an element of privacy. The characteristics of the Islamic religion have led to the emergence of a close link between the principle of privacy and introverts in the traditional architecture of Iran in the formation of traditional houses. So that architects specifically consider interior design and privacy layout in house design. Findings of the research show that observance of the principle of privacy and the restriction of access to the home from the fixed principles of Iranian homes and, in particular, Shiraz's houses. In a general conclusion, the results of the research indicate that

in the design and construction of historical buildings of Shiraz in the Qajar era, architects have used two principles of intrigue and confidentiality in the spatial organization of physical elements that the reflection of this can be seen in the design of dead-end in order to provide privacy, security and sharing of physical protection from home.

Dead-end Alley is one of the unique innovations in the old architecture of Shiraz, which has been created to overcome the limitations of the network of communication networks and the creation of an appropriate input space which, while simplicity in form, has a surprising effect on securing privacy in the private realm. By creating dead-end alleys at the points of connection of some of the secondary passages and the main passage, the field of instillation of sense of supervision and ownership has been provided in the sub field. Therefore thus, it can be seen that by deliberately locating dead-end and entrance spaces in the public domain, in addition to protecting privacy and strong neighborly relations, one can also define a specific area for the general public

Figure 1. Historical texture of Shiraz and its dead-end alleys.

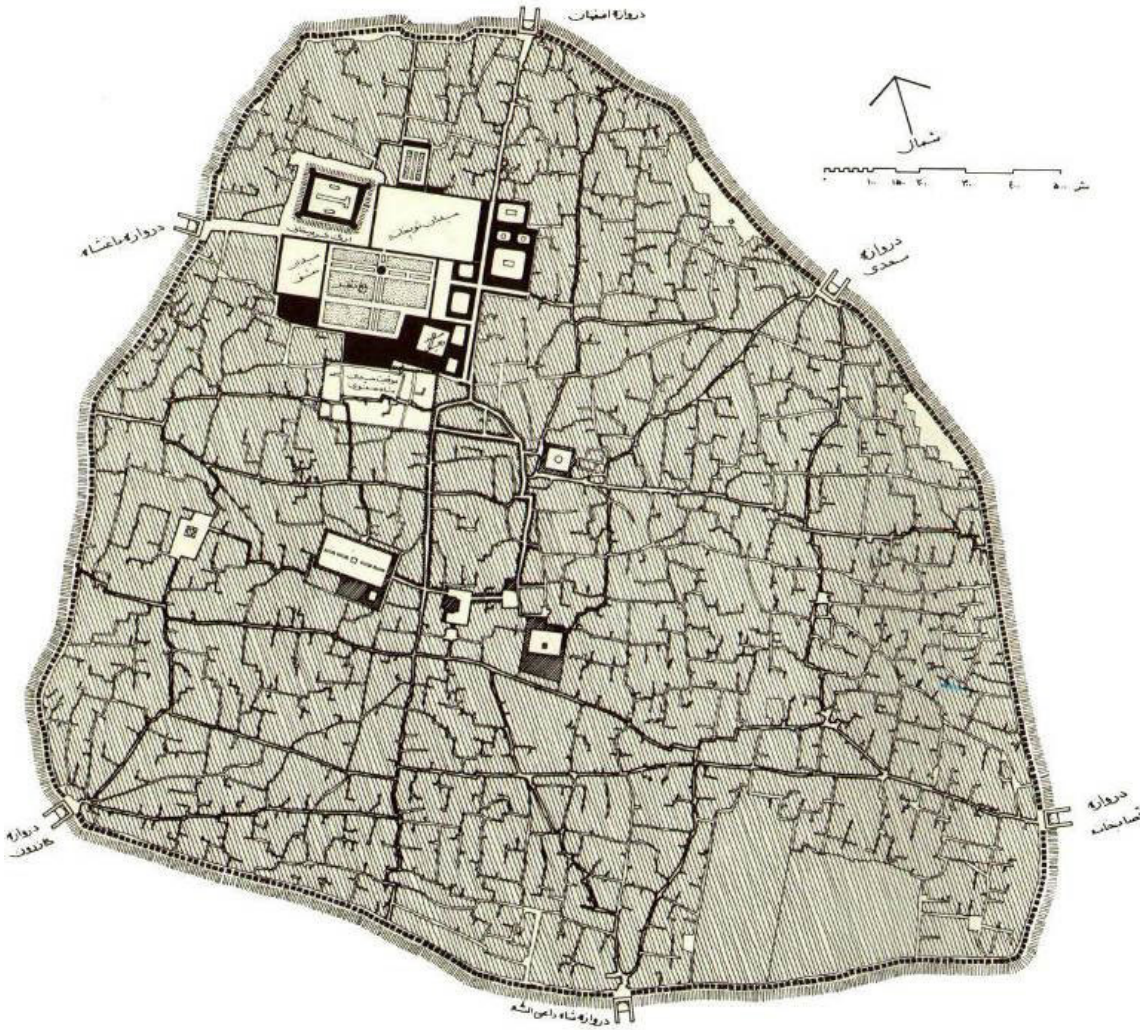

Figure 2. (left) Dead-end in the historicar texture of shiraz- 1955, (right) the part of Shiraz Historical texture - 1955.

Figure 3. Shiraz city and changes in Urban Morphology -2017.

Figure 4. (left) the texture of Shiraz and change in the structure of contemporary city, (right) part of the historical context of Shiraz and examples of dead-end alleys.

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A phase of development and completion in the urban structure of Torino: the Crocetta neighbourhood

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The physical aspect of a city constitutes a fundamental element between the phenomena and the realities that make up its structure. The awareness and knowledge of this aspect, in its historical and typological connotations, in real and virtual connections, certainly passes through historical knowledge and the critical contribution to the reading of the urban context. This concept of "physical aspect" should not be limited, therefore, to an exclusively morphological investigation, but should be extended with all historical, ideological, anthropological, material and cultural connections, which fall within the broad definition of "urban civilization". For the city of Torino, the results of studies and research conducted on the Crocetta neighbourhood, in the context of the Drawing and Survey Laboratory of Professor Marotta, at the Faculty of Architecture of the Politecnico di Torino, represent a sort of "radiography" of a characterizing part of the structure of the city, which is read and interpreted in a precise phase of development. One of the peculiarities of Torino is the morphological congruence, also generated by the clear relationship between building type and urban structure, within an "a block" urban plant, that stands up on a precise configuration of axes and directions. The analysis - through the survey and the representation (and not only) - of building types within the neighbourhood, manages to give back the image of the city also in the "taste" and in the "ways" of time (from an architectural and urban viewpoint of eclectic, and episodically liberty, cultural matrix). If we think of the historical city as a written and rewritten text, as a palimpsest, or a layered object over time, its drawing and its formal organization allow us to grasp signs and information that have determined its evolution and changes. The analysis of these processes, with particular attention to the culture of vision, contributes to enrich and deepen the understanding of the present, through a continuous comparison between reconstructions of the past and various imaginaries of possible future arrangements.

Introduction

The concept of urban complexity contains in itself various aspects related to many settings, sometimes infinitely distant from each other, but all focused on the need to contribute to the description of the evolution and transformations that the city has undergone over time.

In this sense the historical city is read as a constructed text, written and rewritten, like a palimpsest or a stratified object; its drawing and its formal organization allow us to pick signs and information that have determined its evolution and changes. Analyzing these processes, considering the aspects related to the culture of vision, contributes to enrich and deepen the understanding of the present, through a comparison between the traces of the past and the dense network of the full and empty spaces of the contemporary city.

The reading and the morphological analysis of the urban structure, here focuses on the Turin neighbourhood "Crocetta", which for years has been the subject of studies and research in the context of an Architectural Survey course at the Polytechnic of Turin[1].

Born as a rural area outside the city's historic walls, the Crocetta neighbourhood reaches its complete edification only in the second half of the twentieth century, following the economic-building boom of the 50s and 60s.

The comparison between the centre of Turin, defined as "refined" for its regular and planned plant since its origins, with the first periphery immediately nearby (with its "alternative" morphological characters), reveals suggestions and dynamics arising from the presence of centralities widespread that converge in the definition of a single plant, obtained for subsequent expansions (Davico *et al.*, 2014).

Methodology applied to knowledge and survey

In the process of knowledge of an urban setting, aimed at investigating morphology and formal identity, the survey of the existing appears with its own characteristics, with its own specificity of method and role. Making explicit reference to the urban survey, the definition given by Dino Coppo is strongly explanatory: "*At the urban survey competes delicate role to identify, highlight, recognize, relate, describe, and finally represent, all the values present in the investigated realities, in order to build the set of formal and structural invariants present in the construction of a evolving image* (Coppo, Davico, 2001).

This presupposes, first of all, the knowledge of the material forms of the city, through the systematic inventory of the sources (floor plans, land registers, bibliographic sources, ...), which also visually represent the growth and organization of urban development of a city.

The theme of urban transformations is very stimulating also from an didactic point of view: it is fundamental, in fact, to make students understand, especially on the occasion of their first survey approach, that architecture is never an object in itself, an entity distinct and disconnected from the context, but on the contrary the relationship with its surroundings elevates it to a "historicized microcosm".

The methodology of the "Logical Project of Survey"[2] (Marotta, 2010, 2014) is the one proposed inside of our Laboratory of Survey. It consists of a procedural protocol for the control of operations in the acquisition of data during the survey. It is conceived as a mental model for a knowledge that should never be neutral, but culturally oriented by different disciplinary approaches. From the communication point of view, the system is organized as a matrix composed of 5 macro-areas posed horizontally (knowledge in the Sources, knowledge in the Constructed, knowledge in the Measure, knowledge in the Representation, knowledge in the Laws and Norms) and two macrocolumns (thematic

1 The course to which we refer is the Drawing and Survey Laboratory of Professor Marotta, which is placed in the first year of the Architecture Degree at the Polytechnic of Turin, to which I participate from eight years with the role of tutor.

2 This is a scientific protocol designed by Anna Marotta and developed by the research unit of the Polytechnic of Turin, in the setting of the PRIN 2006.

insights and supporting devices). Each box of the matrix explicates a possible phase to be carry out within a path of knowledge of complex architectural systems that require the management, control and updating of a considerable amount of data. The main objective of this methodology is to compare the outcomes related to the reflections and experiments arising during the phases of acquisition, restitution and communication of data, with particular attention to the scientific contents supporting the Survey, even before the metric ones and graphics.

Case study: the Crocetta neighbourhood in Turin

The Crocetta neighbourhood, which today is part of the Circumscription 1, extends south of the historical centre of Turin, beyond the ancient Napoleonic avenue corresponding to the current Corso Vittorio Emanuele II (fig. 1). The neighbourhood is therefore bounded to the north by Corso Vittorio Emanuele II, to the west by the so-called "Spina Centrale", a north-south road axis that includes Corso Castelfidardo and Corso Mediterraneo, to the east by Corso Turati and Via Sacchi (area of the station Porta Nuova railway) and to the south by Corso Monte Lungo, Corso Lepanto and Corso Bramante, via Tirreno and via Rapallo. The neighborhood also holds the railway Passante of Turin, mostly underground, in the sections connecting the three main stations (Lingotto, Porta Nuova and Porta Susa), the same station of Porta Nuova, the Mauriziano Hospital and the Polytechnic.

The ancient village Crocetta belongs to the type of hamlets outside the circle of fortifications and inside the first town customs barrier (Comoli Mandracci, 1983), interested, in the contemporary period, by some extensions with a mainly residential high-level destination.

The village begins to develop from the seventeenth century around the homonymous church. Between the nineteenth and twentieth century begins to be affected by an important urban development, up to its maximum expansion in the mid-twentieth century, maintaining the reputation of neighbourhood of the middle-upper bourgeoisie. In the same period its fame increases thanks to the decision to build the headquarters of the Polytechnic University in the area of the ancient Piazza D'Armi.

Together with the Crimea neighbourhood, the Crocetta represents a rare exception in the citizen's landscape: over the course of its centuries-old history it has preserved some typical characteristics of the rural village and still appears characterized by a high concentration of stately and prestigious buildings (some designed by important architects from Turin), from a non-intensive urbanization and a conspicuous presence of public and private green spaces. The type of urbanization shows, in fact, a morphology inspired by the types of French *hôtel particulier* (an urban residential typology for aristocrats) and by garden neighbourhood (Davico et al., 2014). The presence of the green is explicitly desired and the formation of the gardens is seen as a drawn component of the city, to be inserted compositionally in the inhabited area (Comoli Mandracci, 1983).

As for typological characters, the neighbourhood is characterized by the presence of palaces, buildings and villas, designed on an urban jersey composed of large blocks interspersed with large streets and tree-lined avenues. Within this dominant structure there still remains a small aggregate of houses of ancient origin, near the church "of Crocetta" (fig. 2a) and in some ways almost hidden by the high walls of the church itself (fig. 2c). The dimensional and typological contrast that derives from the comparison of the two areas is very strong: on the one hand, the extremely regular 20th-century structure for its planned squareness; on the other, a space bordered by buildings of the first settlement, which maintained the environmental characteristics of the suburban village, with simple-built houses, up to four floors above ground; irregular even in their planimetric/volumetric articulation (fig. 2b). Everything is made even more characteristic by the presence of a market area right in the square adjacent to the church, which although accentuating a rural, almost "messy" and jagged, gives the neighbourhood the charm of the small village alive and in full swing. In the remaining area of the neighbourhood the blocks and streets are characterized by buildings with heights ranging from two to six floors, depending on the type: villas with gardens (figg. 2h-2i-2j-2k-2m-2p) or small block of flats

alternate with buildings that sometimes occupy the entire block (figg. 2l-2o), creating a discontinuous context volumetrically, but homogeneous in its typological, stylistic and formal complexity (Davico *et al.*, 2014).

The most common building types are multi-storey houses and single-family houses with gardens. The former consist mainly of a building set parallel to the road, or in a corner position. This last type is very common as it is functional to the road network and it is often used as a connecting element between buildings with different heights (in relation to the maximum allowances allowed by the different road sections toward which the building faces). These buildings have common characteristics and differ only in the size of the rooms, the number of apartments or the level of finishes. The facades are often characterized by relief decorations, movements, faux ashlars and bow windows (which become a link between interior and exterior space and determine the introduction of revolutionary visual spark) (figg. 2d-2e-2f-2g). The link between technological innovation (for example the use of reinforced concrete) and the diffusion of the phenomenon of eclecticism and art nouveau is very close and determines the creation of architectures that go beyond the simple epidermal change of formal language.

The analysis of the neighbourhood structure in the didactic experience

From the didactic experience of the Survey Laboratory come out the real "portraits of cities", obtained through the convergence of metric data and careful reasoning on documents, iconographies, historical matrices and in general on all the support devices, useful for research (figg. 3-4). Starting from the precise surveys on the assigned building, the research continues towards the immediate surroundings, then towards the neighbourhood, up to the analyzes and comparisons with other parts of the city. The reading proposal is therefore based on the observation, analysis and interpretation of the urban and territorial growth methods of the neighbourhood, which however can be traced back to the more general laws of the entire urban scenario. The approach to spatial transformations at the urban and of block level related to the object of study allows, together with the reconstruction of the events that have affected the building itself, to approach the theme of historical iconography and cartography of the city.

Over the years, the results of the students' work are helping to implement a database of information on the area under study, so as to constitute a sort of "scan" of a characterizing part of the city's structure. For example, through the chronological analysis of the nineteenth-century expansion plans and the thematic plants of the city of Turin, we were able to verify the first stages of study and planning of the Crocetta neighbourhood and the transformations that took place over time. Analyzing the texture of the urban fabric and the typological characteristics of the buildings, important differences emerged within the same neighbourhood. The part adjacent to the Porta Nuova station (corresponding to the ancient Borgo San Secondo) is characterized by uniform architecture with the presence of porches, by a building fabric organized in continuous curtain blocks, inside large rectangular homologous lots with a closed courtyard with limited dimensions, with residential and commercial building types that follow a strict urban design. Instead, in the areas where the second and the third Piazza d'Armi had been placed, the lots construction is very different, with a homogeneous building typology that follows a well-structured planning: buildings and single-family villas occupy a small part of each lot, while the remaining area is destined for a private garden. A third woven fabric plot is beyond the ancient limit of urban expansion, coinciding with the current Corso Einaudi, dating back to the second half of the nineteenth century: the lots are larger, more or less accentuated trapezoidal, due to the incidence on the road layout of the ancient Orbassano street which has maintained its original orientation. The lots here appear more permeable than those of San Secondo and the wide courtyards allow further internal construction with low buildings and green areas.

Also the aspects related to the typology, style and the material and ornamental dimension are analyzed, described and compared in a cultured and conscious way within the path of knowledge, carried out according to the procedures of the Logical Project of Survey.

The buildings assigned as case studies represent a sort of anthology of the building types present in the neighbourhood, from those of prestige that overlook the large tree-lined "French" avenues, to the late-eclectic construction with villas and small villas in neo-medieval style, neo-Renaissance and neo-baroque (Leva Pistoi, Piovesana Gallo, 1994). By analyzing all the archival documentation related to the buildings surveyed and studied, with the support of historical maps, expansion plans and building regulations it is easy to realize how much the Liberty architecture, within a wider context of eclectic culture, has assumed a high scenic, monumental value, but above all identifying within the neighbourhood (and in general of the city). The research in the definition of a detail, the articulation of the openings (the bow-windows, for example, signal the road folds and their protrusion enliven the front), the refined pictorial and sculptural decoration, are all elements that arise from the will to amaze visitors, especially those from a poorly characterise hinterland (Comoli Mandracci, 1994).

The Liberty inherit en bloc the nineteenth century city, with its typologies and its urban plans that have helped to fix the image in a lasting way and to orient its subsequent development. The liberty neighbourhoods of Turin, especially the Crocetta, are often characterized by almost chain-like interventions by the same architect; this testifies how this current of taste has assumed particular connotative value and how an urban reality such as that of Turin requires a historical-urban interpretation.

Remaining in terms of decorations, the research and the surveys carried out show how façade decoration is an extremely complex system; this considers a correlation between several elements. First of all there is an organizational structure of the facade itself, which is the product of a careful study by the designer. It cannot be considered a simple frill, but it is in all respects a system generated by a precise geometric construction that extends to several elements, from the painted ornamentation, to the stuccoes, to the wrought iron of the balconies, to include the door of entrance. All this responds to the need to create a unitary work of art, in which each part undergoes a will of a higher order. If we try to subdivide the façade decorations into categories, for example: elements inspired by natural shapes, elements taken from purely geometric modules and elements inspired by the human figure (fig. 2n), especially the female one, we can see how these three systems are always in close relationship with each other. In fact, where the decoration has mainly "naturalistic" features, there is a basic organizational geometric structure. Pure geometric shapes also tend to appear by infiltrating between floral elements. The female figure is then associated with sinuous lines and plant elements, while remaining central element around which the entire ornamental apparatus is organized.

Each decorative element that characterizes a liberty façade is therefore fully inserted within a scheme studied with precision by the designer and is also originated by the influence of several ornamental themes that continually intertwine with each other.

Conclusions

The multi-year experience of this Laboratory leads to a certainly positive feedback in terms of research, knowledge, data processing, representation and above all of didactics effectiveness. The methodology of the "Logical Project of Survey", applied with a view to allowing a critical selection of the phases to be tackled in the path of knowledge, is a consolidated approach, rigorous and therefore very useful for achieving common objectives. This planned and systemized path leads to identify, in the analysis of single buildings or complexes of buildings, all the phases of transformation that have led to the conservation status verified in the actuality. Urban transformations become a stimulus to reflections not only of a technical nature, but also historical, iconographic, cultural, social and economic. It is clear that all these factors are part of the process of building and expanding a city, especially when the skyline is no longer an indispensable element to be followed for urban and building design, and even more so when, with the spread of eclectic culture, the role unifying of the architectural type loses its meaning, giving life to a plurality of forms and languages (Comoli Mandracci, Viglino, 1992).

Moreover, all the dynamics and factors that come within the study and knowledge of

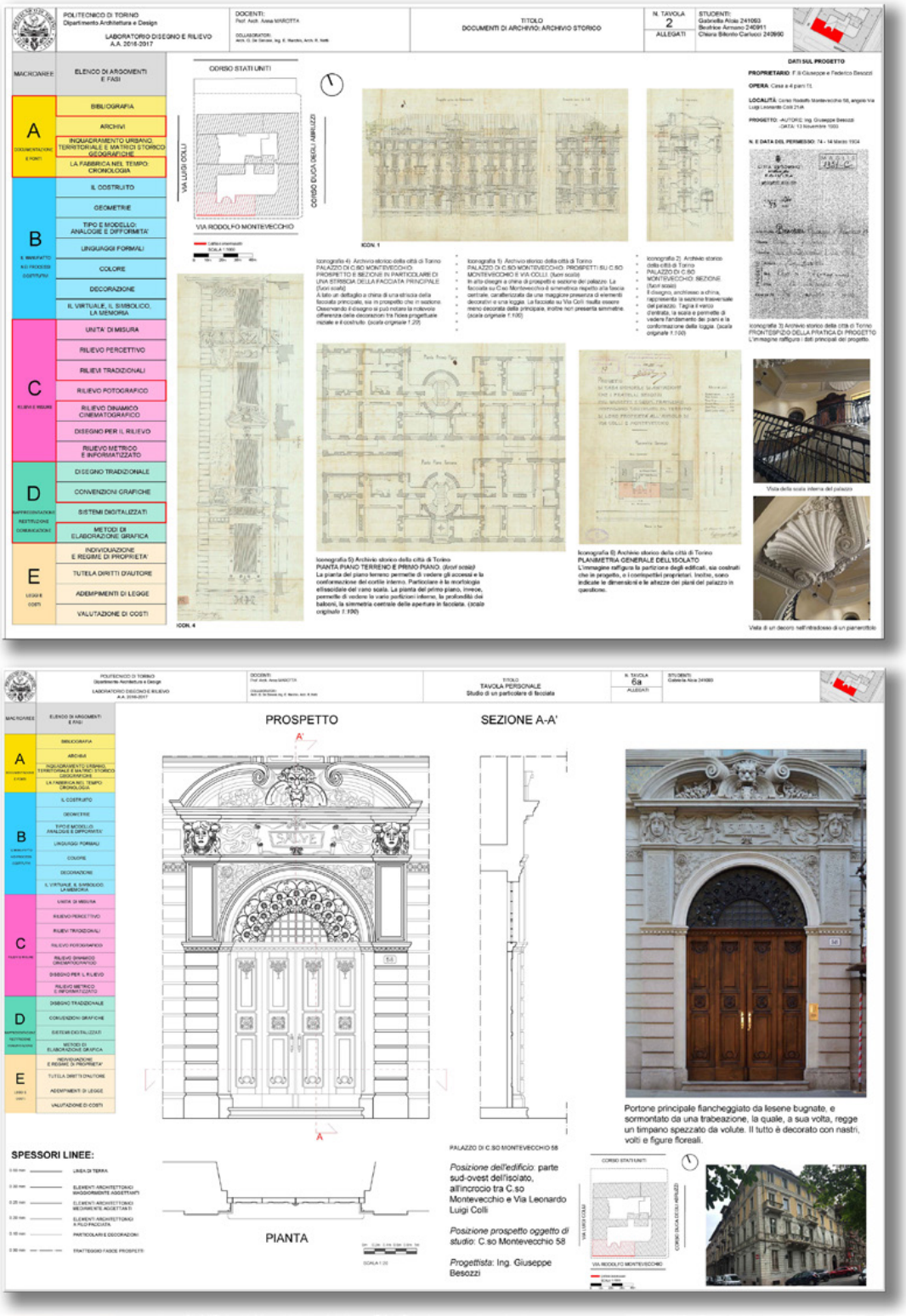
the urban structure, allow further reflection - articulated and complex - to be conducted with the students, related to the quality of drawings and cartography, learning to recognize their historical validity and their communicative power. The diachronic approach to the context moreover allows to weld the urban scale to the architectural one, using survey as a general tool for acquiring information.

Figure 1. City of Turin, Municipal Technical Paper, Tables 15, 16, 21 and 22. In red the perimeter of the Crocetta neighbourhood. Image top left: Giovanni Battista Sappa, *Ville impériale de Turin, in Département du Po, Arrondissement Communal de Turin, Plan géometriquede la Commune de Tutin*, Levé en exécution de l'arrêté du 12 Brumaire an II, Terminé le 12 Nivose an XIII, 1804-05. ASTO, Riunite, Finanze, Catasti, Catasto Francese, Torino, f. 13 (source: Davico et al., 2014).

Figure 2. The Crocetta neighbourhood in its identifying characteristics.

Figure 3. Michele Ambrosio, Carlo Emanuele Barbero, Giorgio Brinch, Vittorio Bottari: Survey of Palazzo Pezzatti. Table of urban framework and detail table: decorations. Drawing and Survey Laboratory of Professor Marotta, A.A. 2016-2017.

Figure 4. Gabriella Aloia, Beatrice Armano, Chiara Bitonto Carlucci: Survey of Palazzo in Corso Montevecchio. Table of archive documents and detail table. Drawing and Survey Laboratory of Professor Marotta, A.A. 2016-2017.



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Railway stations: between past and present in the urban fabric of historic cities. Case studies in Italy and Spain

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Railway buildings are emblematic elements of urban fabric and influence the evolution of the city and are influenced by the context. Built in the nineteenth century as buildings for transport, they represented the introduction of new architectural typology in established contexts and have become, in contemporary times, real urban places, new poles of aggregation and identification of a community, preserving their central role in cities and involving a new type of urban transformations.

The study of the relationship between railway stations and historical cities starts from the need to know the evolution of these buildings, to identify guidelines for contemporary intervention. Starting from the analysis of the railway-context relations in some historical cities, we proceeded to the graphic reconstruction of the buildings and the urban development phases, highlighting the continuity existing between historical routes, ancient urban gates to the city and position and conformation of the railway buildings compared to the urban fabric.

The analysis of these elements made it possible to identify guidelines for planning future interventions, to be adopted in stratified historical contexts, such as that of the city of Matera in Italy, the next European Capital of Culture for 2019. One of the main achievements is the graphic reconstruction of the initial stages of railway buildings, related to the urban plot, the representation of the various stages of development constitutes a testimony of buildings no longer existing and is aimed to the knowledge and dissemination of cultural heritage, as basis for contemporary interventions in stratified historical contexts.

Introduction

Railway buildings are emblematic elements of urban fabric and influence the evolution of the city and are influenced by the context. Built in the nineteenth century as buildings for transport, they represented the introduction of new architectural typology in established contexts and have become, in contemporary times, real urban places, new poles of aggregation and identification of a community, preserving their central role in cities and involving a new type of urban transformations. The study of the relationship between railway stations and historical cities starts from the need to know the evolution of these buildings, to identify guidelines for contemporary intervention. Starting from the analysis of the railway-context relations in some historical cities, we proceeded to the graphic reconstruction of the buildings and the urban development phases, highlighting the continuity existing between historical routes, ancient urban gates to the city and position and conformation of the railway buildings compared to the urban fabric. The analysis of these elements made it possible to identify guidelines for planning future interventions, to be adopted in stratified historical contexts, such as that of the city of Matera in Italy, the next European Capital of Culture for 2019. One of the main achievements is the graphic reconstruction of the initial stages of railway buildings, related to the urban plot, the representation of the various stages of development constitutes a testimony of buildings no longer existing and is aimed to the knowledge and dissemination of cultural heritage, as basis for contemporary interventions in stratified historical contexts.

The historical and architectural value of a city, identified as cultural heritage suggests the idea of a place rich in history and monuments worth to be conserved and preserved, leaving out its value as an inhabited city in constant evolution.

We often face cases of common heritage, protected by strict laws that prevent any kind of intervention, apart from the conservative ones. The importance of the enhancement of the places can not ignore the need to intervene so that they respond to contemporary human needs. The challenge today lies in the coexistence of the needs of contemporary living with the problems of protection, conservation and enhancement of heritage.

The conservative choice can rightly be adopted in the case of cultural assets, but it is difficult to apply for urban centers, "live" for definition, which present a continuing need to regenerate.

In a changing global environment, characterized by changing and appearing of contemporary needs, a key role in urban transformation is played by mobility and railway infrastructure.

Train stations have played a key role in urban areas, constituting a driving force to the new city planning or their transformation. The stations are elements of access to the city, such as the ancient "urban gates", symbols of identity of a places.

Railway stations are symbolic places in which a community can identify itself and at the same time represent landmarks in the urban landscape.

Since the appearance of the railway buildings in the nineteenth-century cities questions have been raised about introducing the railway buildings in the surrounding urban fabric. Upon construction of the railway buildings, consolidated nineteenth-century urban centers have had to deal with the arrival of an infrastructure that spoke a different "language", a new architectural type, with the consequent problems linked to the choice of its location. Similarly, in the contemporary era, new issues have had to be dealt with regarding the railway system, as a result of changes in transport needs (slow and high speed mobility) which involve the transformation of portions of the city.

The coexistence of various elements typical of railway stations, some possible contemporary transformations and the close link between the buildings and the urban fabric are elements that can be found in the city of Madrid, in Spain (Fig.1).

The close link between these architectures and the city is the subject of an in-depth urban analysis, finalized to understand the role of urban routes and gates in relation to the railway stations and to identify the guidelines for contemporary interventions. Some researchers have analyzed the theme of railway buildings in some Spanish cities, including the capital Madrid, but the intent of this study is to highlight the aspects of continuity between the urban

layout and the inclusion of railway buildings, architecture comparable to the ancient urban gates for their role in the city.

These urban phenomena related to cultural heritage and mobility affect the city of Matera, in Basilicata region, registered in the UNESCO list of cultural heritage since 1993 and recently elected European Capital of Culture for 2019. As part of the regeneration and enhancement provided by "Matera 2019" programme, the mobility sector is specifically identified as one of the key elements for the future development of the city.

Figure 1. Railway and extension plan by Castro for Madrid, 1860.

Figure 2. Urban gates, Madrid, 1700.

Methodology

The analysis by different scales, from the territorial to the urban, up to the architectural analysis was carried out starting from the bibliographic and archival research carried out in the city of Madrid. The collection and comparison among various historical maps of the railway network belonging to different periods, the study of the urban maps of some Spanish cities and in particular Madrid, has allowed to reconstruct the historical evolution of an urban organism, with particular attention to the railway network. The adopted criterion for the analysis is the selection of the railway buildings that insist in historical cities with cultural heritage value. The analysis, carried out with the aid of the graphic representation, is aimed to highlight the relationship of mutual influence between the railway buildings and the urban context. The close link between the pre-existing territorial and urban paths and the grafting of the stations in strategic places within the urban fabric was highlighted. This connection was even more evident from the common features of the places where the ancient city

gates were built; in many cases the same sites where the railway buildings stand, may be defined as "modern urban gates". Through a graphic survey it was possible to reconstruct the transformation process that has affected some of these architectures, important for those no more existing, as disappeared throughout history. This represents a fundamental contribution in the reconstruction of a heritage, otherwise lost, and allows its knowledge and dissemination.

The main bibliographical references are the works of Pedro Navascués Palacio, which analyzes nineteenth-century Spanish architecture, focusing on railway buildings. One of the author's goals is to analyze architecture in the urban context. In the historical excursus from the nineteenth century, it also deals with the theme of the urban gates of Madrid and the ensanche of the city of the mid-nineteenth century, and dedicates a specific chapter to the architecture of iron, focusing on three railway stations in Madrid: *Atocha, Delicias and Norte*.

The contribution of Inmaculada Aguilar Civera, who analyzes the architecture of railway buildings, is also fundamental, placing them in relation with the urban context in which they stand. Furthermore, she explores the aspects of the relationship between the stations and the city and architectural typology of these buildings, analyzing the different planimetric solutions adopted in Spain. In detail it also deals with some Madrid stations (*Atocha, Delicias, Norte* and *Chamartín*).

The goal is the study of the project actions which involve the railway station in its historical evolution, with the aim of identifying guidelines in historical established contexts. The historic reconstruction of urban areas through the relief and project design allows the knowledge and appreciation of the places by means of the representation of existing architecture and new proposals.

Historical drawings, projects presented in contests, graphic reliefs covering different periods and drawings for future proposals were analyzed. One may get critical knowledge of any work when he knows the ways and techniques to describe and represent it.

The graphic description provides the strategies for critical knowledge of physical reality, especially in the case of complex and layered realities. The graphic representation is also a fundamental tool for the analysis aimed to recognise the rules of the complexity of building and to detect formal project proposals and process solutions that interpret the urban history, the architectural work, the building types and forms of architecture as identity of a place.

Tha attention on Piazza della Visitazione in Matera is aimed to identify guidelines to intervene. This place has a major urban and architectural role in the fabric of the city. The method adopted for the analysis of its characteristics begins with the bibliographic research, based on publications that have dealt with this unresolved urban node since the early history. The acquired information was enriched by written and graphic documentation pertaining to the town archives which include elaboration of urban plans focusing on the station area.

By means of Drawing, in this case the project, one can understand the relationships between parts of the city, highlighting the public space. The urban spaces are an opportunity to rethink the shape and the meaning of the contemporary city. These spaces within the consolidated urban fabric are often set free by spin-off processes. Those areas can be a resource for the renewal of the urban form.

The multidisciplinary approach by means of architecture and urban planning is the basis of the identification of good practices of intervention in a stratified historical context; however, it requires contemporary interventions. The historical reconstruction of urban processes related to the field of infrastructure, understood in architectural perspective, highlights the elements of continuity and break in the history of transformation of places.

Forming process

The main result of this research is the knowledge of the architectural and urban heritage, in its historical development, relevant in the case in which the heritage is no longer existing. It is a matter of analyzing urban locations which represent a feature, either persistent or modified.

The knowledge of the heritage of a city allows us to understand the reasons for the current appearance of the places and their role in urban areas. At the same time, highlighting the

relationship of continuity between the main urban elements in the history, such as urban routes and gates, allows us to understand the reasons for a certain urban development and to adopt design choices coherent with the specific urban principles of a place. When we consider a heritage-city, it is necessary to know the places and their development in history in order to design contemporary interventions, respectful of the existing. Furthermore, the dissemination of knowledge of the heritage and its use is made possible by graphic reconstructions, at various levels of detail. The city of Madrid offers different types of transformations operated on railway buildings, as the four main stations, still existing today, but have a different role in the contemporary era.

The *Delicias* railway station has been transformed into a railway museum, maintaining a use related to its former transport function. The *Norte* station, on the other hand, has been transformed into a shopping center, with a use superimposed on the character of the building itself. The *Atocha* station has retained its function, but has been expanded and adapted to the needs of high-speed transport. The train station in *Chamartín* has undergone an intervention in the contemporary era of burying the tracks and consequent new use of the area freed up.

The aim of this research is also the regeneration of the spaces for reception, places of arrival in the city. Since their appearance in urban areas, railway stations have represented the access, comparable to the ancient "city gates" of the cities and we investigate their role in the formation and configuration of public space. These places have a natural vocation as square, civic center, modern city gate and, in the case of Matera, they are located near the historic city.

In particular, the Matera central station is located in a focal point between the historic center and the subsequent expansion neighborhoods, a free area where representative buildings, such as the city hall and the court, stand. From there main streets leading to the ancient Rione Sassi branch out and it is important that those who reach the city by train, leaving the underground station, are naturally led to their destination through the shape of space and architecture.

The enhancement of the places is based on the knowledge of their historic phases in order to outline future views. The purpose to preserve the identity does not exclude that this is the subject of contemporary design, always starting from the knowledge of the places and their history. In Matera the issue of enhancement is major as the architectural interventions in such scenic locations must be based on a thorough knowledge of the places themselves; without such knowledge no intervention would be devoted to enhancement.

Piazza della Visitazione, the square of railway station in Matera, is a focal point in the development of the city's urban fabric, representing the central element between the main arterial roads.

One of the contemporary needs in Matera, as in other cultural heritage cities, is to introduce new slow mobility, a light transport system (people mover), to connect the main parts of the city.

The idea of a light transport matches with the characteristics of the railway which reaches Matera, an underground line in the urban section, close to the historic city.

Great contribution to research was given by design competitions published for the area of the station of Matera, the first one in 1993 for the creation of a civic center and the second one in 2008 announced for architectural regeneration of the square.

The history of this place, however, dates from the early twentieth century with the arrival of the railway in 1912-1915 and the subsequent construction of the gallery between Matera and Miglionico in 1922.

After some regulatory plans, the season of competitions opens with the first, national, banned in 1993 for the design of a civic center consisting of square, town hall, court and theater.

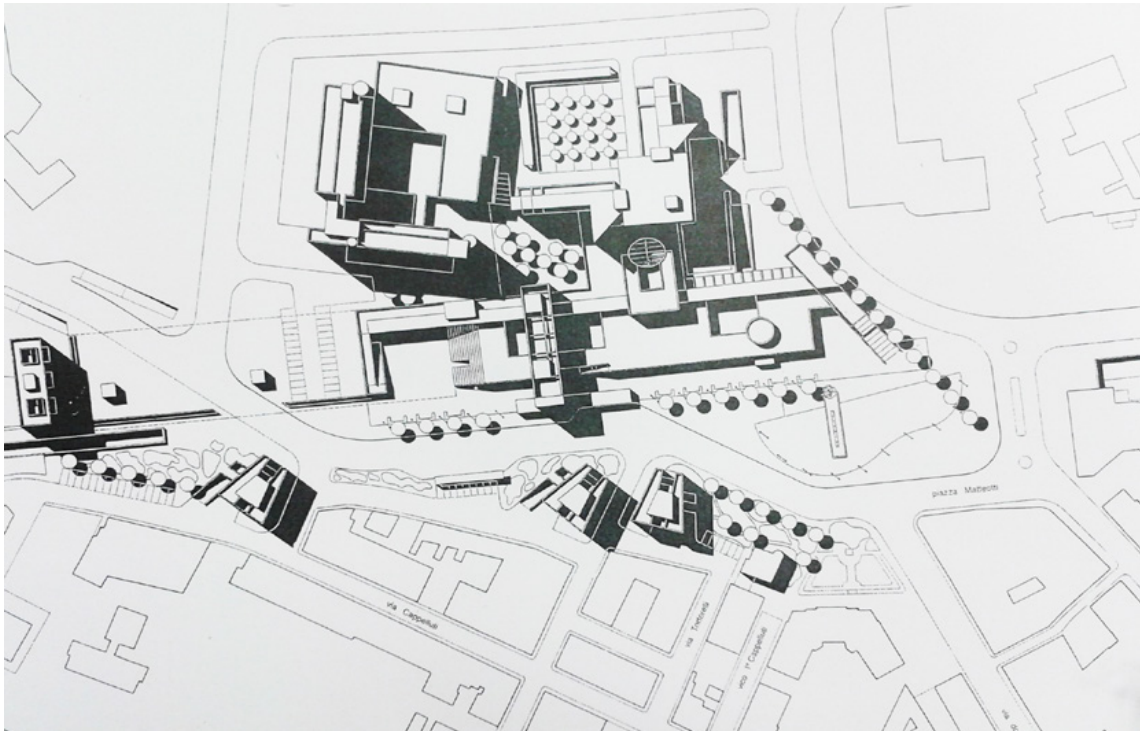
The civic center was already expected by the Plan Piccinato ('56) and the town hall and the court were already made, excluding the Council room. Emphasis was placed on the recognition of the place and the winner group, Panella- Aymonino and Corazza, designes an architecture heir to the "classical" rationality, characterized by the succession of public spaces and squares, at different levels. That ban requested a project solution for the square

originated by the removal of tracks, with attention to the characteristics of the place, worth to become the new civic center, set between the historical core and expansion areas, intended to re-create the relationship between the parties. In 2000 the project was included in the Detailed Plan by Panella and Acito.

A second competition by invitation was banned in 2008 for the same area with the intent to create a new urban center and to provide the city with a new architectural symbol site. The main aspect was to project a new civic center, preserving the existing layout of the urban underground railway. One of the goals was to create a connection between the various entrances to the city (called "thematic gates") and reconcile the urban redevelopment with the creation of a Council room, a theater and a park. This requirement was determined by the position of the area between the historic center and the new directional pole. The project by the architect Llavador won, it involved the construction of a theater nestled in a park and included new functions for the twentieth-century station. Neither this project, as the one developed for the previous contest, was not realised, but both highlighted the peculiar character of this space.

Figure 3. View of Piazza della Visitazione, Matera, Italy.

Figure 4. Plan of the winning project by Panella-Aymonino and Corazza (1993).



Conclusion

The reconstruction, by the graphic representation, of the railway buildings in the various stages of development and the representation of those no longer existing is an important asset to be used not only for cognitive purposes, but also as a starting point to plan new interventions. The railway buildings are emblematic places of the transition between tradition and innovation, bridging the nineteenth century and the contemporary era, in most cases persisting to transformations and adapting to new needs. They are places of transition between tradition and innovation. They perform both a role linked to their infrastructural function and are part of the architectural, urban and cultural heritage of a society, which identifies them as symbols of a place. For these reasons, they are not only architectures to be preserved, but to be known and enjoyed. Through the critical analysis and the historical reconstruction, we can design future transformations, based on a critical reasoning, operated starting from the knowledge of the history of the places. The guidelines identified starting from this type of analysis can be adopted to operate in other similar contexts from the point of view of the historical-cultural value of the places, as in the case of the city of Matera, a UNESCO heritage site.

The above outline parallel between the appearance of the railway stations in the nineteenth-century city and the contemporary issues that arise as a result of their transformation as effect of the changing transportation needs is rooted in the strong changes induced into the urban structure. In historical times, the advent of the railway transport led to the birth of a new architecture "type", that of the railway station, which served as a stimulus to establish new parts of the city. The expansions were originated by the choice of location for new station buildings, outside limits of the nineteenth century city, but close to this, identifying the privileged axes for development and often leading to build new portions of the city.

Similarly, today we are witnessing a proliferation of urban renewal and infrastructure interventions in many European cities, characterized by places of crisis or decline, where local governments have decided to act on symbolic buildings in order to save them from neglect and employ them in new features. Such urban regeneration operations are carried across Europe mainly on historic railway buildings. On the one hand, the aim was to give new life to monumental buildings; on the other it is meant to start processes of regeneration of the surrounding urban spaces.

The first result of this research, applied to the square of train station of Matera, is to understand the importance of the place where the infrastructure insists for its role as a modern city gate. The place of departure and arrival in the city in historical times, characterized by flows of goods and people, today has become a hub that covers the square functions and is a meeting place and shopping center. The transport function has a minor role and sites become modern centers of aggregation. The characteristics of these intervention areas are generally well described in the texts of design contests, as organized since their first realisation in the late nineteenth and early twentieth century. They highlighted the architectural and urban issues, as well as those closely related to mobility, and these principles for the composition of the space of the city should be intended cornerstones for modern interventions, because they preserve the identity of places (genius loci). The features highlighted in the requests of the competitions dealing with the Piazza della Visitazione in Matera are to be considered for future actions, always with attention to the urban conception of space that can not be confused with the result of the Traffic Plan (2017). It appears that the study of competitions in different historical periods for the city of Matera present recurring characters, such as creating a new civic center, a need deeply felt within the urban structure.

The arrangements provided from time to time in response to the needs are not the essential aspects, whilst such role is covered by the common elements over time, identified as major characteristics of the space, that contribute to the identity of the place. The understanding of these is allowed by the representation of reality and of the reported transformation proposals. These helped to reconstruct the history of a place in the city, both in terms of the timing of events, but especially by representing the architectural evolution of space, or its negation.

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Boundary: a key urban fabric element to ensure urbanity

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At urban scale, boundary is generally synonym of rupture which is mostly perceived as negative character. However it is described through its positif sides in this paper. Throughout the reading of urban fabric of Oran city by the Caniggia's methode (Caniggia and Maffei, 2000) an interest is given to the boundary element. It is considered at different scales from lot scale to parcel system scale, and from a street level to street network level and to urban fabric scale. The study shows how boundaries reinforces urban spaces hierarchy and preserves social and functional mix in the study case. In addition some concepts like urbanity, diversity, polycentric city, used by other authors are incorporated in this discussion (Jacobs, 1961; Montgomery, 1998; Weck and Hanhörster, 2015; Sz. Fabula et al., 2017) to demonstrat that these desirable aspects are the result of an urban structure and urban orgnism state.

The findings are as follows : 1) boundary is an element that maintains district inhabitants, production activities and varities of tertiary activities; 2) At the level of the city, boundaries leads to the creation of new urban polarities that confere a polycentric character to the city. In conclusion boundary proves to be a key element for the urbanity in a city and it rises some questions about its planning in new urban fabrics.

Introduction

Urbanity is admitted nowadays to be a result of diversity, social mix, and mixed land use, density, etc. It figures among the multiple urban design challenges (Corburn, 2004; Godschalk, 2004; Madanipour, 2006). A retrospect of the past century highlights that with the widespread of "Modern Movement" city has known radical changes in its conception. Meanwhile, Muratori in Italy has undertaken an original approach that considers the city as a complex organism resulting from formation and transformation laws. His approach of the city and the territory has been mainly continued and developed by Caniggia (Giancarlo Cataldi et al., 2002; Giancarlo Cataldi, 2003). Other authors from other horizons or theoretical background and others countries have converged in the critique of "Modern movement" theories and practices (Kevin Lynch, 1960; Jacobs, 1961; Robert Venturi, 1966; Boudon and Lefebvre, 1969). They have produced a variety of concepts about what and how a city should be. For instance, Jacobs (1961) has insisted on the importance of the street as a space for diversity and social interactions. However, according to Malfroy (1986), Caniggia can be distinguished by its comprehensive work on a scientific basis where systematic observation and verification enhance knowledge of urban organism.

This paper begins with a first section providing a brief presentation of theoretical models developed by Caniggia (2000) used to read an urban tissue (named herein Benaouda tissue) in Oran city. The second section gives an overview of the historical evolution of Oran city. It contains also a presentation of "Benaouda tissue", the application of the theoretical models and the obtained results. The third section is dedicated to a discussion about the revealed urban structure using Caniggia's models. The impact of the boundary element is shown as reinforcement of hierarchy and functions localization. The discussion is extended to include concepts of diversity, social mix and mixed land use that constitute in fact the urbanity ingredients

This preliminary research focuses on the boundary (limit) which is an element of the urban fabric that makes a separation between two urban entities. In most cases of urban interventions, the boundary is seen as a rupture element and it is intended to be transformed into urban continuity. Herein, it is seen as a key element to establish balance in the urban organism and to maintain a diversity and mix of uses that enhance urbanity. Thus it is presented as a necessary element to regulate urban continuity/urban discontinuity in view to ensure a balanced urban organism. Even though the focus herein is boundary (limit), it is not considered as the only necessary element because urban tissue as a complex organism is a whole where each element has a place and a role.

Reading method of "Benouada urban fabric"

This study follows Caniggia's approach that he has developed from the study of Italian cities. He has elaborated schemes presenting theoretical models of urban organism processes (Caniggia and Maffei, 1979). His well-known book "Compesizione architettonica e tipologia edilizia", co-authored with Maffei was introduced to the francophone audience by Pierre La Rochelle translation (2000) is a presentation of the theoretical foundations, concepts and methods of a scientific discipline whose purpose is to study the processes of formation and transformation of built spaces. Specifically, in Algeria, Yassine Ouaguenni has contributed to the spread of this method by his teaching activity in Architecture school of Algiers (EPAU).

The selection of Benaouda urban tissue as a study case is motivated by two reasons. The first one is its educational character. It shows a relatively an obvious urban structure that permits an easy application of Caniggia models by architect students. The second one is its particular urban configuration between two limits that confers it an illustrative character of the impact of the urban boundary (limit) as an element of urban organism.

Caniggia (1979) has elaborated some models to explain the logical process leading to the formation of an urban organism. The route is the anthropic structural element which generates the subsequent urban organism constituents. A preexistent route plays the role of "matrix route" and it is lined in each side by a "pertinent strip" subdivided in parcels. This first urban structure has as limits the boundaries of the "pertinent strip". Once parcels are built

the street is constituted and it represents the "elementary settlement nucleus" (Figure 1, A). The evolution from this phase to a "basic urban organism" stage is realized by the formation of "planned building routes" and "connecting routes" (Figure 1, B and C) which obey to the same process of formation of the first street (pertinent strip, boundary, parcels). One can note that basic urban organism is an assemblage of multiple "elementary settlement nucleus" and their combination is assured by the boundaries. Even though the resulting urban organism is not a simple assemblage but it is a set of complex relations between the elements that produce polarities, centralities, peripheries, and limits (boundaries) (Figure 1, B and C).

An overview of the evolution of Oran city

The built environment of the current city of Oran belongs mainly to two periods: the French colonial era from 1830 to 1962 and the current post-colonial era. From 1831, a reconfiguration began of the inherited pre-colonial city and large urban extensions were realized in the second half of the XIXth century. It can easily be supposed that this period was characterized by the influences of the vast transformations of Paris by Haussmann. The second period, which began with the liberation of the country from the French occupation in 1962, was characterized by the influences of the "modern movement" and the application of the CIAM charter. Major urban extensions have been realized in the 80 and 90 decades. Another urban boom is noted at the beginning of XXIth century.

The major parts of urban tissues inherited from the French era are characterized by the traditional urban structure. The shift towards "Modern Movement" principles has begun in the fifties of the last century but a large-scale implementation of urban extension has occurred at the end of 70 decades with the planning of six ZHUN (New urban housing zone). The planned ZHUNs are conceived in the continuity of the principles of "modern movement" although it was clearly declared an inadequate urban policy in precursor countries. Another form of urban extension that has characterized the new built environment is "*lotissement*" which means a land subdivision dedicated to houses (housing subdivision). The urban result of these urban extensions is widely criticized and considered that it has caused absence of urbanity and the necessity of an urban project is highlighted. In this context, the inherited urban tissues from the period before 1950 have gained a reference value on urbanity in contrast to relatively recent urban zones. Therefore it is important to focus on the study of these urban entities to understand their urban structure that ensures their positive aspects.

"Benaouda urban tissue", a didactic character

"Benaouda tissue" is an example of inherited urban fabric prior to the "modern movement" era. This name is attributed in this study to designate the urban fabric linked to the boulevard "Commandant Adda Benaouda". It belongs to the district of "Sidi El-Bachir" which contains two important facilities: central train station of Oran and the University Hospital Center (UHC). The studied "Benaouda tissue" is confined between these two facilities that occupy large zones of 13ha for the Central train station domain in the east-northern side and 10 ha for the Hospital in the west-southern side (Figure 2). Its urban structure is characterized by a main street " Commandant Adda Benaouda" that goes from the city center of Oran in the direction of Algiers the Capital via the city of Mascara. This urban context confers to the tissue an elongated urban form oriented West-North to East-South. Even though this neighborhood is not the main central part of the downtown of Oran it is characterized by a wide diversity in terms of functions, sizes, heights, ages, and types of buildings.

This urban tissue is a good didactic study case where the urban structure is evident and the Caniggia's models can be easily implemented. The "matrix street" is the longitudinal street "Benaouda" coming from the city center towards outside (Figure 3). The walls of the train station and the hospital are the boundaries of this tissue. Due to the boundaries, the development of the tissue is limited and one can see clearly different stages of an urban fabric due to the narrowing of the land area of the tissue from the West-North to the South-east. The West-North part shows a complete urban organism while going to the south-east

direction the narrowing of the available area leads to a gradual disappearance of the components of the urban organism (Figure 3). One can notice the disappearance of the urban block at the limit of the train station. Only a pertinent strip remains on the front of the matrix street.

In the urban area of study case, three urban entities can be distinguished (Figure 2): the train station entity, the "Benaouda tissue", and the hospital entity. Their disposition is described by the below schema. The access is noted as a pole for each entity. The central train station of Oran is a terminal station and it is the arrival point of passenger trains and freight trains. It occupies 10 ha of land. It is thus a large urban entity.

The disposition of the access of the train station and the hospital confers an orientation to an urban node and urban axis. The limit of the train station a wall of 520m and the hospital wall of 480m; are almost parallels to the Adda Benaouda street. Both walls define an available strip for the "Benaouda tissue" with a variable width from200 to 50m. One can observe the variation in tissue consistency in relation to the width of the available strip. While all elements of a basic urban organism are present in the western side we can note with the progressive strip narrowing the disappearance of constructions on connecting street followed by the connecting streets. We also note the progressive shortening of building planning street and their disappearance while dimensions of blocks increase from the pole to the anti-pole. At the eastern side that corresponds to the anti-pole, we can see only the pertinent strip related to Adda Benaouda matrix street.

The existence of these limits reinforces the dominance of the main street Adda Benaouda as a central axis. The streets hierarchy is therefore evident. We pass from the central axis to the peripheral axes with a differentiation in function types and size. Along the central street, the urban activities, mainly commercial and services activities are concentrated in the ground floor and that results in a high linear centrality. In This street, the housing occupies the upper floors of the buildings while we can find in peripheral streets one or two stories houses. The longitudinal peripheral axis besides the hospital shows a high contrast with longitudinal central axis in regard to the building types, functions. Figure 4 shows this differentiation between the longitudinal center axis and the longitudinal peripheral axis in terms of building heights.

In terms of functional diversity, in addition to commerce and service activities, we note the presence of the faculty of medicine in relation with the University Hospital Center, a middle school, a public employment agency, a hydraulic office, a hotel, a mosque, etc.

Mix use, social mix, and urban diversity

In the XXIth century, the situation of small and walkable towns tends to be an exception. On the other hand, urban sprawl resulted from economic and demographic growth is making cities more complex. In addition, urban sprawl causes many issues like social segregation; energy consumption; environmental issues, etc. And Last but not least the wide urbanized zones are facing a lack of urbanity due to mono-functional urban planning.

The search to conceive balanced urban fabric leads to the observation of existent urban tissues to learn about each component and their spatial organization and structuring. The boundaries for urban fabric can be different kinds of elements. For example, forest, lake, train railway, agriculture zones, industrial facilities, etc. can play the role of urban fabric boundaries. The interest of boundaries is that they can be the cause for the development of polycentric agglomeration and prevent the preeminence of a single center. This makes centrality tends to be uniformly distributed on the urbanized territory.

As described above, between the fences of the hospital and the central train station, "Benaouda tissue" represents a sample of the ordinary city where multiple activities coexist in a same urban space, from the mechanic garage to the restaurant, from the primary school to the university. Also, different social categories are using the same space as residents, students, workers, employees, passengers, tourists, etc. That is what Jane Jacobs (1961) had defended and she wanted to preserve: a diverse city where social mix and interactions produce a wealth of public life (Michael Mehaffy, 2011). Many authors (Kevin Lynch, 1960; Robert Venturi, 1966; Boudon and Lefebvre, 1969) have pointed in their time out the deficiencies of the "modern movement" approach of the city.

Although some positive aspects of urban boundaries have been revealed in this case study one should keep in mind that in some cases, they can have negative impacts when they produce too closed neighborhood. A "ghetto" situation is an extreme case in regard to its social and economic impacts.

Conclusion

Urbanity as a challenge and as an issue at the scale of a large urban agglomeration will be a recurrent subject in the future. To raise the question about how to ensure urbanity in the different parts of a city is to pose the question of the conception of the city as a whole where the multiple functions and elements of the urban organism are arranged in such a way to ensure unity, coherence and the functionality of the totality. In this regard, the scientific approach developed by Muratori-Caniggia offers the possibility of understanding the existing urban environments that are reputed to have a rich urban life. Furthermore, the theoretical models developed by Caniggia offers the possibility to understand the existent urban organism and therefore to be aware of what is necessary to conceive coherent new urban developments.

This preliminary study has established the relation between urban structure and urbanity. In addition, throughout the case study of "Benaouda Tissue", it has been noted the positive impacts of urban limits. In this sense, boundaries seem to be a key component of an urban organism that needs to be handled carefully to ensure urbanity.

Figure 1. A: elementary settlement nucleus. B: a block formed through the progressive building from a matrix route, planned building routes and connecting routes. C: a Basic urban organism (Caniggia and Maffei, 1979).

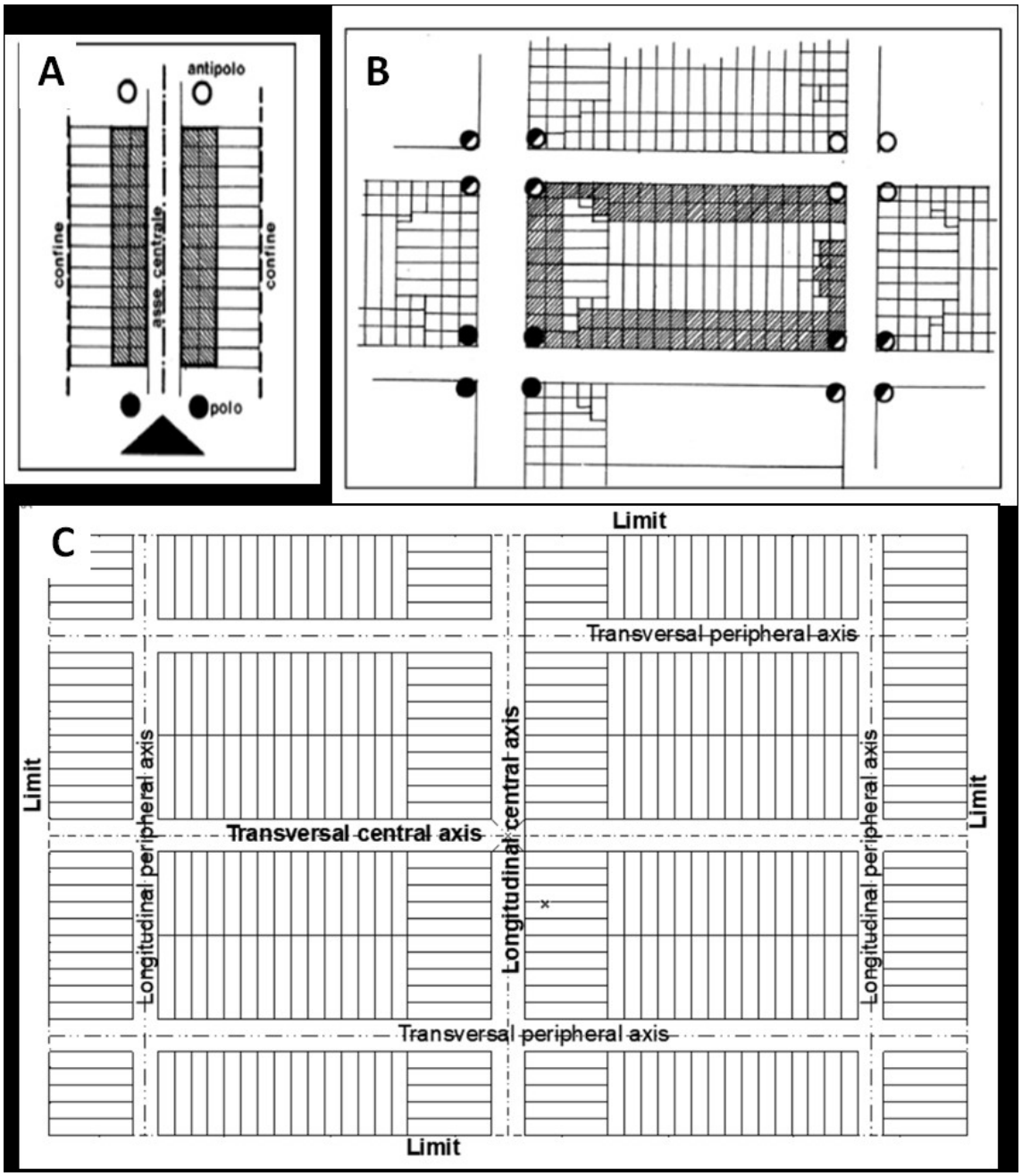

Figure 2. urban context of Benaouda tissue.

The expansion of Oran city starts from Murdjadjo mountain to the east and south following a radio-centric structure. Five ring roads belts the urban zones. Currently, the agglomeration of Oran evolves between the fourth and fifth ring road. Our study site is located near the first ring road to the south.

Benaouda tissue (related to the boulevard Adda Benaouda) is shown in green belongs to the intra-mural city of Oran which is currently is the center of Oran agglomeration.

The tissue is confined by the boundaries of two large facilities (shown in brown) : Central train station on the North-Est and the UHC hospital from the South-West. The boulevard is also an entrance to the urban center from the first ring road.

Figure 3. Urban structure. A) Street typology: matrix street, planned building streets, connecting streets, limits. B) Hierarchy of streets and polarities.

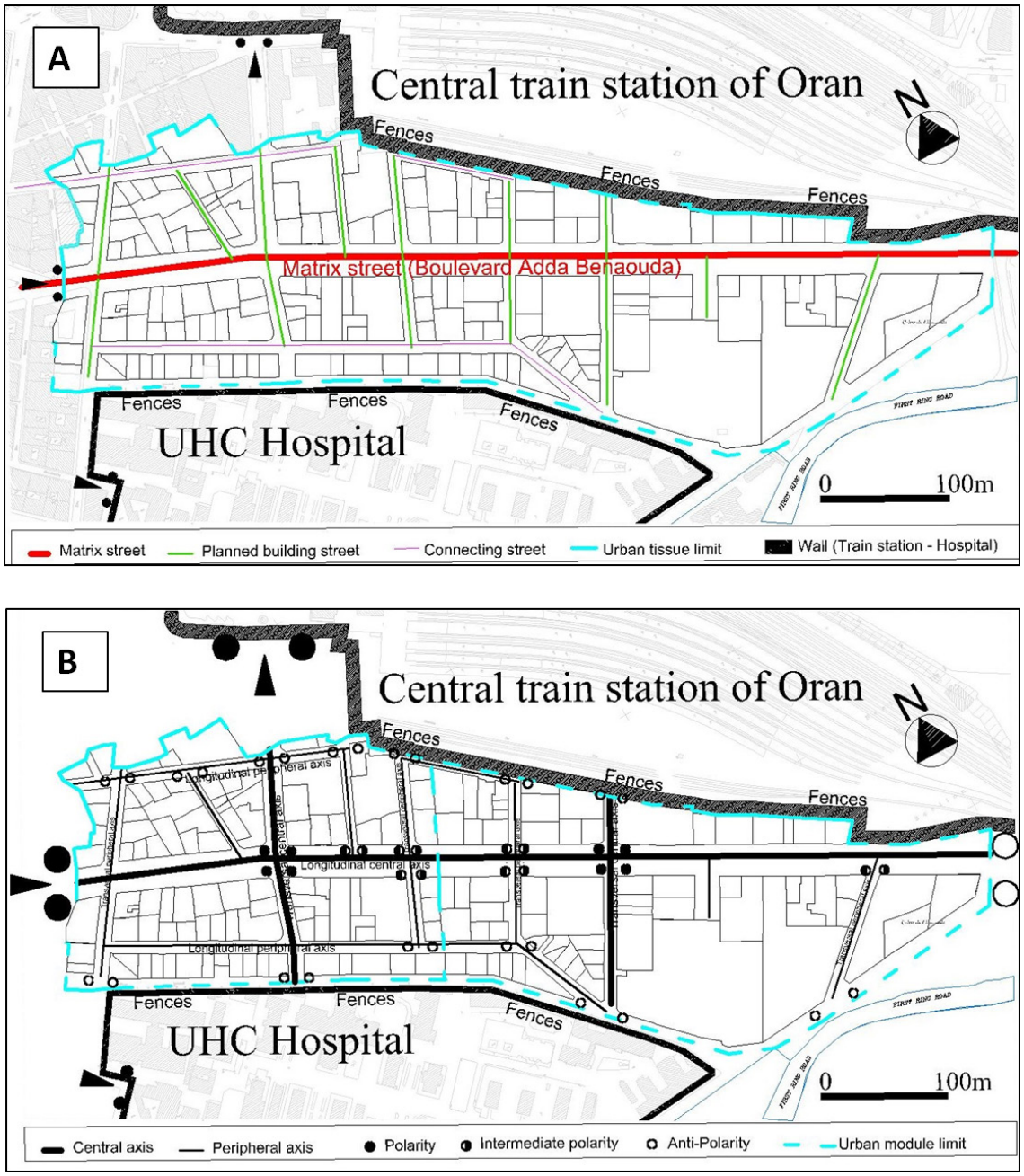

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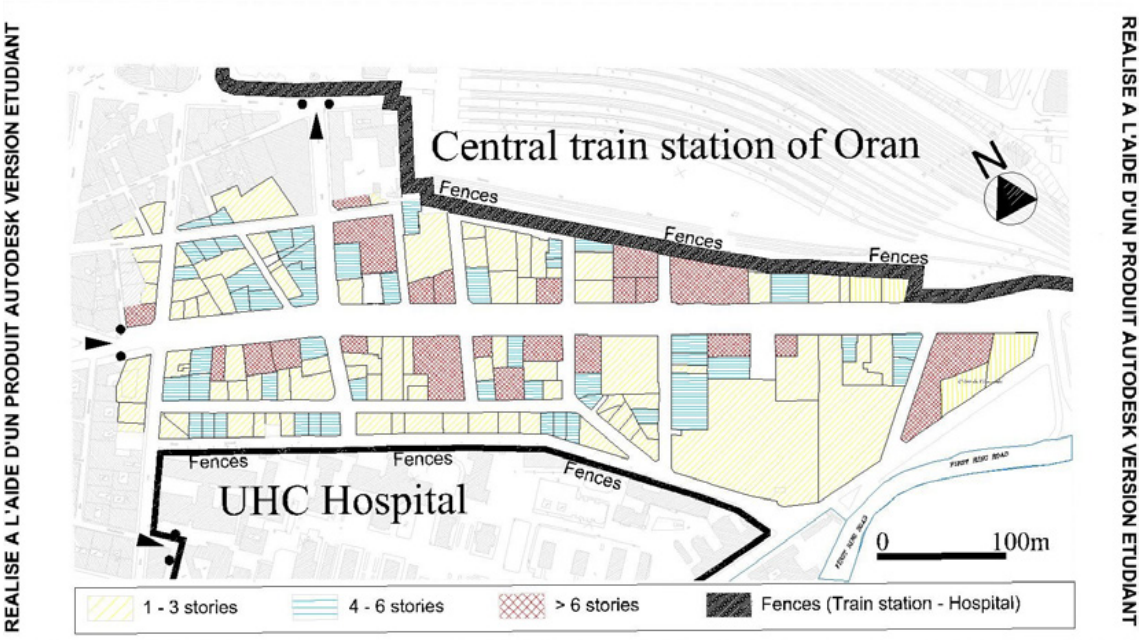
Figure 4. Building heights in relation to street hierarchy. The central axis is characterized by high buildings and concentration of tertiary urban activities. Peripheral axes are characterized by low building heights.



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Between heaven and earth. Town planning and the urban image of the Late Archaic Etruscan city of Kainua-Marzabotto

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Closely connected to the sacred rules of the Etrusca Disciplina, the planning of urban space represents one of the most interesting aspects of the Etruscan culture.

From this purely religious perspective, the town's form and rigorous zoning became expressions of the divine, who guided human actions to define the perimeter and the principal axes of the settlement according to the transposition of the particular geometry of the templum celeste from the sky to the ground. These aspects can be observed in their complexity only in the city plan of Kainua-Marzabotto, an exceptionally well preserved colonial town (re)founded at the end of the sixth century BCE along one of the many Apennine pass between Tyrrhenian Etruria and the Po Valley.

Through the presentation of new data deriving from metrological analysis recently conducted on the urban plan of the Late Archaic city of Marzabotto, this paper aims to examine the interaction between ritual practice and urban planning in order to reconstruct the original proportions of each element of the urban grid and the architectural landscape of the town, as well as define its borders that are currently not completely known. The image of a new foundation settlement emerges that was planned through a careful survey of the land and characterized by an urban system designed on a geometric-proportional basis using a linear unit equal to the Attic foot of 29.6 cm.

Introduction

In the sphere of Etruscan studies, the archaeological site of Marzabotto is unique in its almost total lack of overlapping Roman and Medieval phases and, with a discrete degree of precision, in the possibility to "read" and measure on site the perimeter of each structural element of the Etruscan settlement, whose ancient name – *Kainua*, or "the new" – demonstrates the strong ideological value attributed to a colonial settlement intended to be a "planned city" (Sassatelli and Govi 2005b, p. 55).

In fact, among the newly founded cities of Etruria Padana, the one that permits the reconstruction of the general urban layout is surely the late archaic settlement at *Kainua* (Marzabotto III), now attributed by E. Govi to a phase subsequent to the so-called Marzabotto II, a settlement documented by sporadic building attestations (Govi, 2016) and temporarily located between an early nucleus of Etruscan huts (Marzabotto I) and the new urban foundation of the late 6th – early 5th centuries B.C. (Govi 2014, p. 107).

The form of the planned city was conceived according to a clear urban plan, in which both the hierarchy of the road routes and the different widths assigned to individual lots suggest the application of zoning principles in the division of space.

The *ratio* of the urban system is expressed in a perfectly orthogonal structure, subdivided into eight *Regiones* (1) by four *plateiai* having a width of 15 m.

Of these, the main *plateia* (A) runs in a north-south direction, centrally crossing the settlement, while the others (*plateiai* B, C, D) are arranged in an east-west direction, with distances of roughly 144 m between B and C, and 179 m between C and D. These measurements determine the length of the blocks of the four central *Regiones* (III; IV; V; VI), which are in turn divided by a fabric of parallel *stenopoi*.

On the western side of *plateia* A, the blocks all have the same width, between 35.6 and 36.2 m, and are subdivided by *stenopoi* with a width of roughly 5 m. However, the section of the city to the east of the north-south *plateia* appears to be articulated according to different criteria, probably dictated by the presence of the *Uni* temple in *Regio* I (Govi 2017).

In fact, located east of the large central artery, there is a 36 m wide block, divided by an *insula* that is only 18 m wide and separated by a *stenopos* of the anomalous size of 6 m (4b); following this, there is a 5 m wide *stenopos*, and then a 45 m block (4a) and, subsequently, three 5 m wide *stenopoi* and three 35.5-36 m wide blocks.

These measures make it possible to reconstruct standard lots in the central regions of about 35.5-36 m x 144 m (*Regiones* III e IV) and 35.5-36 m x 179 m (*Regiones* V e VI).

However, nothing certain can be said regarding the north-south extension of *Regiones* VII and VIII, that in large part has fallen into the river below, or the *insulae* of *Regiones* I and II, where the sacred urban precinct and the hill of the acropolis are located respectively (2).

While the various blocks were distributed equally throughout the urban fabric they were parcelled in a non-uniform way (3) and the houses are particularly dense in proximity to *Plateiai* A and D, the street axes that allowed one to traverse the city and led to the city gates (4), among which only the eastern one (East Gate) is currently known. This access must have been inserted into a agger fortification system, probably reinforced by a palisade and ditch, as is the case in the Etruscan settlements of Spina, Bologna and Forcello di Bagnolo San Vito (5).

In summary, what emerges is the image of a settlement where the internal road network was designed to fulfil functional needs, characterised by a wide range of public and sacred uses in the northern area, partially unbuilt perimetric lots, (6) and boundaries that are still unclear but that certainly were clear in antiquity visible in the presence of areas designated for necropoleis near the East Gate and beyond the city's northern edge (Northern Necropolis).

In recent years the strong ideological and religious connotations of the city's form that were already attributed to it in the past have been confirmed, in which the urban structure, created through an Etruscan foundation rite, would derive its generative lines from the transposition on the ground of the solar *templum* of the site (7).

And it is this ritual process followed at the act of foundation – witnessed by *cippi* and river stones with *decussis* that are buried at the centre of the main street intersections – would allow the justification of the particular arrangement of the four *plateiai* which, in fact, are

perfectly oriented according to the equinox and solstice paths of the sun and produce blocks of differing length in the southern and northern sectors of *plateia* C.

However, studies concerning the city's foundation rite that attempt to clarify the original geometric axis assumed from the main urban road system still do not resolve many of the more obvious design aspects of the city plan, such as the use of the unit of measure in the land division and the width of the blocks, *plateiai* and *stenopoi*, whose proportions were used by previous scholars to were compared to urban models of Western Greek inspiration (8).

Furthermore, both Castagnoli (Castagnoli 1968, p. 119) and Colonna (Colonna 1986, p. 464) hypothesize the use of the 120 Attic foot (35.5 m) *actus* for the width of the Marzabotto *insulae*.

The attic foot was recently revealed in the construction of the urban temple dedicated to *Tinia* (Baronio 2012a, p. 30) and probably used in the same chronological period as certain areas of Tyrrhenian Etruria (9).

Therefore, on the basis of these elements, a new metrological survey of the city's urban plan was recently conducted (Baronio 2012b) in order to verify the reliability of the use of the attic foot (29,6 cm) as the basic standard unit of measure in the planimetry of the settlement, and to understand the proportional relationships used in the realization of the urban plan.

The analysis permitted a deeper understanding of many proportional aspects linked to the Etruscan town planimetric subdivision, allowing us to obtain interesting results concerning the theoretical aspects of the city plan, realized by the ancient architects at the end of the 6th century B.C.

Methodology

For brevity's sake, I present only the final results of the research and refer the reader to Baronio 2017 to see the planimetries, measures and other calculations performed.

The measures necessary for the survey were obtained both from the original planimetry of the archaeological area, realized by Arc. N. Masturzo, and by an intensive on-site survey aimed at checking the dimensions of certain blocks and their internal subdivisions (Masturzo 2005, pp. 158-165).

To obtain useful data for the metrological research and have a complete set of dimensions, numerous surveys were carried out, at regular intervals of 8-10 m from one another. All measurements were taken on the edges of the preserved blocks, excluding any measurement derived from hypothetical or reconstructed alignments. In total, 168 measurements related to the foundation level of the principle elements of the urban fabric were considered (10), together with several other measures related to the subdivision of the houses located in *Insula I* of Regio IV.

For each of the 168 measurements acquired, the related margins of error were computed, adding and subtracting the nominal value of the possible maximum error, quantified in ± 20 cm (11). Finally, 45 measures were carried out that included more urban components (*plateiai*, blocks and *stenopoi*), to verify on a larger scale the correspondence between the measurements in Attic feet and the actual dimensions of various elements of the urban plan.

As far as the evaluation of widths in the E/W direction of *plateiai, stenopoi* and *insulae* is concerned, thanks to the numerous samples of the measured dimensions, it was possible to identify a restricted range of the most recurring measures with good statistical reliability:

- *insulae* standard E/W width = 35.77-35.92 m
- *stenopoi* width = 4.64-4.84 m
- *plateiai* width = 14.7-14.95 m

However, in other cases, the few quotes measures did not allow for a statistical analysis, thus it was necessary to proceed by calculating the values from arithmetic means.

- *insula* 4a E/W width = 44.64-44.87 m
- *insula* 4b E/W width = 17.88-18.08 m

- anomalous *stenopos* width = 5.89-6.03 m
- R. III e IV *insulae* length N/S = 143.74-143.91 m
- R. V e VI *insulae* length N/S = 179.17-179.26 m

By transforming the dimensional intervals of the various components of the urban plan into Attic foot (a.ft.) of 29.6 cm, we obtain:

- *plateiai* width = (49.7 - 50.5 a.ft.) ≈50 a.ft. (14.8 m)
- *stenopoi* width = (15.7 - 16.4 a.ft.) ≈ 16 a.ft. (4.74 m)
- standard *insulae* E/W width = (120.8 - 121.3 a.ft.) ≈ 121 a.ft. (35.82 m)

- *insula* 4a E/W width = (150.8 - 151.6 a.ft.) ≈ 151 a.ft. (44.7 m)
- *insula* 4b E/W width = (60.4 - 61.1 a.ft.) ≈ 61 a.ft. (18.05 m)
- anomalous *stenopos* width = (19.9 - 20.4 a.ft.) ≈20 a.ft. (5.92 m)
- R. III e IV *insulae* N/S length = (485.6 - 486.2 a.ft.)≈ 485-486 a.ft. (143.56-143.86 m)
- R. V e VI *insulae* N/S length = (605.3 - 605.6 a.ft.) ≈ 605-606 a.ft. (179.1-179.38 m)

It is notable that, in the majority of cases, the conversion into Attic feet restores practically complete measures centered with respect to intervals of the quotas expressed in meters.

The principal uncertainties concern only the dimensions in the N/S direction of the settlement's central regions, where a variable of roughly one foot still remains.

The reliability of the dimensions restored in feet that were assumed as valid for the various elements of construction was then verified by further cross-checks of the urban scale that have confirmed the overall validity of these values (12), allowing for the reconstruction of the foundation plan of the city as shown in fig. 2.

Observing the widths of the blocks, equal to 121.61 and 151 ft., we note that they are all one unit higher than the complete figure but considering that the measurements refer to the foundation level, it is probable that the upper floors had slightly different dimensions and provided a slight recession of the upper foundation wall which, on the basis of some construction elements was quantified to roughly 15 cm, or half a foot (13).

Therefore, to arrive at the true dimensions of the upper foundation walls of the lots, it is necessary to subtract from each block a quantity equal to a foot, both in length and in width. Thus we obtain:

- R. III e IV standard blocks dimensions = 120 a.ft. x 484 / 485 a.ft.
- R. III. 4b standard block dimensions = 60 a.ft. x 484 / 485 a.ft.
- R. III. 4a standard block dimensions = 150 a.ft. x 484 / 485 a.ft.
- R. V e VI standard blocks dimensions = 120 a.ft. x 604 / 605 a.ft.
- R.V. 4b standard block dimensions = 60 a.ft. x 604 / 605 a.ft.
- R.V. 4a standard block dimensions = 150 a.ft. x 604 / 605 a.ft.

In the meantime, we have to increase the widths of *stenopoi* and *plateiai* by a foot, attributing to those elements the sections of space subtracted from the sides of the *insulae*:

- *plateiai* width = 51 a.ft.
- *stenopoi* width = 17 a.ft.
- bigger *stenopos* width = 21 a.ft.

The above measures indicate the desire to differentiate according to proportions both the width of the *insulae* and that of the road axes. In fact, the *plateiai* were designed using a width equal to that of three flanking *stenopoi*. This is a subdivision adopted in reality by dividing the total width of the road into three sectors of roughly 17 ft. each, of which the central one was occupied by a carriageway and the two lateral ones by wide gravel sidewalks.

Analogously, the dimensions of the *insula* facades were proportioned thanks to a 30 ft. module: Blocks 4a and 4b of *Regiones* III and V are respectively five and two modules wide, while the standard *insulae* have a width equal to four modules. At the foundation level, the

blocks therefore assume proportions equal to 1:4 and 1:5, dimensions aimed at realizing the design on the construction site, while in elevation a restriction of a foot on the insula facade corresponds to a very small elongation in the N/S direction of the overall proportions of the lots.

Forming process

At this point, a few words must be said about the interaction between the planning and the foundation rite. In this perspective, the theory of urban design constitutes the execution in a geometric key of what has been already defined on site during the ritual of the *spectio*, aimed at the *limitatio* of the nascent city (14).

Therefore, the solstice (*plateiai* B and D) and the equinox paths (*plateia* C), the north-south axis (*plateia* A) and the seat of the *inaugurationis* (at the intersection of A and C) became the guiding elements for the urban planner in the realization of the new form of the inhabited area. In fact, if we consider the ritual aspect as a preparatory act for the foundation plan, we can understand how the design of the city required a considerable intellectual effort, aimed not only at respecting the previously mapped axes, but also at the theorization of dimensional relationships between various construction elements and an easy transposition of these same relationships on the ground, as is already apparent in the simple proportions that define the urban structure.

It is also possible to observe a clear design intent conceived on a geometrical basis in the internal subdivision of the single blocks (15). Extremely interesting for this argument is the sanctuary area dedicated to *Tinia*, whose *temenos* reveals dimensions of 180 x 120 ft. (*ratio* 3:2), and which hosts within its interior a 120 x 75 ft. temple (*ratio* 8:5) that is 51 ft. away from the opposite northern boundary of *Plateia* A (Baronio 2012a, pp. 18-19; 2012b, p. 130). It follows then that, in the design of the peripteral temple and its enclosure, they used the identical dimensions as those used for the width of the blocks and the *plateiai* width. An even more surprising element becomes clear if we consider that the podium of the *Tinia* temple retraces in its extension the shape of some of the residential lots of the so-called "Isolato Mansuelli" (*Regio* IV, Insula I), inserting itself dimensionally inside the urban fabric like a true and proper "house of god" (16).

The metrological study of the block has, in fact, allowed us to verify that its internal partitioning was definitely carried out on a geometric basis through its division into at least seven residential units of different proportions, with two lots of about 60 x 120 ft. occupying the northern sector of the insula (houses 1 and 2) and a square sector of 120 x 120 ft. placed at the uppermost southern sector that also, with all probability, was composed of two lots of the same size as the previous ones. Among these, there were additional residential units, two of which, as already mentioned, preserve a perimeter equal to 75 x 120 ft. (houses 6 and 5).

The comparison between the data obtained from the metrological survey and those offered in the existing bibliography allow for a few considerations concerning the original form of the settlement, especially with respect to the hypotheses proposed in the past for its northern limit (17).

In fact, analogous to what was found regarding the proportions of the *Regiones* III, IV, V e VI blocks, one could consider that also the *insulae* north of *Plateia* B and those to the south of *Plateia* D were designed using a geometric *schema* on a square standard.

Among the various possibilities regarding the north perimeter of the settlement, it is highly probable that a relationship existed between the sides that are less than 1:3, in which the extra extension of the urban grid towards the north would have overlapped with the area of the *fontile* sanctuary, located along the northeast edge of the plateau that has been always maintained to be a suburban complex adjoining the northern necropolis. If this was the limit of the city, it would be close to the Porrettana road, just north of the building that houses the Archaeological Museum.

This hypothesis seems to be confirmed by some evidence in the orography of the area, first by the layout of the highway itself, which, in correspondence of the archaeological area, deviates for a short stretch in a direction analogous to the nearby *Plateia* B.

The same orientation is then observed from the access road to the Villa Aria which, as you

can see from the aerial photographs, is in continuity with the Porrettana route and climbs up the hill with a rectilinear axis (perfectly parallel to that of the *plateia*) and then abruptly bends towards the villa.

Considering that both the route of the highway and the Villa Aria access road were realized before the discovery of the Marzabotto urban plan (18), one wonders if their alignment does not follow that of the ancient agger that must have defined the northern perimeter of the Etruscan city and whose remains could have not only have suggested the orientation of the entrance to the villa but also could have been incorporated into the substructures of the road itself.

Not by chance, in recent years G. Sassatelli has proposed the recognition of the remains of a probable *agger terreus* in an elevated section of land behind the acropolis buildings (19), a datum connected to what was already mentioned that would demonstrate the preservation of the agger structures only near the hill, which is the only point on the plateau not affected by intensive agricultural activity. Finally, one cannot neglect, for the purposes of the proposed interpretation, that the distance between the path of the Porrettana route corresponding to the villa's gate (20) and the intersection between *Plateiai* A and C, marked by the river stone with *decussis* found there, would be identical to the one separating the East Gate from the central axis of *plateia* A, quantifiable as roughly 257 m.

Therefore, it is reasonable to think that the blocks of *Regiones* I and II were characterized by rather reduced dimensions, reconstructed as roughly 120 x 300 ft. (2:5), considering the probable presence of the agger at that point that delimited the perimeter of the settlement. Finally, even if we consider all the precautions imposed by chance, it cannot be excluded that the same distance of 257 m had been reinforced also at the southern end of the *decussis*, allowing one to hypothesize even more reduced proportional values, perhaps corresponding to 2:3 (120 x 180 Attic feet) for the sides of the *insulae* of Regiones VII and VIII.

Conclusion

In conclusion, the metrological analysis conducted on the urban plan of the late archaic city of Marzabotto allowed us to verify the full compatibility of the Attic foot of 29.6 cm as a linear unit at the base of the settlement plan, permitting new hypotheses regarding what must have been the limits of the ancient settlement and confirming on an urban scale what emerged from previous geometric-proportional studies conducted on the plan of the *Tinia* temple and its *temenos*.

What emerges is the image of an Etruscan city intelligently designed on the basis on specific functional needs, in which the careful planning of urban roads, domestic spaces, and sacred areas, designed both on the basis of a modular scheme and through the frequent reiteration of predetermined measurements, presupposes a unified urban plan that was at the same time fully implemented and executed through a careful survey of the land.

Figure 1a. Scheme of the solar templum of the town; **1b.**In black (numbers 2, 5, 9) the points of discovery of cippi with decussis at the crossing of the plateiai; C) General plan of the Etruscan city of Kainua-Marzabotto (from Baronio 2017, p. 115, fig. 1).

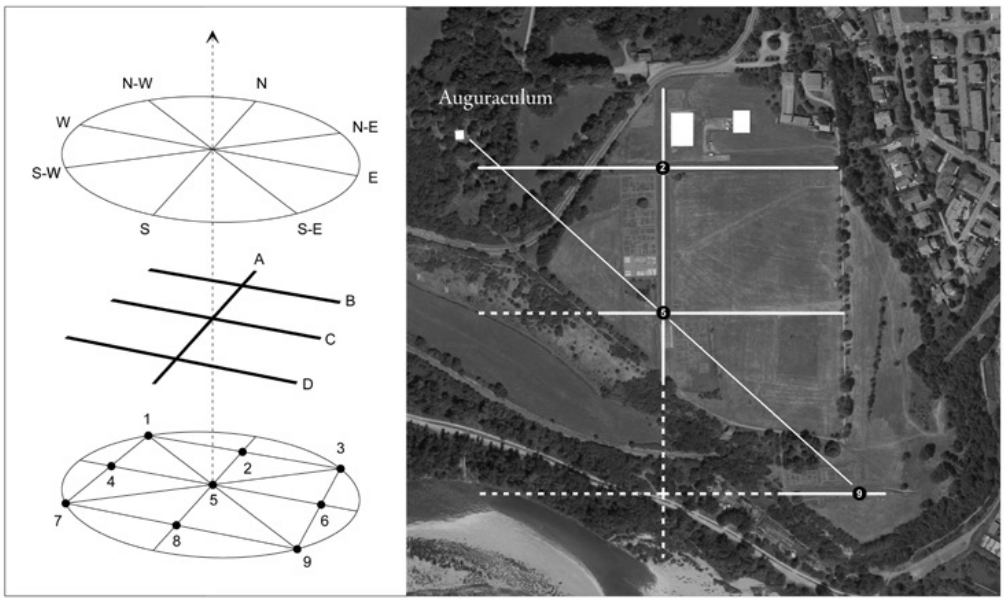
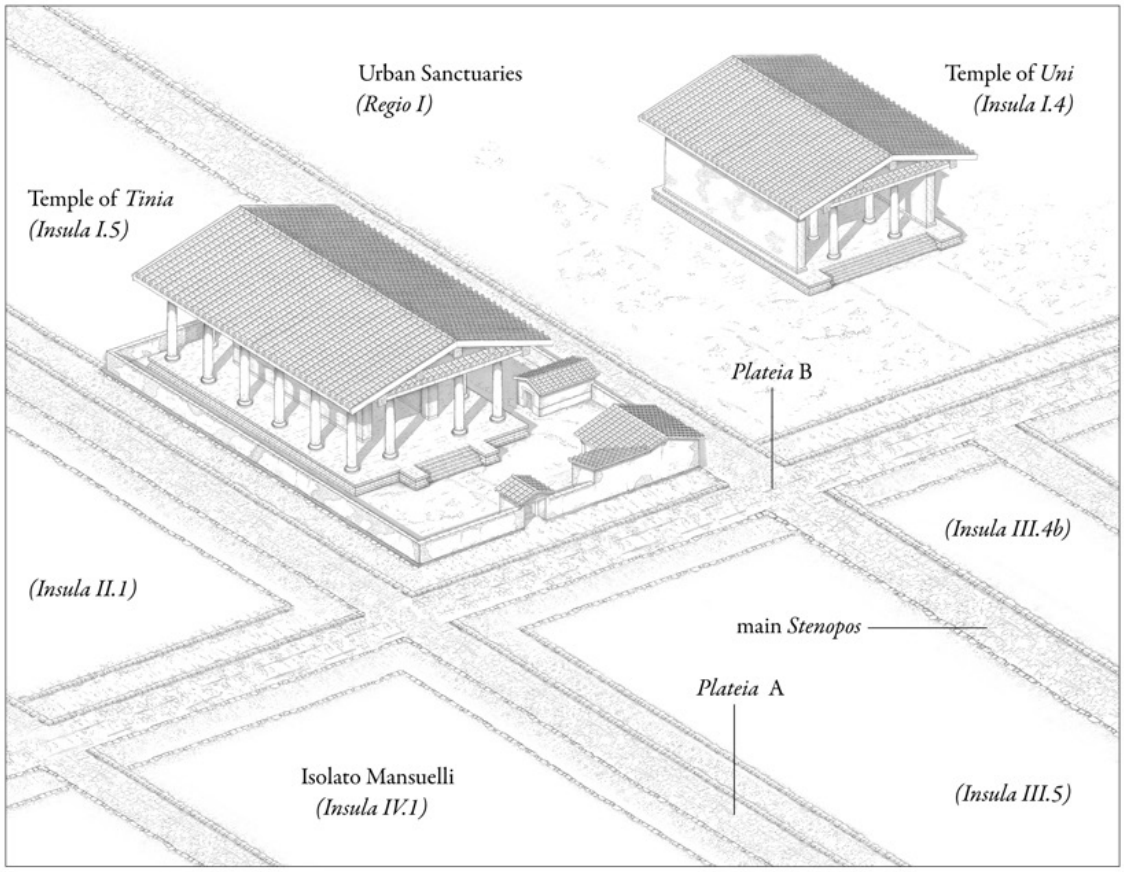


Figure 2. The orthogonal structure of the city: A) The plan of the foundation level of the blocks; B) The plan of the upper levels.

Figure 3a. Reconstructive drawing of the urban sacred area; **3b.** Proportional scheme of the dimensions of the urban blocks.



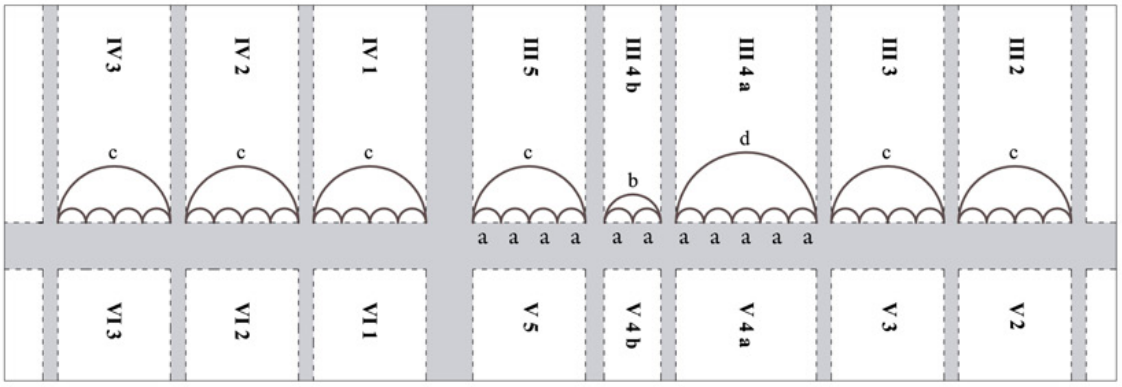
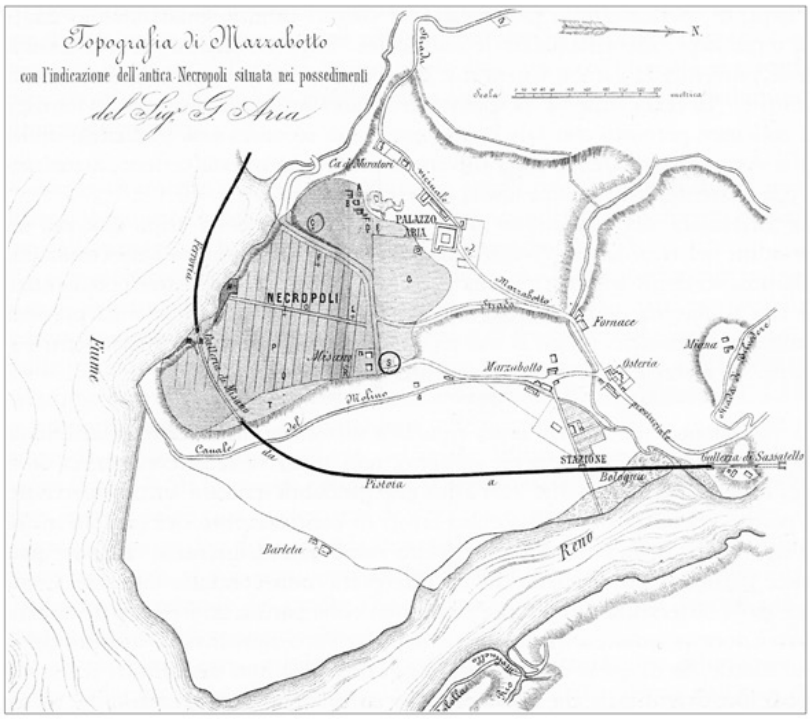
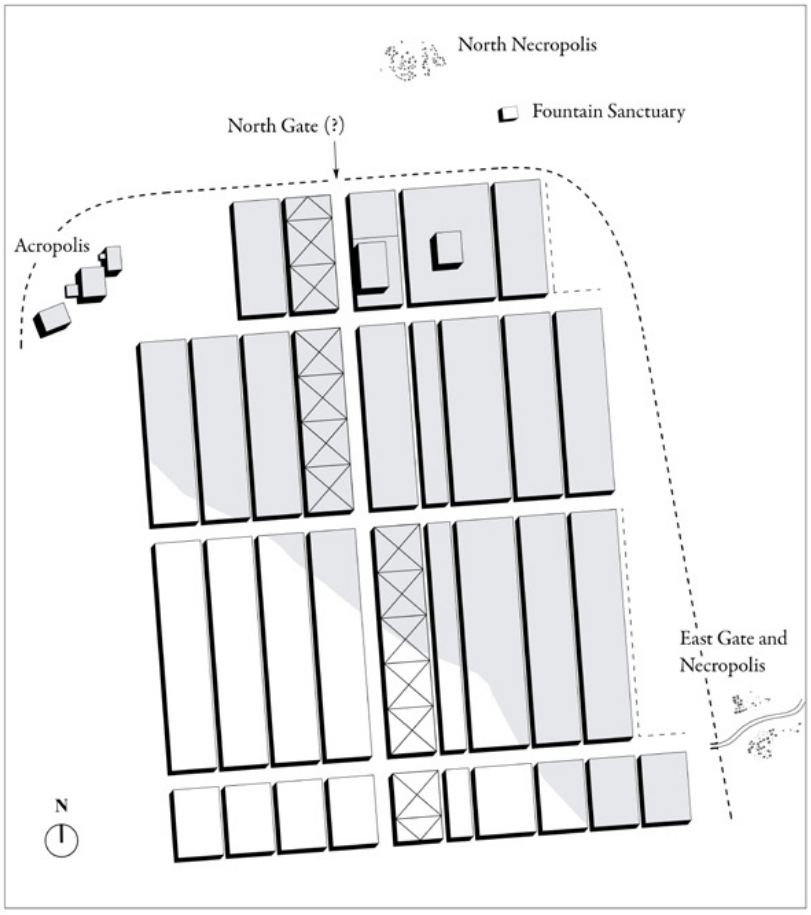


Figure 4a. The Pian di Misano map published in 1865 by Gozzadini; **4b.** Reconstructive hypothesis of the boundaries of the city.





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Notes

(*)This article is a summary of my MA thesis in Etruscology at the University of Bologna (Baronio 2012b), of which an extract in Italian has already been published (Baronio 2017). I thank Jennifer Muslin for her precious help in the English translation of the text.

(1)The *R*.VIII, most of the *R*.VII and VI, and the *R*.V S/W angle are crumbled into the river Reno channel, due to the progressive erosion of the plateau.

(2)On the various relevant aspects on the *Tinia* peripteral temple construction, see Baronio 2012a; Sassatelli 2009; Sassatelli and Govi 2005b. Furthermore, concerning the last exploratory trenches on the acropolis hill, see Lippolis 2005, pp. 139-165.

(3) A different distribution with respect to that of the residential lots of *Insula R*.IV, 1 was discovered in the northern sector of *Insula R*.V, 3 (Massa Pairault 1997) and in the southern

part of the *Regio* V *insulae*. In Govi 2016 one finds specific references to the different internal divisions of the blocks.

(4) As shown in Malnati and Sassatelli 2008, the structures relating to the so-called Porta Nord, excavated by Mansuelli between blocks 4b and 5 of *Regio* I, are not attributable to an urban access.

(5) Malnati, Sassatelli 2008. See, specifically, the reconstruction of Spina's *agger*, proposed at p. 442, Fig. 8. Instead for the excavation of the Etruscan settlement of Forcello and its *agger terreus*, see Casini and De Marinis 2005, pp. 35-53.

(6)In the actual state, it is possible to confirm that a large part of the *R*.III, 1-3 *insulae* and a portion of *Regio* I's eastern sector have a lack of densely built-up areas (Govi 2014, pp. 91 and 94).

(7)Gottarelli 2005. A summary of the foundation rite dynamics performed at Marzabotto can be found in Govi 2014 and in Sassatelli and Govi 2010.

(8) Lippolis 2005 and, lastly, Govi 2014, p. 102. Analogous relationships have been recognized in Sicily and Magna Graecia in the urban development of cities founded or refounded between the end of the sixth and the beginning of the fifth centuries B.C. In particular at Naples: 35 x 180 m = 1: 5; Naxos: 39 x 158 m = 1: 4; Camarina 34.5 x 135 m = 1: 4 (Mertens 2006, pp. 340-380). Insula facades equivalent to those at Marzabotto are found instead at Metaponto, Croton, and Poseidonia from the early sixth century onwards, while at Naples, Hipponion, Herakleia, and Agrigento they appear only in the early years of the fifth century.

(9) The Attic foot of 29.6 cm has been recognized as the unit of measure used in the construction of Temples A and B at Pyrgi (Colonna 1985, pp. 127-130).

(10) The quotas detection for the analysis of the road network can be divided as such:

- 82 quotas for the analysis of the road network, in detail: 27 near *Plateia* A; 10 at *Plateia* B; 3 at *Plateia* C; 11 at *Plateia* D; 3 along the anomalous *stenopos* between Blocks 5 and 4b of *R*. I, III, IV; 28 along the other *stenopoi*.
- 41 quotas for the blocks' analysis, of which are: 34 for the E/W sides of the standard blocks; 2 for the E/W side of Block 4b; 2 for the N/S sides of the blocks of *R*. III and IV; 3 in the N/S direction for Block 3 of *Regio* IV.
- 45 quotas for the total verification, from which we have: 11 in the N/S direction; 34 in the E/W direction.

(11) The error was measured on the basis of observations made in situ on the construction technique of the river stone foundations of the buildings, considering the eventual slippage of the most superficial stones and the bulging of the masonry walls.

(12) The maximum difference between the actual and restored measures in Attic feet is less than ±1 foot in 60% of cases, and is attested to be between ±1 and ±2 feet in 33% of the remaining ones. Furthermore, it has been ascertained that the measures in excess of some urban components can often be compensated by those defects in the neighboring elements and vice-versa.

(13) The hypothesis of a recession of the walls elevated with respect to the external course of the foundations is supported by several factors, among which the presence at Marzabotto of slight setbacks in the upper levels of the masonry of the foundation walls. This is a common practice in ancient construction, aimed not only at achieving a greater solidity of the upper walls but also at protecting them from direct contact with humidity in correspondence with the gutters for the discharge of water, attested along the edges of various urban blocks. Moreover, as shown in some documented cases (Romagnoli 2010, pp. 225-233), where there are gutters covers that must have necessarily also leaned on the foundation border, thus subtracting a narrow band from the overall width of the wall's elevation.

(14)A description of the various operational phases necessary for the astronomical definition of the city's sacred space in the Etruscan-Italic rite is found in Gottarelli 2005, pp. 102-106, with reference to the scheme on p. 105.

(15)Lippolis 2005, pp. 151-152. Moreover, regarding Marzabotto's residential building, see most recently; Govi 2016, pp. 187-241.

(16) The idea of a "house of the divinity", already expressed by G. Sassatelli (Sassatelli and

Govi 2005b, p. 47), can now be reinforced by the metrological analysis of the settlement, which highlights the correspondence between the temple plan and the perimeter of the atrium houses 5 and 6, arranged along *Plateia* A in *Insula R*.IV, 1.

(17)In detail, Malnati and Sassatelli 2008, pp. 453-54, with reference to fig. 12.

(18)Both roads are represented in the Pian di Misano map, published in 1865 by Gozzadini and produced before the identification of the Etruscan city remains, still occupied by a vineyard.

(19)Malnati and Sassatelli 2008, p. 453. This land rise is clearly evidenced by the isoipse of the plan made by Arch. Masturzo, as shown in fig. 5 published in Lippolis 2005, p. 152.

(20)The measure was taken on the *Plateia* A axis, at the height of the southern pillar of the gate which leads into the Aria property.

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The city and the detention type

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Considering the continuous changes of which the urban organism is the protagonist, the article intends to analyze the history of an architectural type: the prison building. From the typological analysis the aim is to understand how those buildings whose detention function has ceased to exist, are still able to participate in the processes of urban evolution. The type of prison begins his story by adapting himself to existing buildings already involved in the urban fabric, changing himself only subsequently in an independent physiognomy. These are mainly convents, as happened for example in Venice for the current prison house for women of Giudecca or the Regina Coeli Prison in Rome, grafted onto a seventeenth-century convent structure.

For example, the Murate complex in Florence is evidence of how the public institution was involved in urban processes and how it continues to be a structure capable of taking part in an active process of change. "There is no doubt that new architecture is not given without modification of the existing [...] the main thrust towards development is all the transformation of urban and territorial facts rather than the formation of the new" (Gregotti, 1984). The urban scale is intercepted by the typological one and vice versa.

The custodial type is used as a key to interpreting new urban facts, both in past and current urban processes. "The type is one of these tools: it is the product of human labor, able to understand reality and to provide it with an order through architecture." (Martí Arís, 1993)

L'oggetto principale di questa analisi è la città e in qualità di architetti si intende utilizzare come strumento di indagine la lettura del tessuto urbano. La città viene letta come organismo, quindi un insieme costituito da più parti, frutto di trasformazioni e che continua ad essere oggetto di mutamenti. Interessante a tal proposito la posizione espressa da Gregotti: la premessa della "modificazione" e la nozione di "appartenenza". "Questa nozione di appartenenza si oppone progressivamente all'idea di tabula rasa, di ricominciamento, di oggetto isolato, di spazio infinitamente e indifferentemente divisibile" (Gregotti, 1984). In questo senso il progetto opera con cura su una materia che appartiene alla comunità, la città, e ha il compito di doverne trasmettere i valori alle generazioni future. La città vive quindi di continui processi trasformativi in cui però possono essere riconoscibili le tracce della fase precedente alla trasformazione. In questo riconoscimento si palesa la struttura della città, quei caratteri peculiari che ne determinano l'identità e la sua autonoma caratterizzazione. Come già detto lo strumento utilizzato per capire questo processo in atto è la lettura, intesa "come ricostruzione" e quindi il progetto "inteso come riprogettazione". (Caniggia, 1997)

Andando ad affrontare il tema delle strutture architettoniche penitenziarie in cui la funzione detentiva ha ormai cessato di sussistere, occorre soffermarsi sul valore intrinseco dato dal tipo, su una costante che fornisce le regole per analizzare questo tema. "la città, come cosa umana per eccellenza, è costituita dalla sua architettura e da tutte quelle opere che ne costituiscono il reale modo di trasformazione della natura […] nel senso stesso di queste trasformazioni si costituiscono le prime forme e i primi tipi di abitazione; e i templi e gli edifici più complessi. Il tipo si va quindi costituendo secondo delle necessità e secondo delle aspirazioni di bellezza; unico eppur vastissimo in società diverse, è legato alla forma e al modo di vita" (Rossi, 1995). Interessante è il caso del penitenziario, perché nell'ambito che si è deciso di studiare, l'uso detentivo subentra quasi sempre ad un altro. Monasteri, conventi, castelli ecc. che trasformandosi sono divenuti altro rispetto alla funzione attribuitagli, persistendo comunque nel loro ruolo urbano all'interno della città. Anche se si tratta di edifici non più destinati alla funzione detentiva è importante accostare il tema del carcere a quello della città, rispondendo anche ad un dibattito attuale. Si è assistito con il passare del tempo, soprattutto dopo la riforma penitenziaria del 1975 (legge 354/1975), all'allontanamento di questa istituzione pubblica dalla sfera urbana. L'atteggiamento è stato quello di costruire grandi impianti confinati al di fuori della pertinenza cittadina. Si parla di atteggiamento perché questo processo non si è verificato a tappeto, si pensi a Regina Coeli a Roma, a San Vittore a Milano o anche come è avvenuto per Rebibbia e Sollicciano, per cui il carcere si è allontanato dal nucleo urbano ma comunque il processo trasformativo della città ha pian piano coinvolto queste realtà, instaurandovi un dialogo. In ogni modo gli edifici presi in esame rappresentano il 25% dell'attuale patrimonio di architettura penitenziaria in Italia. All'incirca 55 complessi penitenziari non sono progettati e costruiti per adempiere all'uso detentivo, ma si sono adattati per assolverlo. Il tipo predominante in questo gruppo è quello della "corte" e sono strutture per lo più datate antecedentemente al 1890. Per comprendere il motivo di tale scelta di campo si propone un passo estratto da Quaderni di Criminologia del 2001, "questo gruppo è costituito da 55 complessi […] alcuni dei quali è già prevista la dismissione non appena saranno disponibili istituti in corso di realizzazione". (Scarcella, Di Croce, 2001)

La storia dell'architettura penitenziaria è una storia recente strettamente connessa al sistema penale e alla concezione di pena che vi si trova alla base. Fin tanto che non si è giunti alla moderna impostazione del sistema giuridico, il carcere era un luogo che non necessitava di definizione, era solo uno spazio contenitivo transitorio prima di procedere all'esecuzione della pena. Tra il XVII e XVIII secolo comincia a strutturarsi una storia dell'architettura penitenziaria, che parallelamente consente di delineare la storia della concezione della detenzione punitiva, conquista dell'età moderna. (Scarcella, Di Croce, 2005)

La premessa di questa trattazione permette quindi di cominciare ad intraprendere questo viaggio nella trasformazione della città, non come un processo inedito, nuovo, sconosciuto, ma come naturale atteggiamento della città, regolato dal progetto.

Funzionale ai fini di questa analisi è il richiamo al concetto di durata. Infatti è caratteristica del mondo moderno, la realtà della macchina, della produzione incessante e continua, l'abbandono del valore della durata. Svolto il suo compito, l'oggetto, finito il suo ciclo vitale, può essere, anzi deve essere smaltito per lasciare spazio al *nuovo*. In architettura,

soprattutto all'interno della cultura mediterranea, questo approccio cambia e l'esperienza di queste strutture penitenziare ne danno la testimonianza. Testimonianza della durata e della trasmissibilità di valori culturali che vanno al di là del semplice uso. Risalendo all'origini etimologia di "durata", si nota come in latino il verbo "duro" sta a significare "consolidare, rafforzare, rimanere nel tempo", la materia quindi al di là del suo uso diventa testimonianza di ciò che è avvenuto prima e in più si consolida nel presente per continuare ad aprire scenari di possibilità. In greco l'origine è meno schietta ma forse offe dei livelli di lettura aggiuntivi, infatti δια-μονή, durata, vede nel termine μονή il significato di permanenza, addirittura per alcune accezioni anche abitazione, monastero, preceduto dalla preposizione δια che dà un senso di attraversamento, di passaggio, da cui si elabora l'idea di permanenza attraverso il passaggio di più fasi.

Se il concetto di durata diventa un criterio di analisi dell'edificio ancora prima va utilizzato come strumento l'atto di lettura della città, intesa come tessuto, come insieme organico in divenire.

"la città organica delle aree murarie nasce dalla formazione di aggregati di questi recinti strutturati da percorsi nei quali sono riconoscibili, quali unità intermedie, interi isolati di case a corte" (Strappa, 2014). Il ruolo del muro è fondamentale nell'atto di cingere uno spazio e quindi di identificarlo. I luoghi di reclusione ottocenteschi utilizzano spazi organizzati intorno ad una corte centrale, in cui il recinto, che dapprima svolge ruolo ordinatore, di inclusione verso l'interno, assolve al compito di protezione e sicurezza. Si nota come già da questa riflessione un principio originario di formazione dello spazio diventa anche base per un discorso sul futuro dello stesso edificio. Il muro quindi mantenendo la sua integrità materiale e di oggetto cambia. Cambia il suo rapporto con l'intorno, infatti il sistema a corte nasce per aggregazione di cellule elementari intorno di uno spazio aperto comune, quindi sono le stesse cellule a cingere lo spazio della corte, a svolgere il ruolo di recinto, una volta trasformata la funzione originaria abitativa in detentiva il muro non è più inclusivo, ma esclusivo rispetto alla città. "è l'idea di recinto generare lo spazio domestico difeso, la casa a corte, forma di abitazione che dà vita, formandone la base, ai tessuti della città nell'Europa meridionale […] essa sembra esprimere, concretamente e simbolicamente, le stesse radici comuni delle civiltà murarie, attraverso cellule edilizie che si avvolgono intorno ad uno spazio aperto centrale, essenza della casa delle origini che costituirà anche la matrice dell'architettura pubblica, dei grandi monumenti per le istituzioni civili e religiose"(Strappa, 2014)

Se si allarga ancora di più la focale della lettura si può percepire come nella storia dello spazio detentivo, all'interno del centro urbano, i principi spaziali formativi erano quelli dell'aggiunta e della sottrazione ad una cellula originaria, prima della nascita dell'edificio detentivo autonomo ma anche più tardi con i primi impianti centrali; una volta fuori dal tessuto urbano questi processi formativi decadono, vengono montati degli edifici autonomi che non hanno alcuna relazione con la città.

Il caso dell'ex carcere delle Murate sembra proporre una sintesi di tutti gli aspetti affrontati fin ora. Si tratta infatti di una struttura sorta originariamente come Convento cinquecentesco, a sua volta innestatosi su un nucleo originario di case a schiera, che con il passare del tempo si è trasformato, assieme alla città, divenendo struttura detentiva e poi complesso residenziale e di servizi.

Immersa nel quartiere Santa Croce al centro di Firenze, il complesso delle Murate, chiamato così a causa della sua origine avvenuta nel XIV secolo quando dodici donne, dette le murate, si fecero recludere volontariamente in una piccola casa vicino al Ponte Rubaconde (attuale delle Grazie), ha una storia fortemente legata all'evoluzione urbana di Firenze. A causa del numero elevato delle consorelle nel XV secolo vi fu la costruzione di un monastero a ridosso delle mura. Dal 1845 al 1984 la struttura conventuale ospiterà il carcere maschile, trasferito poi nella nuova sede a Sollicciano. Nel 1986 viene bandito un concorso (Ranzani, 1988) che ha come oggetto il recupero dell'area, a cui ne seguì un altro nel 1988 dedicato solo all'edificio delle Murate. Seguendo le linee guida tracciate dall'architetto Renzo Piano, il progetto generale, curato da Roberto Melosi, Mauro Pittalis e Giuseppina Fantozzi (Ufficio tecnico comunale), aveva lo scopo di far rivivere questa parte di città semplicemente restituendo questi spazi abbandonati al tessuto urbano. Il rapporto diventa quindi biunivoco, infatti tanto l'ex monastero-carcere si è aperto alla città, quanto

la città si schiude nei confronti di questo complesso.

In questo passaggio si percepisce come la città storica naturalmente partecipi all'evoluzione-trasformazione della città contemporanea, attraverso il progetto.

Il tessuto urbano del quartiere S. Croce si estende oltre il perimetro murario del periodo comunale (1175) (immagine1), in una zona il cui assetto urbano cambia notevolmente nell'arco del XIII secolo con l'arrivo degli Ordini predicatori "che organizzano ex novo o ripolarizzano edifici religiosi già esistenti, oltre a figurare proprietari di gran parte dei terreni liberi subito esterni alle mura del perimetro del 1175" (Maffei, 1990).

In questo periodo le proprietà degli ordini si trovano in posizione marginale rispetto agli assi stradali che escono dalle porte delle mura, come succede per S. Croce rispetto via S. Giuseppe (Maffei, 1990). Queste edificazioni danno impulso alle espansioni secondo queste nuove polarità, condizionati dalle residualità territoriali fondiarie di epoca romana, risultanti dall'uso agricolo del territorio. Il tipo edilizio è quello presente anche all'interno delle mura, a corte mercantile, per la zona di prima espansione, mentre allontanandosi dal centro lungo gli assi territoriali è presente la tipologia a schiera. I percorsi principali di questa fase di espansione della zona di S. Croce sono via Pietrapiana, via di S. Giuseppe e via Verdi. In una prima fase vengono pianificate le strade di via dell'Angolo, via Ghibellina in senso est-ovest, via Buonarroti e via dei Pepi sull'asse sud- nord. L'edificazione in questa area è per lo più impostata sulla tipologia definita dal Caniggia a corte-schiera, che segna il passaggio dalla casa a corte mercantile, più presente all'interno delle mura e quella a schiera. "È questo interessante «anello di congiunzione» tra casa-corte, quindi domus, e casa a «schiera»." (Caniggia, 1990). Nella terza fase l'intenzione era quella di suddividere la zona con quattro assi seguendo la traiettoria sud-nord, in modo da formare dei lotti sulla dimensione della casa a schiera. Di questi quattro assi vedono la luce solo il secondo, via Allegri e l'ultimo, via de' Macci. Successivamente viene prolungata via dell'Angolo per collegare il centro con il quartiere attraverso via de' Pandolfi e via Dante Alighieri, ruolo che doveva assumere via Ghibellina ma che ha visto l'ostacolo dei Frati di Badia che "non volevano venisse diviso in due il loro isolato". (Maffei, 1990) (immagine2)

Analizzando più da vicino il complesso dell'ex Murate, si può ripercorrere le fasi della sua storia-trasformazione. (immagine3)

La prima fase risale al XIV secolo, quando in una casa su via Ghibellina viene insediato il primo nucleo del Monastero della Santissima Annunziata alle Murate. La lettura della Carta del Buonsignori (1584) permette di notare come l'area sia in espansione, il nucleo originario si è trasformato in un complesso più ampio, organizzato intorno agli orti. Da qui in poi la struttura vedrà due secoli di espansione, fino a che nel 1808 non viene soppresso il convento dalla legge napoleonica. Pochi anni dopo la struttura viene adibita a carcere minorile maschile. Al cambiamento funzionale non segue immediatamente un intervento architettonico, finché nel 1851, su progetto dell'architetto Domenico Girardi, non si avvia il processo di trasformazione dell'edificio. Il modello seguito è quello americano di Auburn, in cui la camera detentiva ha le dimensioni minime necessarie solo per il pernottamento del detenuto, il resto della giornata è improntata sull'attività lavorativa collettiva, svolta in totale silenzio. (Il sistema Auburn prende il nome dal primo carcere che seguì questo modello organizzativo-gestionale a New York.) Il sistema si sviluppa su un grande spazio centrale sopra il quale gravitano i ballatoi di distribuzione alle camere detentive. Da questo passaggio si può meglio comprendere come si intenda proporre una lettura evidente di come la conformazione spaziale dipenda da una idea di spazio, a sua volta vincolata ad un modello detentivo, organizzativo-gestionale. È del 1898 l'ampliamento con la conformazione a "Y", tipica del sistema filadelfiano, che a differenza del precedente si basava sul totale isolamento del detenuto sia durante la notte che durante le ore lavorative. Questa conformazione dichiara la sua discendenza dal sistema panopticon, in grado di trasmettere quel grado di solennità e gravità che spettava ad un'istituzione pubblica come quella del carcere. La psicologia sottesa a tale schema è quella del peso dell'osservazione, in qualsiasi punto il detenuto si trovi sente l'incombenza dell'occhio del sorvegliante. Il discendete diretto di questo meccanismo psico-fisico è l'impianto stellare, che del sistema centrale panopticon adotta il nodo centrale come nucleo distributivo. Da questo momento in poi la fisionomia del carcere è determinata. Nel 1983 l'istitutp termina la sua attività e si sposta fuori Firenze, a

Solllicciano, nel nuovo istituto appena costruito. Di lì a tre anni verrà bandito il concorso per il recupero delle Murate, 1986, che vedrà la sua realizzazione solo negli anni 2000. (Dambrosio, 2007)

Il concorso internazionale di idee per il recupero dell'ex complesso carcerario, richiedeva la ristrutturazione dei complessi detentivi ormai in disuso delle Murate, di S. Verdiana e S. Teresa. Per entrare in pieno nelle vicende del quartiere Santa Croce, protagonista di questo concorso, le parole dello scrittore fiorentino Vasco Pratolini, riportate nell'articolo di Ranzani, analizzano chiaramente l'area: "noi eravamo contenti del nostro quartiere posto al limite del centro della città; il quartiere si estendeva fino alle prime case della periferia, là dove cominciava la via Aretina, coi suoi orti e la strada ferrata, le prime case borghesi e i villini. Via Pietrapiana era la via che tagliava dritto il quartiere, come sezionandolo fra Santa Croce e l'Arno sulla destra, i giardini e l'Annunziata sulla sinistra. Ma su questo versante era già un luogo signorile isolato nel silenzio, gravitante verso San Marco e l'Università, disertato dalla gente popolana che lasciava i figli scavallare sulle proprie strade dai nonni d'angeli, di santi e di mestieri, nomi antichi di famiglie "grasse" del trecento…panni alle finestre, donne discinte. Ma anche povertà patita con orgoglio, affetti difesi con i denti. Operai, e più propriamente, falegnami, calzolai, maniscalchi, meccanici, mosaicisti. E bettole, botteghe affumicati e lucenti, caffè novecento. La strada, Firenze. Quartiere di Santa Croce." (Ranzani, 1988)

Il progetto riesce a rispondere alla necessità di trasformare le Murate in una parte integrante della città, facendola rivivere attraverso una grande varietà di funzioni che vanno da alloggi sociali, ristorazione, servizi culturali, commerciali ecc, rispettando il valore e la testimonianza del complesso.

Il punto di partenza del progetto è la preesistenza di un complesso che, come abbiamo visto, si è chiuso su sé stesso escludendosi dalla città a causa della funzione che assolveva. Significativo quindi il ruolo svolto dall'apertura del recinto su via dell'Angolo che apre la corte alla strada, diventando piazza. Di conseguenza i prospetti, che assolvono non più un ruolo interno ma un ruolo urbano, attraverso l'uso di bow-window, ampliano le residenze, aggettando verso la corte e "aprendosi" a piano terra, aumentando il livello di fruibilità della parte commerciale. Interessante è pensare che le parti aggettanti dei piani superiori in qualche modo richiamino il tipo originario della Firenze medioevale, la casa a corte mercantile: "lo sbalzo è una viva memoria della seriorità del primo piano rispetto al piano terreno, ed anche della mutazione di materiale, sotto di tipo murario-pesante, sopra di tipo ligneo-leggero, tipica di moltissime aree" (Caniggia, 1990). Il progetto apre un'altra prospettiva al complesso che è quello della percorrenza e dell'attraversamento. In questa nuova dimensione urbana, "le celle rimangono l'elemento volumetrico che organizza la progettazione" (Dambrosio 2004), questi nuclei elementari sono riconoscibili anche nell'attuale fisionomia dell'insieme. Infatti la loro tessitura è leggibile in pianta sia nell'edificio A, sia in quello B (immagine 4). Sempre in nome della logica che sembra ordinare l'intervento, ossia quella della percorrenza, l'edifico a ballatoio che divide lo spazio interno aperto (edifico A), si apre, quello che prima era il grande spazio coperto di lavoro nel sistema detentivo di Auburn, diventa strada, spazio comune e di socialità. La copertura dell'edificio viene rimossa, si leggono solamente i costoloni strutturali, i ballatoi diventano il percorso distributivo delle residenze e in questa maniera via dell'angolo e via Ghibellina possiedono un nuovo asse di collegamento. I lavori sono stati suddivisi in base ai finanziamenti europei (prima fase 2001, seconda fase 2004, terza fase 2007), grande importanza svolge quindi il ruolo del progetto generale, che nonostante la distanza di tempo intercorso tra un intervento e l'altro ha saputo mantenere vigile l'attenzione nei confronti della città. L'intervento non ha solo portato alla trasformazione del complesso in sé ma anche di un'intera parte della città di Firenze, il quartiere Santa Croce, costituendo così una nuova polarità.

L'analisi proposta evidenzia come l'edificio penitenziario, all'interno di tessuti urbani consolidati, possa offrire delle chiavi di lettura aggiuntive per comprendere l'evoluzione della città, città intesa come organismo costituito da parti, che riescono a sopravvivere, salvaguardando la propria struttura, attraverso le trasformazioni del penitenziario stesso. (Strappa, 2014) La struttura è il tipo. Le trasformazioni, un anello di una catena processuale propria della città.

Il motivo per cui un edificio come quello penitenziario che si è andato a modificare

a causa della sua determinazione e della sua funzione specifica, può ancora svolgere un ruolo attivo nei processi urbani nel momento della dismissione della sua funzione, sta proprio nel fatto che questa lettura non parte dal presupposto dell'esistenza di un programma determinato dell'edificio, ma dal senso di appartenenza che rappresenta e ha rappresentato per la collettività. Fatti urbani come manifestazione della vita sociale (Rossi, 1995). Scostandoci per un attimo dall'approccio al singolo manufatto, importanti sono le parole che l'architetto Michelucci usa nei confronti della sua proposta di "risanamento" del quartiere di Santa Croce, che come denunciato dallo scritto di Arigò "emerge, come pressante problema sociale e urbanistico, solo a partire dall'alluvione del 4 novembre 1966" (Michelucci, 1968): "ora, nella ristrutturazione del quartiere di S. croce, occorre seguire un pensiero architettonico [...] il quale, abbandonando ogni interesse episodico, trovi modo di esprimersi in una progettazione unitaria cosciente della dimensione storica di Firenze e degli avvenimenti 'culturali' (e non solo di questi) dei nostri giorni: dimensione che dovrà riflettersi nella morfologia della nuova città, caratterizzata da un nuovo spazio organizzato che consenta una vita associata ed individuale libera, ricca di risorse pratiche, intellettuali e spirituali [...]. Tutto ciò non significa rifiuto della 'tradizione' ma 'riscoperta' di quella variabilità e adesione alla storia che il passato ha sempre realizzato liberamente, conciliando i termini più lontani nel tempo e nello spazio, per cui il frammento archeologico e la struttura architettonica più nuova e 'rivoluzionaria' hanno dimostrato la 'solidarietà dei tempi'" (Michelucci, 1968).

Solo attraverso l'acquisizione di una coscienza sociale attiva si può accedere la livello della trasformazione, apprendendo queste strutture, si possono rendere parti integranti del processo di trasformazioni delle città.

Condizione della durata è la trasformazione, condizione della trasformazione è l'appartenenza, condizione dell'appartenenza è l'accoglienza, la città che accoglie e il progetto che accoglie la città.

Figure 1. Localizzazione del complesso delle Murate, perimetrazione delle mura che si sono succedute assieme all'ampliamento della città.

Figure 2. fasi di formazione del quartiere Santa Croce (XIII secolo).

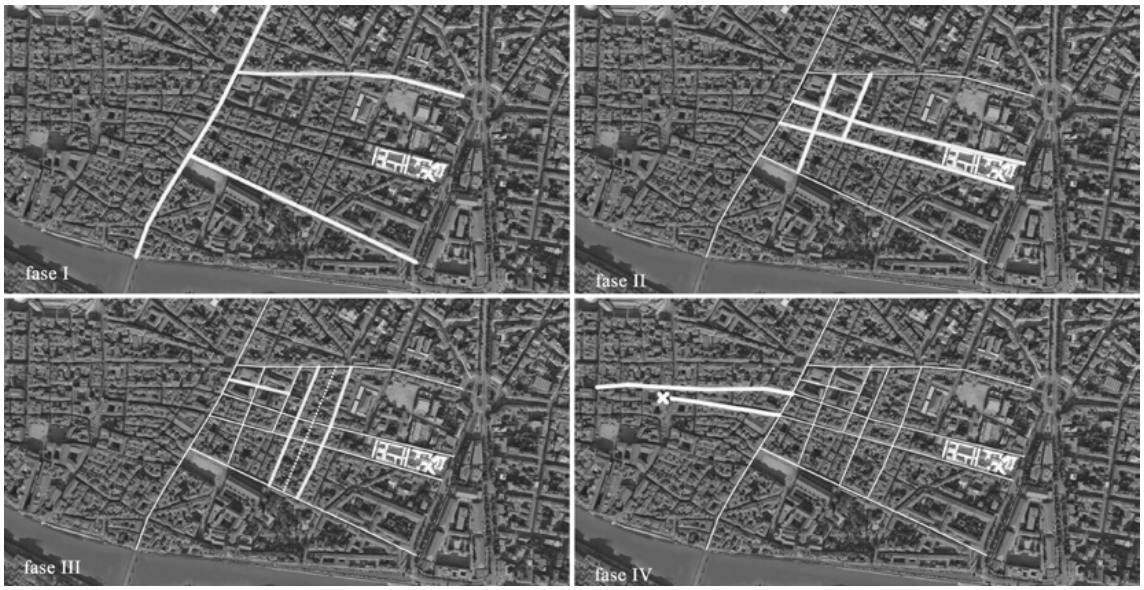


Figure 3. fasi di formazione del complesso delle Murate.

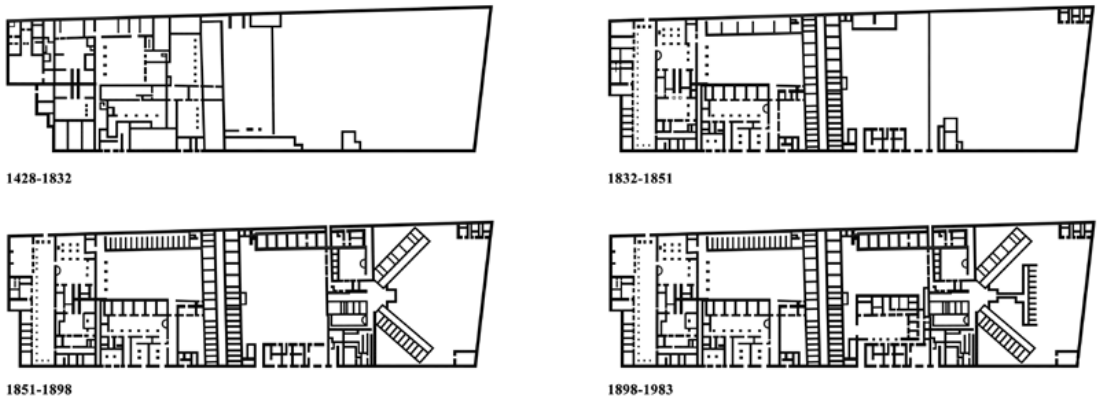
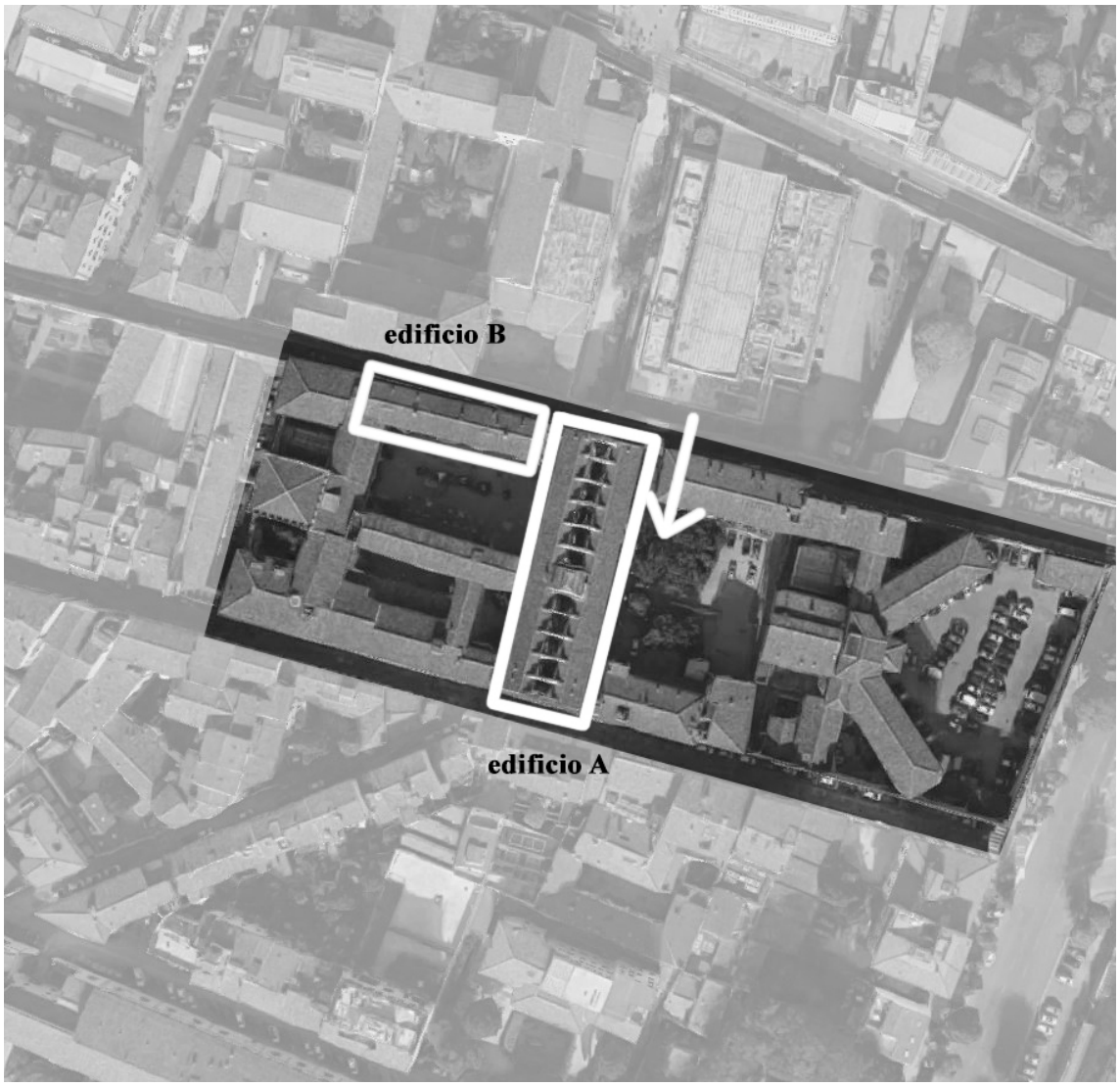


Figure 4. (stato attuale).



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A city written by the water and by the men. The example of Liège

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The morphogenesis of a city can be studied from two readings : the geographical framework, and the social organization that determines an urban organization that could be described as "intentionalist" based on a spatial segragation. Th example of the city of liège refers to this dual statement of a city written by the water and by the men; (essentialy linked to a religious organization). Located at the bottom of the valley, at the confluence of the Meuse and the Ourthe and mainly established on its affluent, the Légia, the river, subject to significant variations in flows, is punctuated by cataracts that make navigation complicated. These variations of the river, mean of transportation of goods and people does not prevent the establishement of a "portus". The presence of the waterchannels and numerous mill reaches, is at the origin of the establishement of many mills that provide hydralic energy, origin of a proto-industry. Water is also present in the fountains that feed the city. These fountains are at the origin of an urban organization of squares and publics spaces. After the Liège revolution (1793), from 1840 to 1880, the filling of the arms of the Meuse and the creation of the "dérivation" led to a major neighborhood improvement plan that allowed the creation of new public spaces and the establishement of a "park system". The containement of the river (1846) allows the control of the the whims of the river, by the construction of dams, and the creation of hallways wich in the twentieth century will be replaced by urban highways. The waters have drawn the city from the earliest times. In the middle ages are created neighborhoods that have not changed since the end of the end of the tenth century until the revolution, when the major works of dewatering of the arms of water, and rectifying the river were at the origin of a new urbanism on wich was added the twentieth cetury with its destructions.

Introduction

The city of Liège is born from the encounter between a site and a thought. The city is first written by waters whose technical and economic realities have shaped the face of today's city. Until the revolution of 1789, the urban history of Liège is also determined by a social organization centered around religious power. Liege is undoubtedly part of the organization of episcopal cities but has the feature of being from the origin the object of an organization at once social and urbanistic, a kind of social and spatial segregation, which will evolve little between the Xth and XVIIIth century and which is an "*unicum*" in the history of architecture and urban planning in Europe since the Middle Ages.

This paper analyzes the origin, the formation and the transformations of the city of Liège from this social organization and its distribution in the city.

Methodology

It is mainly through the reading of cartographic or photographic documents, and through studies by former historians or contemporary local searchers, Marcel Otte, Christine Renardy or Etienne Helin, or Dominique Iogna-Prat and his book "Cité of God, city of men ", Patrick Boucheron without forgetting the unavoidable Georges Duby, that I prepared this communication was prepared.

It is with the look of the architect who is interested in spaces and urban forms, that we tried to understand the evolution of the fabrics of the city of Liège.

We did not linger on the oldest periods, on the huts of nomadic families in the Neolithic period, on the ample Roman villa, "more closely related to the Meuse, to its control, to its administration than to a agricultural function, "writes Marcel Otte, neither in the first religious center with a first church dedicated to Saint-Pierre (Marcel Otte), nor in the modest hamlet that Saint-Hubert, successor of Saint-Lambert evokes under the name of "*villa quae vocatus leodio*", to devote our work to the long period from the end of the 10th century to the end of the old regime.

This work was made from a cadastral map preserved in the University of Liège's collections, dated 1828 and reproducing a plan of 1812.

Forming process

Morphology of the territory

Located at the bottom of the valley, at the confluence of the Meuse (river) and her tributary, the Ourthe and mainly located on the Legia, the city of Liège is surrounded by hills that will become the seat of military citadels. It is lodged in a meander of the Meuse, with wooded hills that provide firewood, or construction materials, steep hills, and rivers that run down the slopes. The bottom of the valley is a swampy plain crossed by the Meuse and its tributaries where are housed many islands which are drawing a landscape bucolic but also hostile because the river is punctuated by cataracts (falls) which make navigating complicated, and subject to significant variations in flow rates causing devastating floods. The great floods date from 1118, 1463, 1550 ... 1926.

Waters that draws the territory

Studies of water in medieval cities have long been the focus of historian's attention. These studies can be considered in three essential aspects: the perception of water by the population (danger, nuisance or wealth), rivers and canals as communication channels, and finally water supply and sewage disposal. out of the urban space. The waters are organized according to three systems that generate forms or natural or artificial. These three forms are common or non-routine runoff and create the hydrographic network. Next come groundwater, which is the sources that most often feed aqueducts or fountains. Among the groundwater there are waters which are the fruit of the industry and in particular of the

extraction of coal. These waters are extracted from the mine galleries and are the mine water.

Runoff waters

The "Legia" or the "Glain"

The first inhabitants of the city settle on a stream that first bears the name of "Glain" and will later take the name of "Legia" to which toponymists attribute the origin of the name of Liege. This stream runs down the Ans plateau where it has its source. Arriving in the valley it runs along the bottom of the hills to the north to throw itself into a sort of delta in the Meuse. The cradle of Liege must be sought at the place where the "Glain" escaping from the narrow neck which channeled it poured into the Meuse. The Legia, whose virgin waters served as fountains will see the quality of its water deteriorate as more and more buildings are built along its course.

The Meuse

Liege lies on the middle Meuse, which extends from Sedan to Maestricht over a length of 280 km. The middle course thus drains most of its tributaries which gives its basin a very characteristic aspect. Its width varies from 80 to 120m.

The regime of the Meuse has a variable flow. Its flow undergoes important fluctuations according to the seasons. Its regime is characterized by the existence of two hydrographic seasons, low seasonal warm waters and high cold season waters (Suttor) generating satisfactory seaworthiness?

The "*portus*"

From the high Middle- Age, even since Roman times, the traffic develops on the river, with an intensity more and more. In the 12th and 13th centuries, the merchants of the rich Mosan towns took part in a long-distance trade and frequented the English, German and French markets. Their routes take the river. At the end of the 13th and the beginning of the 14th century, the corporative movement developed and the first professions were formed. The boatmen *(naiveurs*) receive statutes in 1343. These trades set up an administrative organization with corporate assemblies.

These boatmen or workers carry goods of all kinds, building materials (slates, iron, coal ...), fuel, food (cheese, salt, herring ...)

Other trades are related to the river, the fishermen, the carpenters who build the boats, the longshoremen (loading) the wood merchants (*mairniers*) who sell the driftwood.

Groundwaters

In many episcopal towns, bishops and religious orders took charge of the water supply and the construction of the fountains (Boucheron and Menjot). The public fountain is undoubtedly the most clear statement of the ideology of the common good in all of Europe in the thirteenth century and is often the subject of considerable investment from the financial, artistic or technological point of view.

The sources

The natural springs of water appear numerous in Liège and abundant... They feed a part of the public fountains which are itself the center of the commercial places (three fountains market place, fountain of the Virgin, fountain of Saint Jean Baptiste ...

The springs of live sprouted on the hillsides in many places. Alas many of these fountains began to disappear with the destruction of neighboring forests and the development of the city.

The wells

In the old days many wells were dug near the collegiate, next to Saint-Lambert and in the homes of the rich laities. Some were dug in some public roads to be at the disposal of the inhabitants. The water was drawn directly with a rope on a wheel. These wells provided abundant but not always healthy water.

Water coming from the mines, the "Areines"

Since a remote age, coal sandstone has been used for the construction of stone buildings (religious buildings, the Notger Palace, the ramparts). However, these coal sandstone operations could not be practiced without encountering coal seams. The people of Liège know the coal from before the eleventh century and its properties. From the year 1195, the monk Reiner notes the discovery of coal in the soil of Liège.

Simple modes of operation were set up and the coalmen began to follow the coal seams in their underground meanders (Gobert) with the new problems that it generated because their trenches have neither landfills nor drainage slopes, were filled with water. When a well was in reach of a well-known vein, eagerness made them operate in every direction, and the water quickly filled the excavations left by the farm. A remedy had to be found to eliminate the water that accumulated in the galleries. To remedy this, excavation drifts were dug in the mountainsides and brought to the level of the nearest mining works. Care was taken to give the canal a very slight upward slope; Little by little, thanks sometimes to the use of long instruments or augers, by means of which one perforated, here and there, the massifs separating the various works, the vast majority of inland lakes disappeared. Such have been the salutary results of these underground conduits, which the people of the art have called Gobert's Areines. At the same time, many of these areines endowed Liège with new and fertile sources of drinking water which alone or almost alone fed for more than six hundred years, all or almost all the public or private fountains of the city.

Hydraulic force for mills

The richness of the hydrographic network makes it possible to shelter multiple ports, especially with cork, where the numerous arms of the two rivers draw a real delta where one can install Applés. From the beginning a series of flour mills settled on the Legia.

The mills, hydraulic infrastructures essential for the economy appear in the valley as of the second half of the twelfth century. The number of these machines is believed in XIIE and especially in the thirteenth century, both in urban areas and in the countryside. From the fifteenth century, the hydraulic energy applied to the iron industry led to a first technological revolution with the appearance of blast furnaces. But these machines experience a development quite extraordinary in the sixteenth century, when the use of coal as a fuel instead of charcoal produces the multiplication of furnaces and leads to the systematic use of hydraulic power.

"Classic" water mills are never installed on the river, but on small tributaries with a steep slope and less wide bed, like the Ourthe in Liege, which is equipped with many machines in the sixteenth century, or on the arms of the river. The very dense and very complex hydrographic system, allows a very extensive implantation of these "factories". Mills are built on diversion bays. In urban areas, it is observed that for technical reasons, the hydraulic wheels are built on tributaries. We never build a "Classic" watermill on the banks of the Meuse.

The bridges

The variations of the river Meuse did not prevent the establishment of an harbor "*portus*" along the quays of the "batte" or around the bridge called, "Pont des Arches". Despite the difficulties of navigation, the river is the means of transport of goods and people. The crossing of the Meuse or its arms is done by boat or by wooden pontoons. Three important bridges are built, but often destroyed by floods or by men and rebuilt. The most important are the "Pont

des Arches" built for the first time around 1030, the "Pont d'Avroy" which appears at the end of the 11th century, and the "Pont d'Ile" around 1196. Notger, prins bishop in 984, "brings in the center of the city, the waters of the Meuse that had previously flowed outside, "writes Christine Renardy., which makes it possible to occupy the lands located on the island and to survey a new district there. Two pre-urban nuclei exist where agricultural activities, but also artisanal and commercial activities develop as in the district of the street Neuvice. The market agglomeration was born. With the discovery of coal and its utilities, a new source of wealth appears. Coal has been known since the eleventh century. Although already present in the Roman hypocaust as heating fuel, it became the cradle of a coal industry as early as 1195.

technical problem which raises the question of techno knowledge

1. Social organization

The church and its organization

La cité après l'église, fait l'objet d'éloges propres à manifester la nécessité du contenant urbain pour réaliser le contenu qu'est la communauté en quête de bien commun. (Dominique Iogna-Prat, Cité de Dieu- Cité des hommes) Jean-François Coulais quoted by Dominique Iogna, put forward an hypothesis, of a passage, in the history of the medieval West of *du panégyrique (éloge) d'église au panégyrique (éloge) de ville, suggérant un lien génétique d'une métonymie à l'autre : d'un rapport église/Eglise à un rapport ville/cité, comme si l'engendrement sacramentel chrétien dans le bâtiment de l'assemblée trouvait un prolongement, ou pour le moins une analogie, dans celui de la communauté civique à l'intérieur de ses murs.* (J.-F. Colais, « Ville invisible et réalité virtuelle… »)

At the top of the hierarchy is the bishop. The bishop is elected by the chapter of the canons of the Cathedral. This chapter has up to sixty members from all the states of Europe. Bishops are sometimes of local origin but most often come from foreign princely families (Bavaria). The canons are from the local nobility but also come from European, Italian, German or French courts. The latter bear the title of canons subsoil because they are owners of the subsoil or as early as the twelfth century was discovered the coal that provides them considerable prebends allowing luxury trains of life.

Founded on the site of the assassination of Lambert (640-708), Liège is first of all an episcopal town. Professors Dumoulin and Kupper remind us that in 980 Notger obtained from Emperor Otto II a diploma of general immunity. He becomes "count" that is to say royal official. It was in 985 that he obtained from Otto III (980-1002), and his mother Theophano, County Huy. Notger (972-1018) thus obtains the temporal power conferred on him by the title of Count de Huy ... that is to say, an effective temporal power outside the episcopal city; it is the founding act of the country of Liège. Thanks to his temporal power he gets the right to raise walls. He builds the first enclosure, the castrum. By the end of the 10th century Eracle (959-971) predecessor of Notger, settled on the Publémont by building an "episcopal group" with a first cathedral Sainte-Marie and Saint-Lambert, a palace and two other churches Saint-Pierre and St. Lawrence. Notger in his suite begins a castrametation program, not installation of a camp as the name suggests, but construction of fortifications, completing the first enclosure that had already been started by Eracle.

From the end of the 10th century, Notger and before him Eracle initiated the construction of collegiate churches. Eight collegiales, which mark forever the urbanism of the city with the construction of encloitres and immunities that accompany them, are implanted in and outside the walls. Before the advent of Notger, four colleges had already been founded. Notre-Dame and Saint-Lambert had been erected on the site of the martyrdom of the saint from 714. It is from the 8th century that Liège reached the rank of civitas by hosting the cathedra. The first colleges are Saint-Pierre "basilica sancti Petri" (founded by St. Hubert in 727 and rebuilt in 922), Saint-Martin "in publico Monte" (Eracle in 965), and St. Paul in the center of the island " ante civitatem "(founded by Eracle who reigned from 959 to 971)".

In 1582, Louis Guichardin wrote in his "Description of all the Low Countries, otherwise called Lower Germany or Lower Germany. »wrtites about Liège : *« Cette cité est grande et fort ample et de belle étendue… on peut dire que Liège surmonte en nombre d'églises et*

en beauté et richesse d'icelles et de monastères et de conventz, toutes les autre citez de Gaule et de l'Allemagne tant haute que basse : d'autant qu'il y a huit églises collégiales, desquels les chanoines sont riches et magnifiques … Il est vray que nul ne peut être chanoine de cette église s'il n'est gentilhomme de race, ou bien docteur ou licensié et …Il y a quatre tre riches abbayes de religieux…Il y a trois maisons de religion de Dames et les quatre ordres des mendiants… et outre ce y a tant d'autres églises, monastères et hospitaux … on compte plus de cent églises ».

Notger builds a first large Romane cathedral that will survive until the fire of 1180 when it will be rebuilt. Many monasteries or convents and abbeys are built parallel. Contemplative Orders (Benedictines), Carmelites, Poor Clares, Military Orders (Templars), Mendicant Orders (Franciscan and Dominican) of the Preaching Orders and finally the Jesuits settle throughout the city and are at the origin of this urbanism that some have described as sacred urbanism. Many other institutions are located in the city and make the city of Liège a city of Clercs. Regular clergy (respecting the rule) or secular (priests ...) It becomes by the number of the schools, the Athens of the north but also the Heavenly Jerusalem... The cathedral, the collegiate churches, and the religious and administrative organizations which result from it, are at the origin of urban organizations that gave the medieval cities of the Holy Roman Empire, the face they still have today.

Many other monuments or institutions cover the territory of the city as commercial halls, and finally a town hall, long nicknamed the Violette where the burgomasters sit, representatives "elected" thirty-two trades (the bourgeois of the city).

The city will have a maximum of 50,000 inhabitants and will be regularly closer to 30,000 because of epidemics, famines and wars.

Marcel Roncayolo, historian geographer, writes: *: « Les structures de la société se projettent sur le sol et prennent une forme matérielle qui l'exprime et les cristallise à la fois. En écartant la recherche immédiate d'une théorie unitaire de l'espace urbain, cette lecture de la ville permet de souligner le caractère original de la division sociale de l'espace urbain. Cette division ne peut pas être traitée seulement en termes de fonctionnement et d'utilité. Elle doit être étudiée comme un phénomène qui explique la répartition spatiale des groupes sociaux.* »

The city is the result of multiple trial and error and the result of subsequent redevelopment. The morphology of the city is the result of planning that results in regular, simple and seemingly rational plans and organized landscapes.

However, what determines the urban organization are the canonical encloitres that make Liege an *unicum* in Europe in the Middle Ages. At the end of the 10th century, therefore, Notger divided the territory (city and bishopric) into three parts, the first of which was for him and his successors (familiares), the second went to the churches and the religious entities and the third to the knights (militares) who defend the city or the country (Poncelet E., 1885). This way of distributing the territory is similar to the "encellulement" theory developed by Robert Fossier. "The encellulement of men suddenly became widespread in the tenth and eleventh centuries; it is he who constitutes the essential social phenomenon of medieval times, ... " This division of the territory lasted until the end of the 13th century with the rise of the bourgeoisie and the appearance of the vicus until the middle of the 14th century. We are in the presence of a real spatial segregation, which confirms an organization of society based on a logic of class. From the sixteenth century the status of religious properties changed.

The city of Liège is well organized in territories allocated to different castes of society.

a. The area surrounding the palace is reserved for the bishop's familiars with a large plot.

b. The areas along the walls called "Hors château" are reserved for the defendant nobility of the city. André Joris speaks of a new "burgus" occupied by the "castrenses" and whose large properties will remain the privilege of noble families until the end of the old regime.

c. The religious territories: from the beginning of the twelfth century, the rights of the different religious communities is in place, namely the large territories of abbeys, the canonical encloisters or immunities of colleges, parishes, monasteries ... Each of these convent districts was protected by means of his own wall (Gruber K., 1952.)

d. The interstitial zones are composed of "vicus" where the bourgeois and the merchants settle on a narrow and XXX

The Urban organization from the eleventh until the eighteenth century
The public square in the medieval tissue

In this seemingly chaotic juxtaposition of ecclesiastical domains, something new appears which represents not only the backbone of later evolution and the vital center of the economy, but also a planned form of urban planning. is the market. Most of the old city plans show that the city is organized around the market place. One could add that the construction of fountains contributes to the birth and the progressive organization of the public space. (Deligne C., 2008) Fountains are an integral part of the constitution of public spaces and the making of identities. Guichardin speaks of the urban fountains of Liège in these terms: Liège has "many bright and clear waters in such a large quantity that we can see everywhere beautiful and fresh fountains". It is a constant: the widespread association of the big fountain with the big market.

The marketplace in Liège is organized around three fountains and is surrounded to the south by the city hall (la Violette), by the choir of the cathedral to the west and by the proximity of the palace to the north. It is the political, social and economic center of the city. According to Gobert, it precedes historically the Old Market located in front of the palace at the time of construction of the townhall in the XIIIth century.

The canonical encloitres

It is regrettable that Helin affirms: "… *une des caractéristiques de Liège avant la destruction de la cathédrale Saint-Lambert est la médiocrité des places publiques* », while the city of Liège has many places often raised and lined with patrician residences. These places are always close to the old collegiate and are the spaces of the claustra encloitres.

If the subject of the collegiate and the canonical encloitres is a subject that has been treated for many cities of Europe and in particular in France with the work of Jean-Charles Picard on the topography of the canonical districts, or the work on the architecture of German cities, this material has not been developed or developed for the city of Liège. Collegiate churches have been analyzed and studied as monuments, but they have never been put back in their urban context.

The canonical encloitres, like all the great ecclesiastical territories, belong to "urban domains". These are described in detail in Edouard Poncelet's study.

The Encloitres immunities were subject to special jurisdictions. Secular urban realms enjoyed an eminent privilege: immunity, one of the characteristics of which was the liberation of all justice, whether secular or from the ordinary ecclesiastical. This right claim to forbid, in their claustral territory, any interference of a foreign organization. Churches and their cemeteries (atrium) serve, under immunity ratione loci, refuge in case of danger. Moreover, the buildings belonging to the Canonical encloitres were subject to the laws of the Allodial Court and were struck by mortmain, that is to say they could not be ceded since they belonged to a religious community.

In his study of the urban landscape, Etienne Hélin describes these "cloister houses" as follows:

As the name suggests, they are found mainly in the immunized territories of the cathedral and the seven colleges. They are characterized:

a. *By vast dimensions of the plot ... covering more than 3000 M2.*

b. The parcel plans suggest massive buildings, many of which are arranged in a tight order around a central courtyard. It is the "hof" that German historians have endeavored to relate to certain types of rural farms.

c. The grouping mode is also constant. Instead of lining up along a path, the cloister houses surround their church on three sides and many are established on the edge of a small square. The proximity of a rampart of enclosure are other traits that affirm the kinship of these islands of settlement installed however in very varied sites.

d. The occupants of cloistered houses almost all belong to the patriciate. If there was not once a large residential area, it is because the eight immunized territories, with their spacious hotels ... offered a place worthy of their rank to the nobles, the ecclesiastical

superiors, the holders of the highest offices ...

We are thus in the presence of a transformation of existing urban centers into legally and spatially organized cities like the German cities.

The urban organization after the demolition of the cathedral

A new world is being born on the ashes of the revolution. A new caste replaces the temporarily rendered one prevented and a new city is invented, created, carried by new techniques, a scientific engineering, and inventions that upset this world so immobile for eight centuries.

In the modern and contemporary architectural guide Rita Occhiuto writes: " *Prise dans sa dualité la ville ceinturée, garde jusqu'au XVIIIe siècle, les marques de chaque élément du paysage précédent. Ces traces s'effacent dans leur singularité sous les coups d'une action étalée dans le temsp qui assèche et soude progressivement chaque particule flottante du paysage insulaire. L'ile du centre, soudée sous l'étreinte du bras de Meuse et des murs d'enceintes, garde d'autres types de traces évoquant les organisations communautaires et les découpages précédents : les églises.* "

In the mid-nineteenth century, the discovery of electricity and the means to store it, the steam engine, the engine, are all discoveries and inventions that will revolutionize the world and without which google and other Facebook would not exist today. In medicine, the discoveries are dazzling and allow important advances in hygiene and lifestyles. The city is transformed by all these novelties.

The arms of water had become channels or stagnant foul waters and where the Ourthe was still creating many disorders and abundant floods in the city center. It was therefore necessary to clean up the city.

The plan of 1828 shows that the arms of the Meuse de la Sauvenière are partially filled as well as the part of the torrents, this area of very complex reaches and arms near the university and the island Hochet. These old filled arms will become two important arteries, the street of the university towards the university place of culture and the street of the Regency connecting the quays to the opera place of leisure.

The widening of the traffic lanes will lead to an elevation of the building.

Conclusion

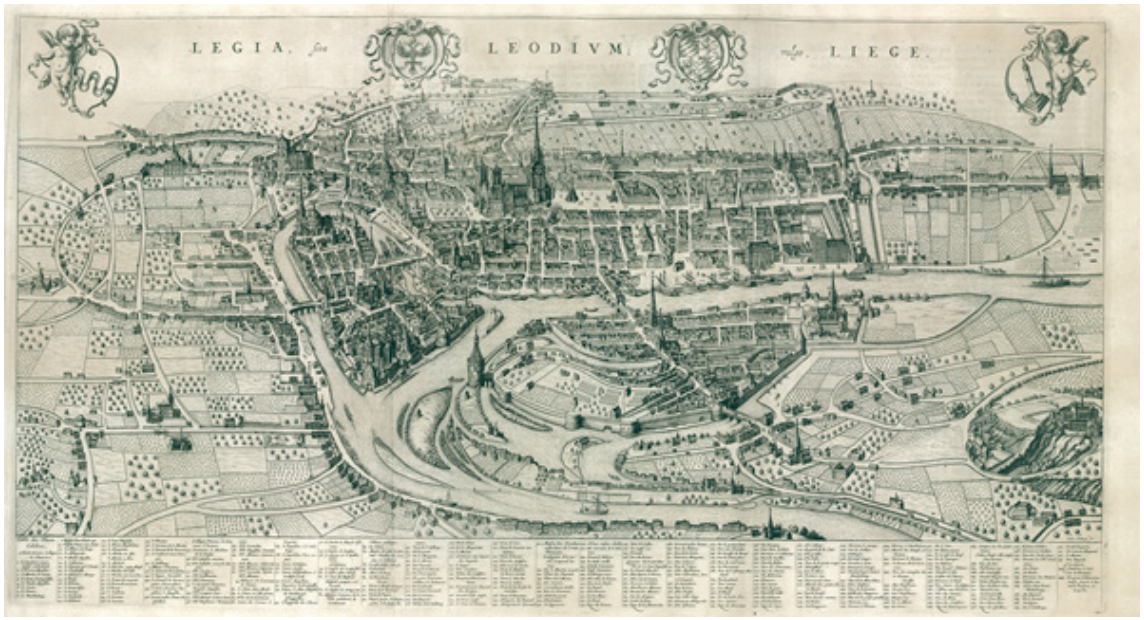
For almost a millennium have succeeded original urban forms whose characteristics specific may be reduced to the characteristics of a model (Boucheron and Menjot). Formations that fit on the ground in a particular topography, are printed in a structured society, expressing itself through institutions and resulting in a kind of life and culture. The urban development of the city of Liege is characterized by an immobility of its social organization and urban organization since the reign of Notger until the end of theeighteenth century.

This organization, besides reflecting a complex and unique social organization, was subject to the presence of water and the topography of the site. The river is a fundamental element in the internal communications network. This involved navigation and the presence of infrastructure with bridges and watercraft as the building blocks.

From the end of the eighteenth century, the great damming works of the Meuse completely transformed the face of the city and the twentieth century was not left in the modifications with the obsession at all to the automobile the seventies and the concomitant aggressive speculation that destroyed much of the heritage in the name of the greatness of the city.

If we wanted to present the case of Liege, and its urban history, drawn by a site and determined by a social organization centered around the religious power, then later around a power bound to the bourgeoisie, it is in the to show that despite globalization, the tissues remained unchanged, immobile from the middle to the twentieth century.

Figure 1. Wenzel Hollar, *Legia sive Leodium vulgo,* Liège 1649; **2.** Plan de la ville de Liège dressé en 1812 (1828) : immunités. Redessiné par P.H.; **3.** The port of Liège "*portus*" Drawing by Philippe de Hurges (début XVIIe) Manuscript at the BNF Paris; **4.** Dessin aquarellé de Louis Dreppe : vue de l'île de la Boverie. Fin XVIIIe.



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Detecting the non-existent: knowledge, analysis and reconstruction. The Campitelli district and the demolition of the late nineteenth century

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Rome is a city extremely complex because of the millennial stratification and overlapping of historic buildings. A compact urban and sinuous fabric. However in some cases this property was ripped open by demolition, sometimes necessary, but often quite invasive. The virtual reconstruction of the cleared areas is a topic of great relevance to the preservation and knowledge of cultural heritage. The study area is the one at slopes of the Campidoglio, which was demolished at the end of '800 for the construction of the Vittoriano and the open space of Piazza Venezia. The detailed archival research, digitization and the meticulous virtual reconstruction make this research important from many points of view: knowledge, media, museum, but most of the historical memory recovery.

The project presented here, still under development, born from overcoming these limitations through activities aimed at utilization of the potential of IT and digital way to develop new research directions. Especially trying to achieve two specific objectives. First, the three-dimensional modeling of significant parts of the historic city, especially those portions of the city that were demolished in the demolition previous six centuries. Secondly the definition of digital urban museum tours, which are useful to understand the state of the places before the demolitions.

For this reason we decided, given the minutia of details of the reconstruction, to introduce the term "non-existent survey". The Cadastre Pio-Gregorian, first general register of the Papal State on particle base, has been the main reference for the recomposition of the original urban fabric.

Objectives of the contribution, general themes, state of the art

Scholars have an image of Rome as the depositary place of artistic and architectural values of extraordinary importance, and the Eternal City is a destination of each trip (real or intellectual) that those values want to draw. However, although paradoxical, it is very difficult to fully know the city because of the millennial layering of architecture, to which is correlated an incommensurable iconographic apparatus, difficult to disclose or easy to access.

The consultation of the archival documentation is strictly bound by making it difficult for the scholar to access the material, which ultimately has access only to a small number of documents.

The project presented here, still under development, born from overcoming these limitations, through activities aimed at utilization of the potential of the digital and informatic tool to develop new research directions. Especially trying to achieve two specific objectives. First, the three-dimensional modeling of significant parts of the historic city, especially those portions of the city that were demolished in the demolition previous six centuries. Secondly the definition of digital urban museum tours, which are useful to understand the state of the places before the demolitions.

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It is possible, from a careful reading, to identify the overall urban structure and to realize how different it is from the current state. The area that includes the Vittoriano Monument, the northern section of the Capitoline Hill and Piazza Venezia, which today presents itself in a consolidated form, in the Gregorian Cadastre reveals itself to be rather dense and notably built. Throughout the nineteenth century the whole slope was occupied by low blocks, the district of San Marco was developed towards the west crossed by a complex system of alleys.

The urban ensemble emphasized the position of privilege that had the square of Aracoeli and its buildings, the Capitoline palaces and the Church and the Convent of the Aracoeli. Lay on a solid stepped system on which the conventual buildings were located and then gradually all the others too. Small and medium-sized buildings that will form several rings that gradually recovered the share of the San Marco district. (Fig. 1).

Methodology used, results achieved, innovative aspects and original features

Especially the virtual reconstruction involved, at least for now, the alessandrino district, demolished in the 30s for the construction of the Via dell'Impero, and the slopes of the Capitol, the area adjacent to the first and affected by earlier demolition (late nineteenth century) due to the construction of the Vittoriano and Piazza Venezia.

Both cases are of extreme importance, because they are characterized by the complete loss of historical artifacts of great historical value - artistic, and even, in larger scale, of a typical Roman street fabric in favor of wide boulevards and plazas longer comply with European visions, like Paris or Vienna. For the purpose of virtual reconstruction are essential all documents relating to the blocks demolished. It is in fact clear that a significant portion of the research is related to the only search, cataloging and subsequent vectorization of these documents, which can then flow into the reference GIS.

It is clear that the GIS should, by necessity, foresee a further development in the computerization of the updates of the future Gregorian cadastre, but at the same time it will be essential to increase the number of the cards on the city building, with the insertion of new and digitized documents from the "Title 54" fund of the Capitoline Archive, which includes the projects and licenses of the historic city buildings renovated during the nineteenth century. To this end, it is necessary to vectorize the 79 update tables of the Gregorian Cadastre, for demolition / reconstruction works, to update the digitization of the related brogliardi, whose updates show a clearer picture to 1873, and finally to create the new cards of the past 2000 drawings of the fund "Title 54" and connect the same cards to each other.

Among the many research itineraries opened by the predisposition of the GIS Descriptio Romae is that of the three-dimensional modeling of more or less extensive parts of the city,

especially those that have been lost following the demolition of the last two centuries. Starting from the importation of all the data of the nineteenth-century cadastre into the GIS, it allowed a detailed knowledge of the number of floors of each building and, with it, of the specific characteristics (surface, intended use, cadastral income) of each cadastral parcel and of each of his "subaltern". (Fig. 2).

To this first base we must add that for an ever-larger number of such buildings it is also possible to consult the project drawings (often aquarelles and complete of ante and post operam status) which determined the nineteenth-century transformations that were indispensable for the scientific reconstruction of lots, in the correct modalities for virtual reconstructions. To all this documentation is added also the secular iconographic documentation (with the calligraphic views of Vasi, van Wittel and Pannini to the watercolors of Ettore Roesler Franz, up to the graphic restitution of the Moschetti) and of the vintage photographs they have also allowed (and will allow) to carry out many unpublished modeling of particular building complexes in the historic center of Rome. Among the possible reconstructions, we must remember first of all that of the Alessandrino district, in the central archaeological area, which was the subject of years of research and studies, and that led to the creation of a complex, modular and attractive plastic wood exhibited at the Museum of Rome with inauguration on 28 March 2017. The collection of materials was fundamental for the research; the views, the drawings have been cataloged and compared with the archival documents; the crossover of data has led to an interesting interest. The reconstructions from the scientific point of view are verified and verifiable with the data from the research and manage to represent an architectural and urban situation no longer existing. The area concerned presented in this article is of particular importance, because its demolition in favor of the "Vittoriano" has radically changed the appearance of the area, creating one hand a monument out of scale (compared to building Roman) objectively criticized by historians, and on the other, in contrast, an important urban void with no special features but to traffic islands. In exchange, the cultural heritage has lost numerous examples of historic architecture such as the convent of '"Aracoeli" which remained the only church, the papal passageway that slips in between the buildings of the urban fabric, noble buildings (Fig. 3).

The characteristics of the area makes it particularly suitable and scientifically challenging for a virtual reconstruction that will return the centennial structure changed only a century ago, and possibly allow the usability of the three-dimensional model even at a large scale…

As in many of the buildings for which it found the archival material, the only plan on the ground floor was present, it was thought appropriate to work on two parallel tracks: on the one hand the plans, on the other prospects which, although not perfectly alignable with related plants, they are the basis for the three-dimensional reconstruction. In fact, for three-dimensional reconstruction it is preferable to follow directions in the prospectus (where you will find more information on moldings, frames, doors and finishes).

If, however, were not present archival documents that represent the elevations of the buildings, these have been reconstructed exactly starting from plants whose dimensional information and placement of the openings has allowed to create at least a prospectus scheme.

For cornices, string courses and other moldings usually present historical building has been relying on the common practice of the time dictated by historical and even treated to typological analogies.

Finally, there are many cases where the archival material is completely absent, and the only information available are those based upon the Gregorian Cadastre and corresponding brogliardi. These are the most complicated cases, and where the interpretation for the virtual reconstruction is crucial. At the time the particles without documentation were simply represented as volumes, waiting for processing in the near future, which would give rise to the formal aspect according to the typological comparison and thanks to Caniggia studies and other colleagues who have analyzed the housing case studies of Rome.

The virtual reconstruction of the blocks before the demolition proved complex and meticulous and, congruently with the already described 2D digitalization, multiple degrees of architectural detail.

A three-dimensional modeling of detail, to a scale of 1:50, for all the buildings that had extensive documentation, in order to show the appearance probably closer to reality, the relationship between the facing buildings, the structure of the street fronts, the relationship between solid and void and consequently the road system that has been lost (Fig.4).

The city of Rome can and must be remembered in all its phases of transformation, its architectural riches and its history are a heritage that cannot be forgotten. The area between

the Capitoline Hill and the current Piazza Venezia taken into consideration by this research, is one of the most complex areas of the historic center of Rome, the events of the area still today have not been fully clarified. In the texts that have the opportunity to deepen and study the area, many of the events before demolitions are revealed, even if some aspects on the modalities and the various urban structures are not yet completely clear.

The interest in knowing the original structure and the historical events that were no longer visible was the motor of research and the three-dimensional reconstruction of the final objective. Representing the area still occupied at the time of the beginning of Roma Capitale, from the Benedictine monastic complex and then later of the Aracoeli Franciscans, and the district present in the lower part, both demolished with the construction of the Vittoriano, brought the group of research to hypothesize an extension of the boundaries taken into consideration by the research.

The current configuration of the area leaves very little of the previous urban context but reveals a further interest in the area that the Via dei Fori Imperiali aspires, an interest that the Departmental research could carry on with the Capitoline Superintendency with the aim of reconnect some areas already developed and reconstructed in previous works.

It is important to create only one IT platform, in the direction of GIS, which contains both the knowledge relating to the buildings of the historic city, but, going further, also any works of art contained in them, especially in museums, churches, or Art gallery. In this way, it will be easier to create specific museum itineraries with access to the entire database provided by the Web GIS, focusing on different themes, easy to consult, virtual support, integration and knowledge. The platform will therefore be an indispensable tool that, when questioned, can provide quick, extended and integrated answers, in order to avoid the current difficulties for scholars in accessing paper archival documentation.

Detecting the unreal. Theory and Practice for dimensioning and measuring demolished buildings and urban fabrics. (D.C.)

Survey something that no longer exists is undoubtedly one of the most complicated tasks to carry out. In fact, measuring and knowing architecture is an operation that is carried out on the work being built. In the reconstruction of the Piazza Venezia area in Rione Campitelli we faced this problem when it was decided to proceed with a greater detail in the public, ecclesiastical and residential buildings of the urban fabric demolished in the late XIX sec.

The first phase was the digitalisation of the information only on the icnographic view, using the plan of the Gregorian Cadastre, divided into multiple sheets. All of them have been scientifically mounted and deformed for characteristic points through a georeferencing process with current coordinates. This process was necessary to compare the road layout before demolitions with the current urban void of the square. It was possible to digitize all the cadastral particles only after the raster plans were deformed. For a more precise work, it was necessary to check both available cadastral plans. The first, the original of the 1824, made by architects and engineers based on the Nolli plant of 1748, has certain dimensional features, but lacking the position of the inner courtyards. The second, the land registry updates of 1871, shows changes of the courtyards of the buildings and also corrections of the state of the facades, as well as the updating of the mutations over the fifty years on the urban fabric. At that time there were numerous projects, partly documented by building concessions, with changes on elevation, mergers and consequent stylistic modifications, related to the transformation of houses, often joined in palaces with a richer architectural lexicon and consistent with the status of the families' owners. The grid height values were find out starting from the Gregorian cadastral particle. The layout of all the roofs have been reconstructed in the two-dimensional drawing, and then also the respective slopes or terraces, following the rules of the bisectors of the angles and duly verifying each particle with available historical photographs. Considering the gradient of the 20% for the slope, according to the Manuale del Recupero di Roma, it is also possible to obtain the top lines. The reconstruction was made of also thanks to the archival documentation, when it was possible.

However, the information contained in the Gregorian Land Registry, and despite the considerations made on the working method for determining roofs and terraces, would have allowed a virtual model limited to the basic volumes, with at most the pitched roofs. This type of reconstruction was not in line with the established aims, ie to obtain a three-dimensional model that could reproduce the features of the nineteenth-century urban fabric, in the study area, even up to a 1: 1 detail.

This hypothesis could be guaranteed if sufficient archival documents were available for

the philological reconstruction, but can also be extended to other cases of buildings without historical documentation through a typological similitude process (Fig. 5).

In the detail reconstruction of non-residential façades, the problem to be solved was to recover the measures in the absence of archive documents, which generally concern and predominantly private construction. The cases studied and the paths followed for the search of dimensional data were different, on a case-by-case basis.

The first case concerns those architectures where only photographic documentation is present, and the only dimensional data available is the width of the facade calculated from the Gregorian cadastral parcel scaled. We proceeded with a double process, starting from this single known measure: a prospective restitution of the historical photo with the recognition of the horizon, vanishing points, the ground plane, and the respective trace line of a vertical imposed plane, in order to recover all the unknown altimetric dimensions; after this and having at least two plan and elevated quotes, it is possible to handle the image with RDF, a software specific for photo – straightening, and get the front elevation that can be traced in CAD. In this way, it was possible to digitize the facades, scaled and dimensioned in a scientific way, of buildings that no longer exist.

In other cases, however, archive documentation was present and was essential for the virtual reconstruction of individual artifacts. The process of digitizing archival documentation has led to the two-dimensional bases for the realization of the 3D model. The correct workflow has already been dealt with, and regards the ways of proceeding with reconstruction, with an almost restorative focus, in the face of more or less incomplete archival sources (Fig. 6). The approaches are a gradual reconstructive hypothesis, from the most likely, in the presence of each document, to the philological ones by typological similarity with respect to similar examples in the Roman study area.

Finally, the last method was the photomodeling, used for existing buildings, as for the three-dimensional reconstruction of Santa Rita. This is a special case, because it survived in an anomalous way to the demolition of the area. In fact, the church on the slopes of the Ara Caeli, has been dismantled brick by brick, and reassembled in its current location, not far away, at the beginning of Via Montanara. Of this latter example, after a photographic campaign, it was made the 3D digital modelling and from it an orthophoto of the front elevation used for the two-dimensional traceing.

The detail achieved for the facade of buildings, churches and monumental emergencies is such as to give the model an effective plasticity while at the same time evoking a lost historical image with the demolitions of the late years of XIX sec.

The reconstruction of a varied and complex orographic set of this central area was one of the most difficult aspects. Very few authors over the centuries have found the altitudes of the terrain and above all for the central area, Piazza Venezia and the Campidoglio Hill there were unrelated constraints: the millennial stratifications alternate with different dimensions, those of the excavations, the gardens, and finally those of the streets and inner courtyards.

There are many unique architectures in the demolished area, such as the Palazzo San Marco, also disassembled and reassembled in a different position, to open the square and give it greater breathing space. But undoubtedly the most radical change was carried out with the total demolition of the entire convent on the Capitoline hill adjacent to the Ara Ceali church and the Papal Palace, to make room for the construction of the Vittoriano. There are countless archival sources that highlight a historical stratification and an unprecedented orographic complexity (Fig. 7).

The Capitoline Hill was circumscribed by the road fronts on Via di Marforio and Via della Pedacchia (towards the current Piazza Venezia), with rather high dwellings, which concealed the complex system of terracing behind them, with stairways, ramps, buttresses of containment and structures of the papal complex lost. A listed and detailed plan before the demolition, dated 10 November 1882, made it possible to clearly understand the state of the places in the neighborhood, providing important information on the altitudes of the streets that surrounded the hill. Other documents, already described above, complete the framework for the reconstruction of the complex system of the Capitoline hill: plan of the relief of the area with the flush of the blocks (ADMVE, P 51), the plan with the ground connections of the buildings on the streets below the hill and its respective properties (ADMVE, P 52), the plans for the various portions of the Aracoeli convent (ASC, Private Contracts, 1876, part II 10/7) and an important section useful for clarifying the terracing system (ADMVE , P 2 and P 34).

Combining these more general documents, with the elaborations of Title 54 and the icnography of the individual buildings, it was possible to reconstruct both the different levels

of the buildings that were located on the hill and also the houses on the slopes and the system of terraces. The general plants, including that of the Gregorian, allowed a synoptic control of the masonry axes, and verify the adherence with the plans from time to time adjacent.

In addition to the two-dimensional works, in which the sections play a fundamental role, the iconographic sources have also been relevant for the understanding of the three-dimensional state. Numerous pictorial views, prints or engravings and vintage photographs allow us to understand the overlapping of the architectures, one on top of the other. The hill was dominated by the convent and the papal palace and the tower of Paul III of which there are floor plans of all floors, fronts and many archival images. Thanks to the wealth of documentary material, the modeling of the Capitoline Hill area was rather careful and precise, trying to avoid subjective interpretations as much as possible. Surely there are still gaps in the model, mainly due to the difficulty in managing the terraces and the distribution and subdivision of properties on the steep slope of the hill.

Although the situation of the Capitoline hill was undoubtedly difficult for virtual reconstruction, this does not mean that the same methodology has not been applied to the rest of the 3D. There are examples of excellent quality architecture within the urban fabric. The Palazzetto San Marco in its original angular position, the passage - overpass that connected the Palazzo Venezia to the Papal Palace, Piazza Montanara, the Piazza San Marco enclosed between blocks of buildings. Within each isolated building that, thanks to the archival documentation, could be reconstructed in their details, in order to show their particular value at least in the virtual reality.

To allow the total vision of the imposing Vittoriano that had to rise right on the Capitoline hill, it was decided to obtain a large square in front of it, in the likeness of large wide spaces created in many other European cities. This decision, in addition to providing for the demolition of all the blocks above and on the slopes of the Capitoline hill, also led to the change of the ancient Palazzo Venezia, whose Palazzetto San Marco, which once closed the homonymous square, was disassembled brick by brick and rebuilt in the opposite corner. A rather bizarre choice given the amount of demolition planned in the area. The same fate, as we have already said, touched the church of Saint Rita.

The demolition has brought a great loss, not only from the architectural point of view, but of the same urban fabric, with spaces and squares of social gathering that for centuries, or perhaps millennia, were experienced by the Romans. Many paintings and watercolors, like those of Ettore Roesler Franz, show the atmosphere of these lost places. Among these spaces one must remember Piazza Montanara, towards the theater of Marcello (outside the current study area), and Piazza di Aracoeli. The latter had a narrow and elongated butterfly configuration, closed on the two long fronts by the buildings of the San Marco quarter on one side, and by those of the Roman Ghetto on the other, which fortunately survived the demolitions. The short sides of the square are closed by a small block towards the Campo Marzio, and by the steps of the Campidoglio and the Aracoeli that give the square a unique aura of monumentality that no other square had in Rome or elsewhere.

The demolition of the blocks of the San Marco district has left a huge urban void, partly filled by gardens that turn out to be more of a traffic roundabout. Piazza in Aracoeli has completely lost its connotation, and the fountain, which was in the middle, has also become a simple urban ornament within a small driveway roundabout (Fig. 8).

Via dell'Arco di San Marco and via Giulio Romano are to be mentioned along the streets of the urban fabric. They were two streets that ran parallel to the slopes of the Capitoline Hill, home of the city administration, and Piazza San Marco, whose name derives from the adjacent ancient basilica of the same name, and which was renamed Piazza Venezia since the early 1900s. Here the Venetian Pope Paul II built his family palace, divided into two separate buildings: Palazzo Venezia and the smaller Palazzetto Venezia, located on the western side and at the end of Piazza San Marco respectively. These buildings were connected by a flyover that reached a high-altitude terrace of the Papal Palace on the Capitoline Hill. The passage created two picturesque arches just above the Via di San Marco and Via Giulio Romano.

Via Giulio Romano, however, although parallel and oriented in the same direction as the previous one, followed the base of the Campidoglio. It originated near the church of Santa Rita and reached the arch, where it changed its name to Via Macel de 'Corvi, whose name derives from the old butcher's shop, and where the famous Michelangelo Buonarroti lived in the 16th century. Before 1870 via Giulio Romano had the toponym of via della Pedacchia that derived from the name of a wealthy family who owned a building that once stood there, now disappeared like the rest of the neighborhood.

Today, the area where the old quarter stood is nothing more than a single large square, on which the enormous bulk of the Vittoriano monument rises. Nothing remains of the two streets, and of the San Marco district, where Roesler Franz sat with his brushes

Conclusions and future developments

There is almost poetic aspect in the decision of these odds, small data has consistently formed, with great difficulty to give us an almost unified vision of the architecture and orography of the area.

All these suppositions and reconstructions have been agreed with historians, geographers and above all with Capitoline Superintendence, indispensable reconstructions to correctly place the manufactures shaped in urban space. Thanks to the synergy created between the Department and the Superintendence it was possible to effort in a complex work like this, reaching a long-awaited goal.

Ror a number of years, the Department of Architecture had a convention with the Archaeological Superintendencies, that brought to a first result, i.e. the realization of the plastic of the portion of the city of the central archaeological area and Alessandrino district, that was next to the one analysed and explained in this paper. And in fact, this collaboration will have further developments, and are already planned for next year, insights and applications in the adjacent area. Given the mutual interest in the reconstruction of the Roman building fabric, it is thought to go to implement the work already done with further studies aimed at analyzing, studying and then rebuilding the transformations of the entire area of the historic center of Rome (Fig. 9).

The Roman urban fabric, which has survived for centuries, has undergone profound changes, demolitions and losses in the last two hundred years. The need to raise the new capital of Italy to the rank of European city, the fury of the fascist regime, the hygienic needs, the urban expansion, were just some of the triggers of change. The image of the city, from the banks of the Tiber, to the central archaeological area, from the villas and gardens to the system of small streets and alleyways, was lost. Today, through the new technological and communication possibilities, it is possible to show the immense architectural and landscape heritage. Not only can we imagine virtual tours, through educational paths thanks to new VR technologies, but, just in front of the reconstruction project already realized with a wooden model, it is our will and the administration to add wooden blocks to the basic model, to to achieve the internal urban structure, before the demolition, of Rome inside the Aurelian walls.

Figure 1. The Gregorian Cadastre with the Capitoline Hill and the San Marco district. Overlapping the rendering of virtual reconstruction; **2.** Some comparisons between historical documents and the 3D model: a) The Falda plan of the whole study area; b) The printing of the Vasi for Piazza San Marco; c) A vintage photograph of Via Giulio Romano at the entrance of the Aracoeli staircase.

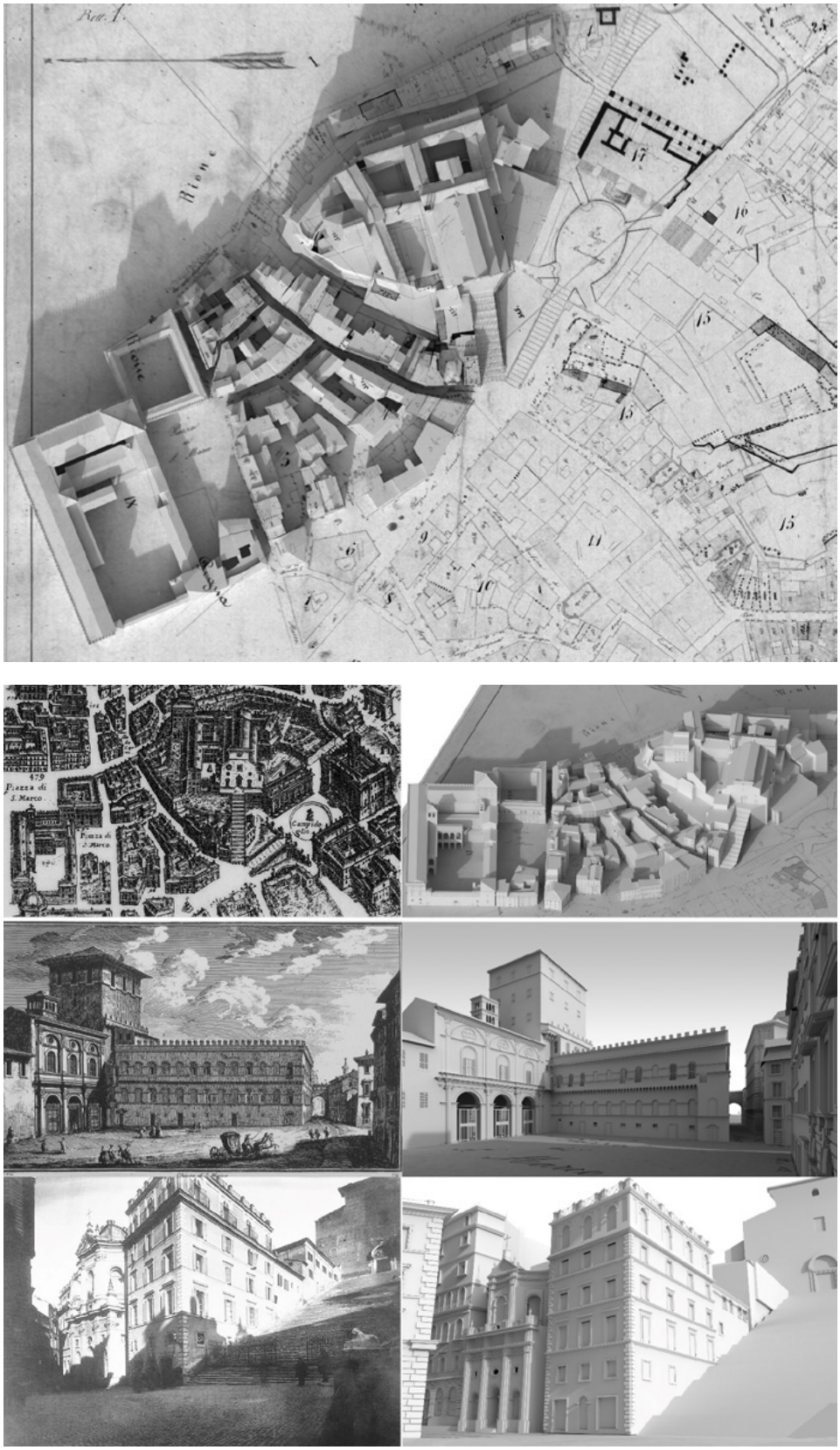

Figure 3. Digitized and georeferenced plan with an indication of the demolitions (in light gray) and the reconstructions (in dark gray). On the right a view of the study area from the rooftops of the Tower of Paul III; **4.** A bird's eye view of the study area, from Palazzo Venezia to the Capitoline Hill surmounted by the Aracoeli convent and the Papal Palace; **5.** Two-dimensional reconstruction and 3D modeling of part of the block on Via della Pedacchia, then Via Giulio Romano. in plan, the recomposition of the floor plans of the ground floors digitized by the archive documents. The detail of the reconstructed buildings is in 1: 1 scale.

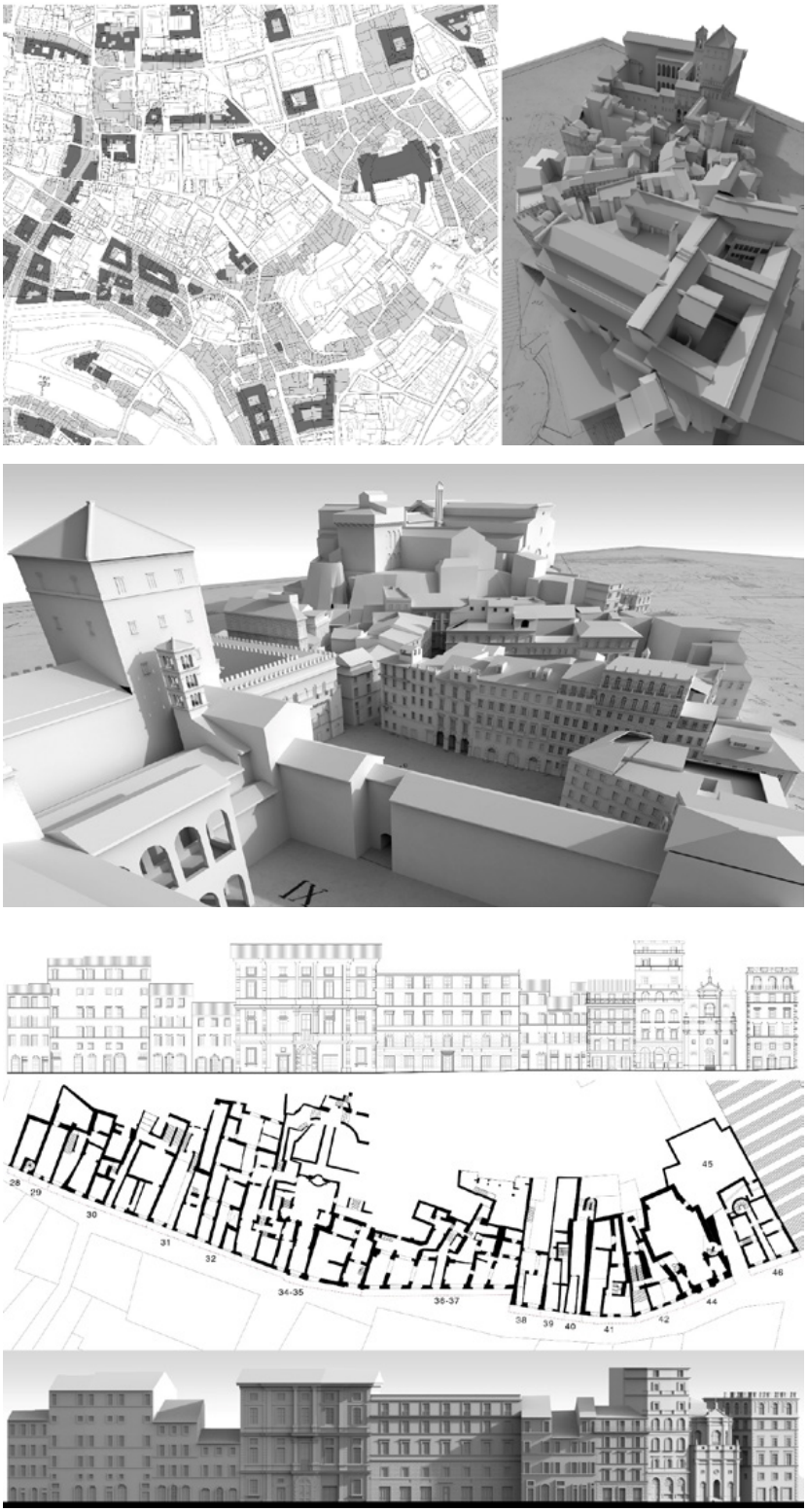

Figure 6. Some of the archival documents useful for three-dimensional reconstruction. On the left, two historical photographs of the convent and of the Papal palace and Piazza Venezia. On the right, drawings: above a sketch of the convent of A. E. Fragonar; below two watercolors by E. F. Roesler of Via Giulio Romano and of the Tower of Paolo III; **7.** Some of the three-dimensional models made, divided into individual blocks. the quality of architectural detail is particularly valuable. Palazzo and Palazzetto San Marco, The Convent and the Papal Palace over the Capitolium hill, a block next to Piazza in Aracoeli and a detail of a building on the old Piazza San Marco.

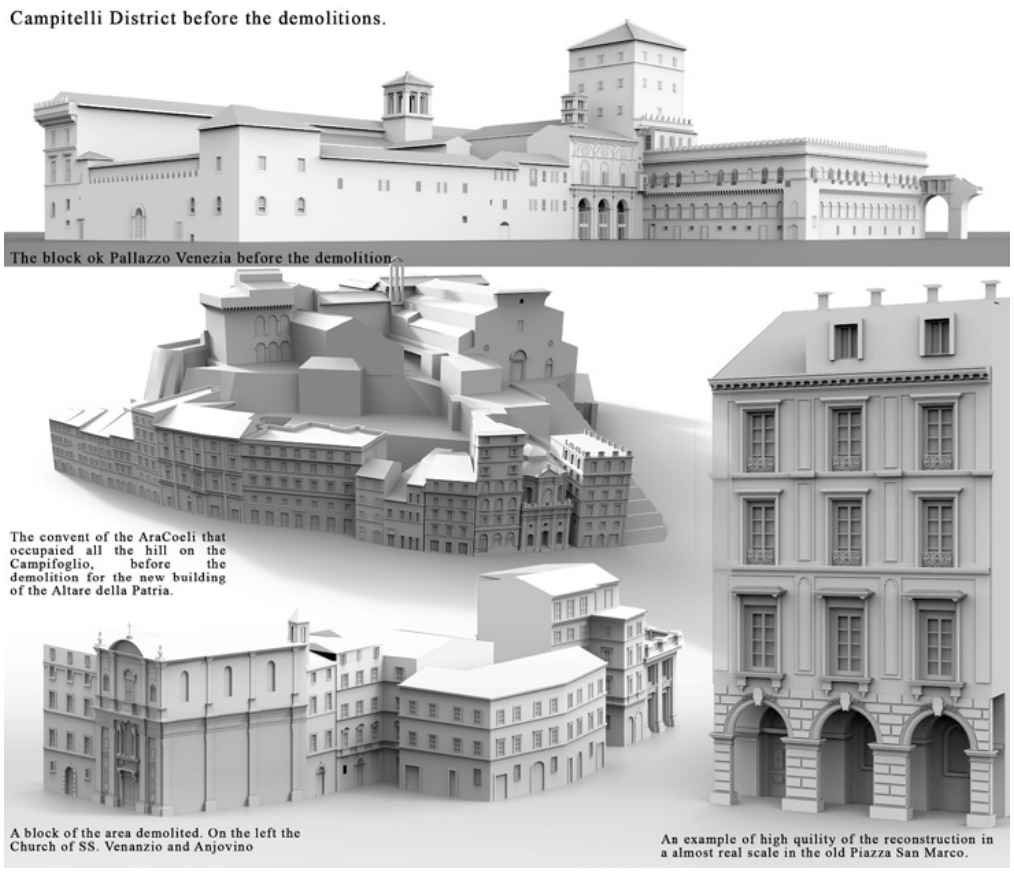

Figure 8. Two views of the San Marco district: Via di San Marco and Piazza di Aracoeli (some lots are hidden to allow the view); Via Giulio Romano, first Via della Pedacchia, on the slopes of the Capitoline Hill; **9.** Overview of the entire study area roughly from Piazza in Aracoeli and a bird's eye view showing all the roofing and the detail of the buildings.

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Investigating the physical integration of historical bazaar as an urban structure of Iranian city, case study: Kerman bazaar

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Bazaar in historical Iranian city operated as an urban structure weaving the urban elements and residential neighborhoods in one hand, and in the other hand preserving its own existence and unity as an organism, growing and transforming. Despite its all benefits and efficiencies, historical bazaar in todays' Iranian city has been neglected functioning only as a historical monument of the urban form. This paper aims to investigate the physical integration of bazaar as an urban structure of historical Iranian city. The product of the paper is a conceptual framework proposing a set of urban form qualities associated with the physical integration of bazaar.

Therefore qualitative content analysis was used to explore the basic and current literature of urban form related to integration, unity and organization, leading to a conceptual framework which is being tested in the context of the historical bazaar of Kerman city, one of the most significant and outstanding bazaars of its kind. The research findings indicate that urban form features and qualities like: "element-whole interdependence, positive urban space, hierarchical space connections, gradual growth, hierarchical organization, permeability, mixed use and hybridity, visual-perceptual characteristics of vernacular architecture", are the most important features related to bazaar integration; emphasizing the fundamental role of space as its essence.

Introduction

Bazaar in historical Iranian city operated as an urban structure weaving the urban elements and residential neighborhoods in one hand, and in the other hand preserving its own existence and unity as an organism, growing and transforming through time and space.

The development of Islamic principles to express unity in cities is based on the belief that the city, in its disposition, is thus thought to emulate the human anatomy. The bazaar symbolizes the spiritual head of the body and grows gradually in an apparent natural pattern in the direction of its symbolic heart – the Jameh Mosque- going on to the openings of one of the city gates. As the bazaar grows, the vital backbone of the city evolves, and the pedestrian pathways leading into the city's body proper insert themselves as ribs. Within this structure and in proximity to the spine, the vital organs of the city develop: bath houses (Hammam), schools (Madrasah), caravansaries, and the numerous stores of the merchants and craftsmen. This structural form represents the religious, political, financial, and social integration of the traditional city (Ardalan & Bakhtiar, 1973: 93).

Despite its all benefits and efficiencies, historical bazaar in todays' Iranian city has been neglected, functioning only as a historical monument of the urban form. Recent urban development and plans have exacerbated the process of its demolition and turndown, disconnecting bazaar from its surrounding and fragmenting it into many parts. As it will be mentioned later Kerman bazaar has gone through the same condition, resulting in its degradation as an integrated organism.

Therefore, this paper aims to investigate the physical integration of bazaar as an urban structure of the historical Iranian city and the main question of the research is: "How is the bazaar defined as an integrated- embodied structure in an Iranian city?" The product of the paper is a conceptual framework proposing a set of urban form qualities at the micro level associated with the physical integration of bazaar,

In order to explore the physical integration of the bazaar's structure and elements, this manuscript reviews the reliable sources in local and international literature, using qualitative content analysis to extract the characteristics of urban form contributing to the physical integration and coherence which are presented in a conceptual framework. Then, Kerman bazaar as one of the valuable and large historical bazaars in Iran is being analyzed according to the proposed conceptual framework. The paper concludes with implications for urban development and regeneration plans which have profound impact on the historical bazaars of Iranian cities.

Methodology

In this research qualitative content analysis is used to explore the themes through basic and current literature of urban form related to physical integration. Qualitative content analysis is defined as a research method for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns (Hsieh and Shannon, 2005).

For data gathering by desk study method, urban design, urban planning, architecture documents were searched focusing on "integration", "unity", "organization", "wholeness", and "coherence" as keywords.

Data analysis was done through coding the data. Codes then were sorted into subcategories based on how different codes are related and linked to the aim of the research. Subsequently subcategories were organized into main categories, leading to a conceptual framework which is being tested in the context of the historical bazaar of Kerman city, one of the most significant and outstanding bazaars of its kind.

Literature Review

Integration is a multi-dimensional concept which has different meanings based on various/diverse perspectives. Integration or wholeness is the objective state of the spatial arrangements which brings harmony, unity and coherence in a whole and relates to urban

characteristics such as proportion, scale, symmetry, rhythm and human scale.

Sense of unity in Persian architecture (Ardalan & Bakhtiar, 1973)

Iranian approach to city and urban form consists a unity oriented worldview which believes that Iranian city as part of a sequence (universe-city-man) follows/conforms a harmonic order with significant characteristics: 1) Multiplicity of geometric elements 2) Positive space systems 3) Usage of symmetry and rhythm 4) Hierarchy of movement systems 5) A basic linkage pattern of spaces (connection-transition-culmination) 6) Time-form simultaneity

Principles of organization in Iranian city (Tavassoli, 1988)

In Iranian theories, historical urban form has valuable principles related to physical integration and organization remarking: 1) Linkage between (integration of) urban elements and residential units around a public space 2) Surrounded urban space 3)simplicity in architecture, elements and details 4) Scale and proportion 5)Variation in spaces, decreasing evenness while not interfering integration 6) A Hierarchy of private to public territory 7) Synthesis of space and its surrounding edge.

Integration of spatial structure of the city (Bacon, 1967)

Bacon's solution to the problem of contemporary cities is the concept of designing the main spatial structure of the city and its relational buildings instead of designing the entire city. This structure consists of "simultaneous movement systems" or paths, along which city-dwellers move or are transported. It is developed gradually over time and is integrated as a whole because all of its parts are inter-connected in accordance with the principles of natural/organic growth. The essence of these movement systems lies within three concepts: 1) Space as a dominating force and its relationship to mass, 2) Continuity of experiences derived from the nature and form of the spaces through which the movement occurs, 3) Simultaneous continuities in terms of movement systems based on different rates of speed and different modes of movement, but inter-related with each other contributing to the experience of the city as a whole.

An integrated theory of urban design (Trancik, 1988)

In Trancik's point of view, an integrated urban design theory is needed to integrate the automobile into the urban form without destroying the quality of outdoor space for the pedestrian. So he suggests five physical design principles for the creation of integrated urban space: 1) Linking sequential movement: connecting existing structure into a sequential, unified space, 2) Lateral enclosure and edge continuity: create frontage onto public space by filling in the gaps and continuity of space's walls, 3) Integrated bridging: to retain spatial continuity and integrate buildings and activities for continuous pedestrian spaces, 4) Axis and perspective: connecting disjointed elements through lines of sight, and 5) Indoor/outdoor fusion: has enormous potential for creating new types of urban spaces in contemporary urban fabric.

Seven principles of a growing whole (Alexander et al., 1987)

The wholeness is the source of growth, which has gradual growth and independence, using seven rules which emphasis its integrity: 1) gradual growth and granularity 2) the growth of larger depends on smaller wholes 3) deeply see: having a mental image 4) positive urban space 5) arrangement of large buildings is related to small building/elements in lower scale 6) building: similarity in building technology and materials in all scales 7) the formation of centers in a whole.

Theory of complexity and urban coherence (Salingaros, 2000)

According to Salingaros' theory, Complex large-scale wholes are assembled from tightly interacting subunits at many different levels of scale, in a hierarchy going down to the natural structure of materials. He suggests eight following urban design rules:

1) Couplings: strongly coupled elements at the same scale form a module. 2) Diversity: A critical diversity of different elements is needed to make a strong coupling. 3) Boundaries: different modules couple via their boundary elements. 4) Forces: interactions are naturally strongest at the smallest scale, and weakest at the largest scale. 5) Organization: long-range forces create the large scale from well-defined structure at the smaller scales. 6) Hierarchy: a system's components assemble progressively from small to large. 7) Interdependence: a higher scale depends on all lower scales but not vice versa. 8) Decomposition: a coherent system cannot be completely decomposed into constituent parts but to different types of units/modules.

Integral urbanism (Elin, 2006)

Integral Urbanism, ones of the latest theories of its kind, aims to heal wounds caused by the modern and postmodern eras, demonstrating the following five qualities: Hybridity and Connectivity(bring activities and people together, rather than isolate objects and separate functions), Porosity(preserves the integrity of that which is brought together while allowing mutual access through permeable membranes), Authenticity(city as an organism is always growing and evolving according to new needs while caring and respecting social and physical contexts) and, Vulnerability(calls to relinquish control, listen deeply, value process as well as product, and re-integrate space with time).

Conceptual Framework

The qualitative content analysis was applied to explore the literature review mentioned in previous section and the result of coding and data categorization is presented in the following conceptual framework (table 1).

Table 1: Proposed conceptual framework		
Main category: Physical Integration		
Codes	**Subcategory**	**Category**
Element-whole interaction, Plurality in unity, Multiplicity of urban elements	Element-whole interdependence/interaction	Morphological Integration
Positive space, Enclosure, Surrounded, connectivity, Linkage, Series of linked spaces, Spatial sequence, Pattern of joint, Hierarchy in connection	Positive connected urban spaces	
Granularity, Piecemeal, Natural order in growth, Growth from lower to larger scales, Assemble from small to large.	Gradual growth in a hierarchical organization	
Permeable membrane, Porosity, Access, Flow	Permeability	
Rhythm, Symmetry, Proportion, Human scale, Vernacular architecture, Visual axis, Perspective, Spatial heterogeneity, Contrast, Variety, Difference in proportion, Variety in edge details	Visual-perceptual characteristics	Visual-aesthetic Integration
Simultaneous movement systems, Primary and secondary movement systems, Hierarchical order	Hierarchy of movement systems	Functional Integration
Authenticity, Respecting social and physical contexts, Responding the needs	Respect the context	
Mix of uses, Variety of activities and population, Intensity, Combination of people-place-activity	Mixed uses and hybridity	

Category1- Morphological Integration is about formal dimension of urban fabric, which describes the physical integration according to the qualities and characteristics of the urban form such as element-whole interdependence, positive connected spaces, gradual growth, hierarchical organization and permeability.

Category2- Visual-aesthetic Integration relates to visual-perceptual principles of Iranian architecture comprising of rhythm, symmetry, proportion, human scale, heterogeneous spaces, contrast, and variety of spaces in a visual sequence.

Category3- Functional Integration addresses the simultaneous movement systems in urban fabric (pedestrian and vehicles) weaving the urban form together, hybridity and mix of uses and activities in urban spaces which supports high quality urban spaces and social interactions, and respecting the historical context of the city while growing and evolving according to new needs.

Case study: Kerman historical Bazaar

"Iranian bazaar is a unified, self-contained building complex of shops, passageway, and caravanserais, interspersed with square (Meydan), religious buildings, bathhouses (Hammam), and other public institution" (Bonine, 1990: 21).

Kerman bazaar is a cross-shaped linear urban bazaar, served as the historical city spine. It

consists of two main linear routes, one expanding from west to east and the other expanding from north to south, connecting bazaar to historical urban fabric furthermore to the city (figure 1).

The east-west route is about 3 kilometers long, linking two city gates; Arg gate at west and Mosque gate at west. It consists of many building complexes named 1) Mozaffari bazaar and mosque, 2) Vakil complex (mosque, madrassah, caravanserai, and shops), 3) Ekhtiyari bazaar and caravanserais, 4) Ganj-Alikhan complex (Meydan, madrassah, Hammam, Zarrab-khaneh), and 5) Arg bazaar and Meydan (Bastani-Parizi, 1978). The North-south route is about 1.5 km long, less important than the other route, consisting of Ebrahim-khan and Haj-Ali-Agha complexes at north and Meydan Ghaleh bazaar at south (PourAhmad, 1991) (figure 2).

In Pahlavi period (1925) streets invaded the historical city with the excuse of introducing automobile to the traditional city. Fortunately the main routes of Kerman bazaar weren't damaged but the surrounding area was fragmented. The north-south route of bazar was split with major streets, disjoining "Aziz bazaar" at north end, and "RigAbad bazaar" at south end; leaving the north-south route shorter and less significant (PourAhmad, 1991).

Introducing new urban elements such as passages and shopping malls mostly established at the edge of main streets of the city, Kerman bazaar lost its credibility as the dominant functional-economic spine of the old city; leading to the abandonment and demolition of some bazaar shops and elements (caravansaries). Losing their function, some buildings of Kerman bazaar has changed into museum such as Vakil Hammam (ibid).

Results and Discussion

The conceptual framework which is the result of qualitative content analysis of the mentioned literature has offered a list of qualities and characteristics contributing the physical integration of the urban fabric. In this section these characteristics are being used in the context of the historical bazaar of Kerman city, testing its physical integration.

1- Morphological Integration:

a- Element-whole interdependence/interaction

Kerman bazaar as a whole consists of a variety of elements (in form and function) which have their own independence but have specific role in the structure and function of bazaar. This interaction is in such a way that the whole (Bazaar) has no meaning and purpose without the elements, and the elements would fail to perform properly and lose their role and meaning without situating in the whole (figure 2).

b- Positive connected urban spaces

The analysis of Kerman bazaar map indicates that "space" is the essence of the whole, leading to a chain of positive urban spaces of different sizes and functions. The courtyard of caravanserais, mosques, Madrassah, and Meydan are all surrounded with the buildings and row-shops of bazaar (called Rasteh) (figure 3).

Fortunately, imposing the modern planning with long and wide streets to historical fabric of Kerman city hasn't damaged the fine grain of bazaar but it has scratched its surrounding area (figure4). Therefore Kerman bazaar and its two main routes play the role of a chain, linking all different spaces of size and scale together, bringing unity and visual attractiveness to the whole. East-west ends of this chain are restricted with two major urban squares, defining bazaar's boundaries (figure5).

c- Gradual growth in a hierarchical organization

Analysis of Kerman bazaar evolution during different historic period up to present indicates that bazaar as a whole had a gradual and piecemeal development via formation

of different complexes as smaller wholes around two main crossed routes of bazaar (figure 2). Each complex consists of smaller elements such as shops, Caravanserais, Madrassah, mosque, Hammam, Meydan which are organized in a hierarchical order from lower to larger scales.

d- Permeability

Inquiry into the movement systems in Kerman bazaar and around it points out that the vehicular movement system hasn't interfere the pedestrian movement in bazaar, moreover it supports the permeability of the whole structure of bazaar linking minor streets to the branches of bazaar, allowing a straight flow of people and goods.

2- Visual-aesthetic Integration:

a- Visual-perceptual characteristics

A group of visual-perceptual characteristics of Iranian architecture and urbanism such as symmetry, rhythm, human scale and proportion support the integration and unity of bazaar. A harmonious and continuous rhythm in main routes of bazaar, associates to its integration and perception as a whole, facilitating its legibility. A sequence of spaces, different in size, enclosure, proportion creates spatial heterogeneity is the structure of bazaar, reinforcing its integration.

3- Functional Integration

a- Hierarchy of movement systems

According to historical documents and maps, Kerman bazaar had its own movement system which was connected to the primary movement system of the city, linked to pedestrian pathways into residential quarters. With the introduction of modern planning since Pahlavi period, streets have fragmented the historical fabric of the city, but bazaar hasn't been damaged seriously; therefore the pedestrian pathways inside bazaar and its branches has formed a hierarchical movement system with the surrounding minor and major streets, linking bazaar to the rest of the city.

b- Respecting the context

Before the modernization era which has transformed almost every historical city of Iran, bazaar was a living organism, rooted deeply from its physical and social context, growing with respect to it while responding to new social, physical and economic needs of citizens. In this state Kerman bazaar was the heart of economic and social life of the city, preserving its inner integrity and also its connection with the surrounding area and the city.

But now Kerman bazaar has lost its role as the structural, social and economic spine of the Iranian city due to transformations in economic system, development policies and new patterns of goods supply and consumption presenting in commercial centers.

c- Mixed uses and hybridity

In historical periods especially Zandiyeh period (18th century), Kerman bazaar has its own economic vitality, offering almost every public service to the city. Bazaar had an essential role in the economy of the city, providing a variety of administrative, commercial, educational, religious, and healthcare facilities.

Now the physical body of bazaar is empty from activity and uses, being in conflict with commercial centers as the new figures of new economy system. The bazaar role as the economic heart of the city has vanished, descending to present less valuable goods.

With the influx of new forms of market place such as passages and shopping malls at the

edges of main street, Kerman bazaar lost its credibility as the dominant functional-economic spine of the old city; now many building are abandoned, have lost their previous functions, leading to a low range of activities and functions. Moreover some buildings of Kerman bazaar have transformed into museums such as Vakil Hammam (Bathhouse).

Conclusion

Integration is a multi-dimensional concept in urban planning and design. This paper seeks to explore the "physical integration", although there are other issues of integration related to the city and urban fabric such as social and economic integrations which aren't the focus of this research.

In this study the results of qualitative content analysis of the local and international literature, represented in a conceptual framework, indicate that "physical integration" can be defined and clarified through three dimensions as follow:

1) Morphological integration
2) Visual-aesthetic integration
3) Functional integration

The exploration of these dimensions in Kerman historical bazaar, one of the most valuable and also large Iranian bazaars of its kind with the help of historical documents also updated maps indicates that morphological integration is still preserved in Kerman bazaar through inter-dependence of bazaar and its elements, strong connection between positive urban spaces, maintaining the gradual growth of its parts, avoiding large scale developments and concerning lower to larger scale organization without blocking its permeability into surrounding area.

Moreover visual-perceptual characteristics of vernacular architecture and urbanism like rhythm, symmetry, human scale and spatial heterogeneity in main routes of bazaar and its prominent elements guarantees visual-aesthetic integration of bazaar as a whole defined structure.

Today Kerman bazaar as an economic-social structure of the traditional city has lost its place; the physical-historical context of bazaar has been damaged due to modern urban planning and development since Pahlavi period. Bazaar can't afford to adapt to new needs and lifestyle of the citizens, leading to downturn, abandonment, or even demolition of its buildings. Now Kerman bazaar offers only few local goods and handcrafts, also heritage buildings and structure that are the historical-cultural tourist destinations.

Taking all into account, the physical integration in Kerman historical bazaar is a three-dimensional concept which has been maintained in some parts due to the preservation of morphological and aesthetic characteristics of bazaar and its elements, resulting in its perception as an integrated organism, but in functional dimension bazaar doesn't have integration and coherence, as its context has been damaged, its economic and public service functions have been lost, and its buildings have been abandoned.

The results of this paper, not only provides the opportunity to achieve the principles and guidelines for holistic design in contemporary urban planning and design, but also provides more appropriate principles in the process of urban regeneration projects in historical city centers.

Identifying the principles of physical integration allows more effective solutions for urban designers and planners in dealing with bazaar as an integrated organism still alive and vibrant in the historical center of Iranian cities. The more accurate and detailed knowledge of this living organism is provided, there will be a possibility of a more meaningful understanding of the inevitable decisions of contemporary urban development in historical context which will enhance the integration of the bazaar and its coherent role in urban projects in Iran.

Figure 1. (left)Map of Kerman bazaar in Qajar dynasty, 19th century (Hamidi, et al. 1997); **2.** (right)Map of Kerman bazaar in relation to historical area of the city (authors).

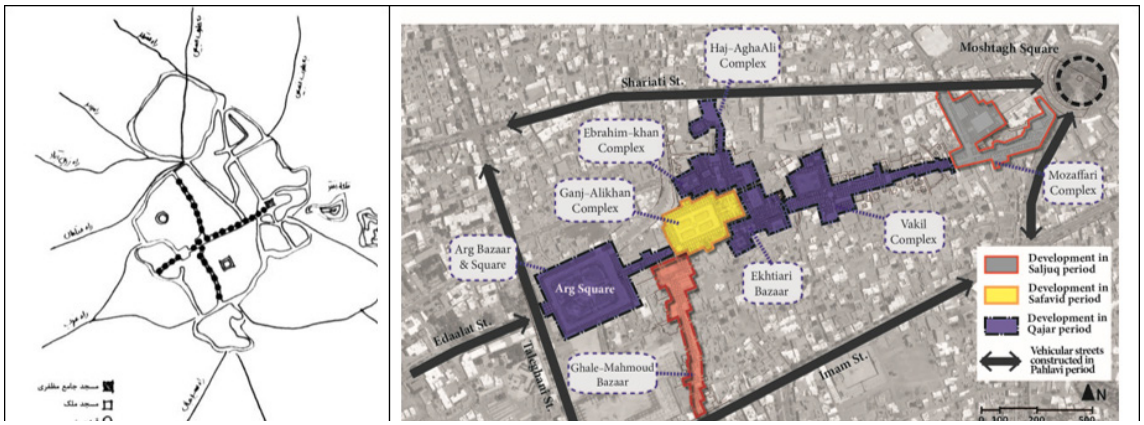


Figure 3. Caravansaries'' and Mosques' yards and Meydans as positive urban spaces in Kerman bazaar (authors).

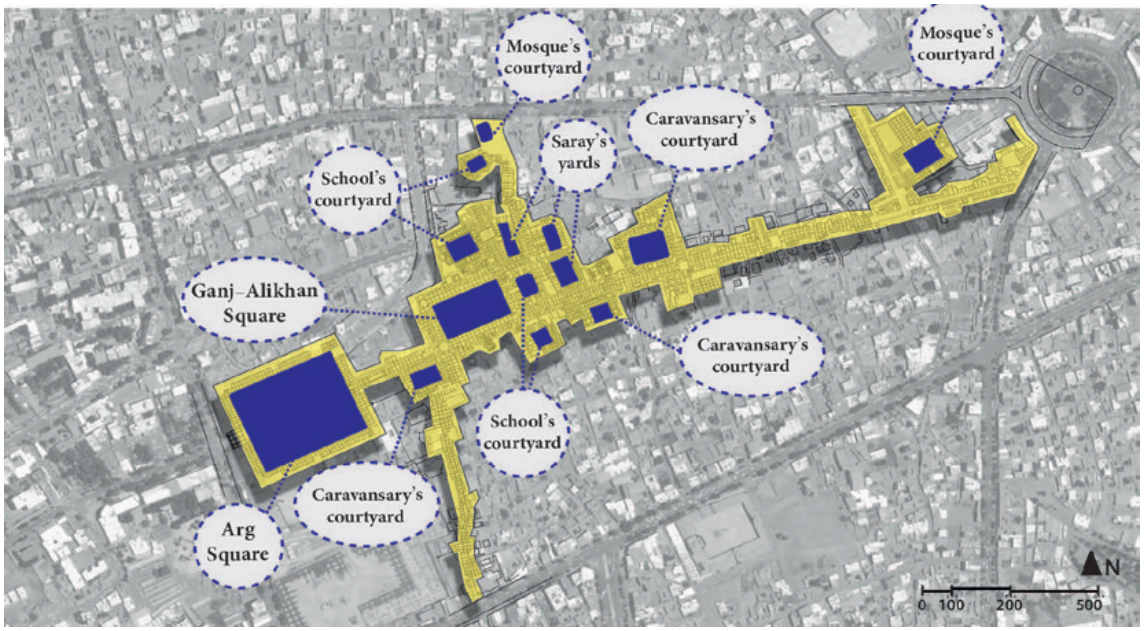


Figure 4. (left)Location of the structure of Kerman bazaar in relation to main streets of the city (authors); **5.** (right)Chain of spaces in Kerman bazaar (authors).

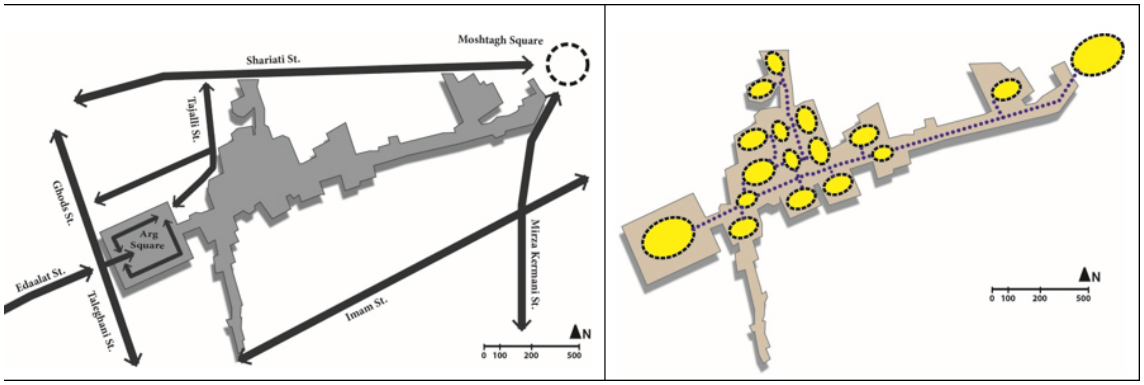
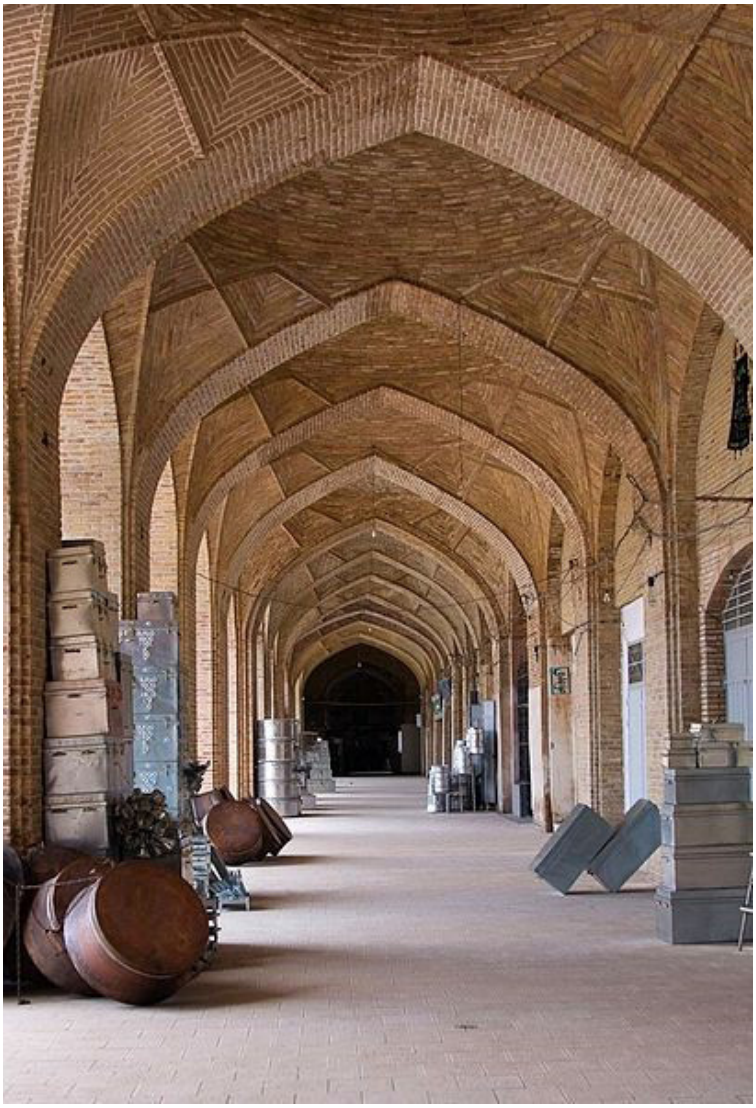
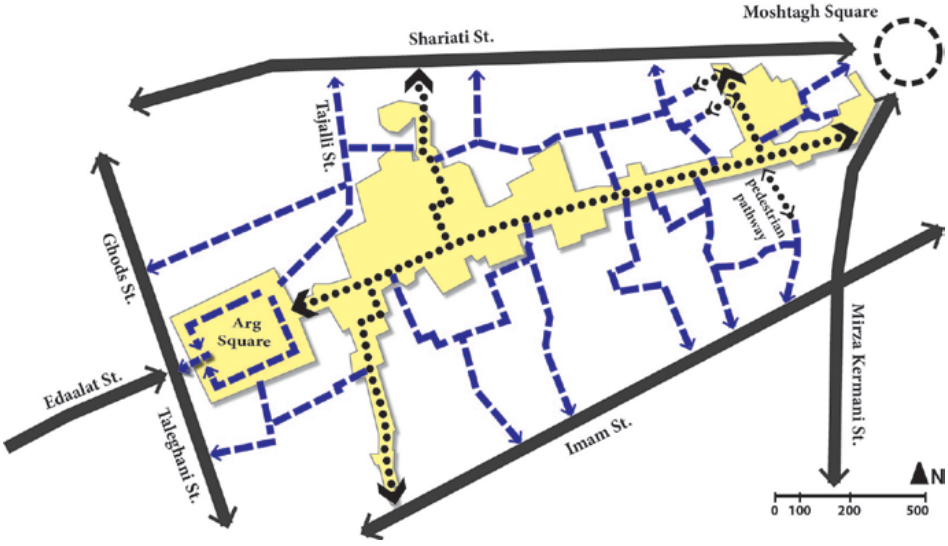


Figure 6. View of bazaar arcade flanking Ganj Ali Khan Square (Wikipedia, https://en.wikipedia.org/wiki/File:Ganjali_Khan_Bazaar.jpg); **7.** Analysis of permeability and hierarchy of movement system in Kerman bazaar (authors).





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Wikipedia, https://en.wikipedia.org/wiki/File:Ganjali_Khan_Bazaar.jpg.

Urban morphology and transformation the pattern of housing in the historical cities of Iran. Case Study: Historical Texture of Shiraz. Iran

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Regardless of the historical and cultural collapse of today's contemporary architecture that arose in the aftermath of the advent of modernity, if we look at the process of the emergence of architecture before this era, we see that most architectural monuments in different periods have been able, due to modeling, to possess A distinct and defined style. The study of urban morphology and architectural typology on different scales show that the formation of ancient cities in the Middle East has always been subject to various conditions, including political, social, economic, geographical and cultural conditions. Cultural conditions are the most important and the first parameter in the formation of urban structure in Iranian cities. The city of Shiraz is one of the sample cities. By studying the historical context of Shiraz from the past and reviewing its morphology, it can be understood that the city's structure is based on cultural conditions. The modern city structure in Shiraz is very different from the historical structure that continued to Qajar period that is the finalist historical period of Iranian urbanism.In this paper, by analyzing different parts of the historical texture of Shiraz, the concept and dimensions of changing the pattern of housing based on urban morphology have been analyzed and analyzed. The results of this descriptive-analytic study show that the concept of housing in this city has been changed and the main factor of development has been derived from the inside. Therefore, it can be argued that the core of the forces forming the Islamic cities, based on the concept of housing in the present age, has lost its meaning.

Introduction

Urban morphology is a major trend in studying the shape of a city in urban geography) Madanipour, 2001.(Urban morphology is a study that studies the shape of urban tissue and its current state of affairs. In other definitions, urban morphology can be described as follows: Urban morphology is a study of the combination of form and urban space that helps urban designers to become familiar with local patterns of development and change processes) Carmona, Tiesdell, Heath & Oc, 2003(.

Therefore, it is observed that the emphasis of the existing definitions is on the physical aspects of the city that urban designers can intervene in shaping. However, in some definitions, it refers to social and economic forces that affect urban texture over time. It goes on to say that how much research and studies on urban morphology have succeeded in analyzing social and economic forces over time. It seems that the lack of serious attention to these forces is a common critique of existing morphological studies. Accordingly, due to different approaches to this concept, various definitions of urban morphology are presented, examples of which are:

- Urban morphology is a science that focuses on the tangible effects of socio-economic forces and, in this regard, examines the process of shaping the notions and tendencies that form the form of cities. Buildings, gardens, streets, parks, and sculptures are important elements of morphological analysis, although these elements are always subject to change over time(Moudon,1997).
- Urban morphology examines the form, shape, map, structure, and functions of the urban fabric and the origin and mode of evolution of these tissues over time) Madanipour, 2001.(
- Morphology means "Planings, Buildings, Uses, Streets, Maps and Urban Prospects") Madanipour, 2001.(
- Urban morphology is a term used as a variety of types of research, all of which focus on the physical form of urban areas)Whitehand, 2001(.

Urban morphology studies in different periods, as well as influenced by different perspectives, have differentiated in the study method and the final product, which is categorized in the form of different morphological schools. Status of urban morphology has changed over time. Until the sixties, the main attention of urban geographers was the city's dense structure, with particular emphasis on morphology, which depicted the ages and types of construction, and identified different historical elements and maps of cities. Hence, since the categorical failure of the functional classifications and the economic foundations of the urban landscape, the urban morphology, which is more descriptive, has been severely criticized,which does not provide the organizers with the result to achieve proper solutions, and only looks at insignificant things) Madanipour, 2001.(

But in the aftermath of the systemic thinking and interactions between architects, geographers, historians and economists, a new form of urban morphology was established and it was actually attempted to assess the city's structure as the result of historical development in different periods)Whitehand, 2001(.

To do such a study, different approaches and schools have come up with different patterns. Compared to different patterns of urban morphology in historical textures, the British school is more than the rest of the researchers. Nevertheless, suggestions can be made to complete it with respect to the social, economic, and political factors affecting the city's body. In this study, by examining the morphological structure of the historical texture of Shiraz, which is one of the most valuable historical buildings in Iran, examines examples of residential buildings in the city typologically and examines the impacts of construction regardless of morphology.

Methodology

The research methodology has defined the search process (rather than the search product) (Grout & Wang, 2007). Research methods are considered in a variety of ways such as basic research, descriptive, exploratory, exploratory, empirical, strategic, comparative,

analytical, and so on(.Andalib,2003). The method of this research is an analytical-exploratory method. For this purpose, we first study and analyze the physical structure of the cities of Iran in terms of urban morphology and then, by comparative comparisons of existing samples in Shiraz and its morphological structure, we will address the mutual effects of the typology on urban morphology.The main approach to this study is based on the critical paradigm. For this reason, by examining the criticisms of the various parts of the urban texture of Shiraz (the historical context) and the construction of it in the period from 1950 to 2017, we try to present a dominant pattern for reading the historical texture.

The stages of this research include reviewing the theoretical foundations of research, analyzing research findings, and concluding and presenting a solution.

Theoretical fundamentals of research

The city is a kind of social organization, whose emergence in the time-frame required the provision of specific conditions. In a survey of cities and a general look at cities, it is a feeling that each city has its own space and with a scientific look that has a morphological distinction. In cities, every activity that is considered by humans is essentially reliant on culture, and culture is the result of habits, customs, traditions, traditions, styles, and common ways of life. In general, it can be said that in urban spaces there is a complex of civilizations that are like islands in the city.

One of the factors that have always played a decisive role in the construction of cities and is used in all cities is the "urban culture" factor. It can be said that urban culture is the very foundation of civilization and behavior of citizens, which is the result of values in the heart of society, which is the product of this process of the concept of space in the city, which is itself a very important part of the morphology of cities. The concept of space, continuous and unceasingly, has been ups and downs since human thought has taught and focused on reflection and thinking about metaphysical and abstract concepts, and with the consideration of the interplay between different domains of thought, including exchange Philosophy and science, especially metaphysical science and external factors. Urban spaces are now being studied in relation to the behaviors of users of that space. Available spaces in the city can be classified into three general categories of private spaces, semi-private and semi-public spaces, and public spaces. And it should always be noted that urban spaces are not used as expected. And behaviors do not occur in predictable spaces. The spatial structure (city) shows the order and relationship between physical elements and uses in urban areas. Regarding the physical elements that are thought to be constructed, it can be said that each of the cities has its own morphology, and it is reasonable, however, that the principles of city-based surveys should be taken into account:

1- Emphasize the difference in the space of urban areas.
2- Accuracy in the impact of these contradictions on the emergence of urban patterns.

In the early stages of urbanization, the two factors of social construction and technology were very effective in the development of cities, in such a way that, at any given time, the construction of cities influenced a certain kind of historical background and a certain worldview. In the morphological development of medieval cities in Europe has been important five factors more than other factors: 1) city wall 2) market 3) military fortress 4) church 5) special philosophy of life.

In the morphology of the Renaissance cities, three factors have been most influential: architects, urban theorists, military engineers.

In the morphological development of Islamic cities, the following factors have been involved: 1) religious factors 2) climatic factors 3) economic factors 4) communication factors 5) governmental and military factors 6) health factors 7) waqf factors.

Islamic culture, with the slogan of equality, fraternity and vertical and horizontal movement, caused the dynamics of urban society and the dynamics of people in the urban community. In the beginning, a close relationship was established between the concept of the city and Islamic culture. And was formed in the city of the first Islamic state. Islamic culture has been important for the privacy of its family and its values. Consequently, all of the rules and regulations in the way planned affected the construction of cities and gave them a special identity to their morphology that It is different from other cities in the world. Therefore, the religion of Islam was also effective in the transformation of the former cities,

and also the establishment and growth of new cities with its own special structure. On the other hand, Islamic ideology is not only effective in the emergence of cities but also has greatly influenced the structure of the body. This structure involved various changes during various periods of time, with new governments and ideologies.

The Morphological Changes in the construction of the City in an Ancient period of Iran

The city's design of the city is characterized by a map, aerial photograph, replica, or city-highlighting of the city, indicating the extent, the environment, the geographical boundaries and how to use the urban land and the organization that employs this space(Farid, 1989). Accordingly, the city map represents the city's texture, which consists of houses replaced by natural and topographic conditions, compact or unpolluted, and replaced by a special order within the boundaries of the smallest unit of the city (ie, blocks and urban neighborhoods), and It gives the city a special geographic feature.

The pattern of town formation has always been either organically (without a previous design) or based on a predetermined design. Although today's modern urban plans are often the product of a new civilization, human civilization experiences examples of cities with preconceived patterns, some of which precede thousands of years ago. One of the most important urban patterns shaped by pre-designed designs can be referred to as chess and radial patterns. Today, some cities, especially large cities, are less likely to be identified with a single pattern because of the variety of patterns they use. These types of cities are usually identified by a combination pattern. The use of a specific urban model in different places and times depends on its environmental, economic and social conditions, and therefore, in different parts of our country, we are witnessing the formation of different urban patterns.

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The organic pattern in the urban plan includes a plan that has not been designed in advance, and the city's development is based on natural and occasional conditions, and roads, streets and narrow alleys are welded with twists and turns. Most European cities in the Middle Ages had such a plan. Over time, as a result of accidents such as fire, earthquake, and war, the cities went to ruin and, at the time of their reconstruction, changed their geographical and geographical outlook on the basis of a new map and adapted themselves to the needs of the time(Farid, 1989). In Islamic regions, these forms of cities were usually formed inside the walls and controlled by gates to pass through them)Shirley, 2005(.Generally speaking, the pattern of organic cities, cellular systems, balanced diversity, good health, close relationships, stability, interdependence and return to the natural world are considered(Lynch, 2005). In ancient Persia, the shape of cities in the Selukian and Parthian periods gradually began to follow more or less established rules and some cities were constructed in a racket. Most of these cities had two main roads, and roads and alleys parallel to them. In the Sassanid period, the city of Jondishapur was built as a chessboard(Hekmat Nia & Ghanbari & haft

cheshmeh, 2008). In Persia and in the Sassanid era, circular shapes were typical for the cities, so that they had important government and co-ownership in their center, and then the residential areas were circular around the center. These cities have been defensive, and the main reason for their lack of security has been in the region(Farid, 1989). A typical example of a radial urban pattern in Iran today is the city of Hamedan. In urban post-Islamic periods in Iran, urbanization is subject to the environmental and natural and political conditions of the region. Except in some cases, most of Iran's cities have been formed with an organic or hybrid construction pattern.

In cases where a city has used more than one pattern in its development process, it would be difficult to determine a single pattern in such cities, so this brigade of cities is characterized by a hybrid pattern. Many times large cities use different urban designs in their physical expansion process and can not maintain a single urban pattern. For example, while many of the big cities in their old parts have organic texture, in their further development in parts of the city, they use different patterns of chess, radial, or linear, in other words, they have a hybrid pattern. Many parts of many old and big cities in Iran have an organic pattern since most of these cities have been created in the past and are not specific and well thought out. Most of these cities have developed urban development plans over the past four decades, and are now imposing new streets on their organic texture. In contrast, new sections in these cities are often developed with patterns of chess, radial, or linear patterns. Therefore, today's pattern in these cities is a combination of different designs. The cities of Tehran, Isfahan, Shiraz, and Tabriz are from this sample.

The process of city formation and urban centers in Iran

The formation of a city in Iran can be divided into three periods. The first two periods lasted from the beginning of the Aryan settlement to the arrival of the Muslims. Major cities of Elamite, Medi and Achaemenid were mostly religious, administrative and sometimes religious. The second period begins with the beginning of the arrival of the Muslims, their invasion, as well as other great invaders of history, not only did not prevent the growth of urbanization, civilization, and culture of Iran but in the light of the teachings and worldview of Islam, it sped so fast. The brightest period of the third century began and continued until the fifth century AH. In this period, due to the growth of trade and commerce, urbanization is very high and important centers and elements such as bazaar and mosque are formed in the city. The third chapter begins with the beginning of the Pahlavi government(Soltanzadeh, 1983). One of the major changes that took place during the Pahlavi era and the spatial organization of cities in Iran was the transformation of the structure of urban centralization. In this period, the destruction of a large number of neighborhoods of the city as well as the collapse of the market by new streets and undermining the role of market functioning as the most important factor contributing to the urban center in Iran, the old city center was severely damaged and weakened(Soleimani, 2012).

Morphology of Islamic cities

In the morphological construction of Islamic cities, the following factors have been involved:

1. Religious factors 2. Climate factors 3. Economic factors 4. Communication factors 5. Public and military factors 6. Health factors 7. Active endowments

Some researchers consider the effective factors in the morphology of Islamic cities as:

1- Most Islamic cities surrounded by walls and the city had several gates.

2- The city's administrative district was located in the central part of the city and adjacent to the mosque.

3- Markets were created in a linear way along major lines.

4- In all Islamic cities inspired by Islamic ideology, there has always been a significant separation between the private and the public (Shokouei, 1979).

Ehlers also presented a model of the Islamic city in his studies, which include:

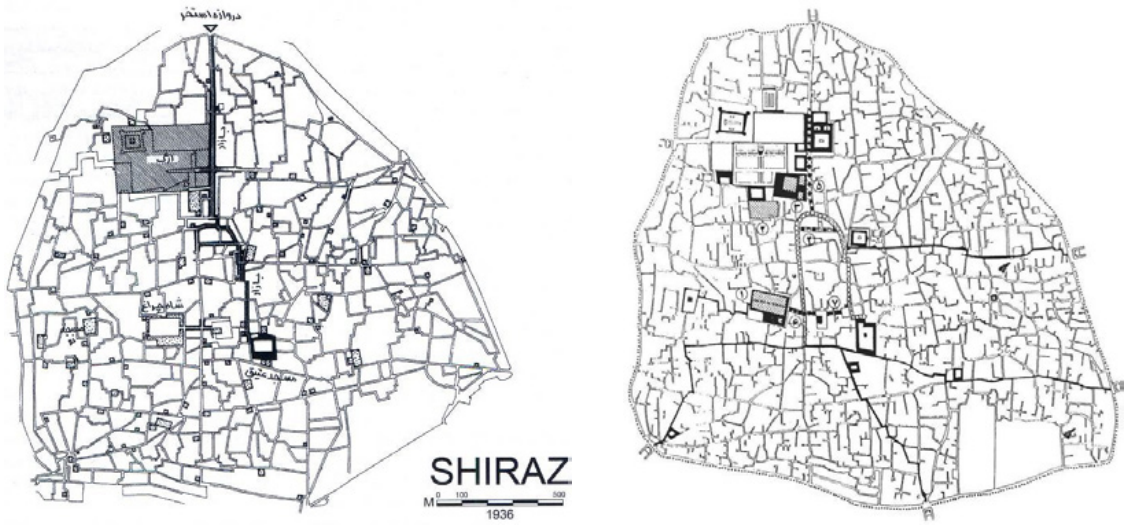
The existence of a hierarchy of functions with the mosque (religious function) and the

market (the economic function and heart of traditional business activities) as the core of each Islamic city. And centers of residential neighborhoods within the city at appropriate distances and in harmony with social, ethnic, religious, and ... conditions.

The process of changes in morphology of Shiraz city

Morphological characteristics of a city are affected by various factors. In urban Shiraz, urban morphology is more than natural environment. The climatic, political and strategic features have shaped the city's morphology somewhat. Commercial function also affected the morphology of the city of Shiraz, where the formation of the city in the direction of the commercial axis of the market to the north and south. The periodic development of the city of Shiraz has been formed by following its central core and in line with the business axes of the city and the political ways of the country that connected Cesfun to the pool in the pre-Islamic era. The city has expanded from the inside to the center of the circle in different periods. The main roads in the city through the Gateway to the "Istakhr" are linked to two major urban areas of government and the religious center of the city. Gradually, urban markets and services are created along the paths of these streets and create the core skeleton of the city. Observing the distance between government and religious centers is the main cause of the city's two-branch expansion. There is no obvious reason why the city environment has remained circular at the time of the construction of the city's rain at the time of the "Abukalanjar". But the city of Shiraz has always been influenced by the main communication axes (Bazar-compatible) and the axes of communication between the Jakumatian and religious spaces that coincide with the city's waterways, and the growth of the spot has caused its environment to remain close to the circle.

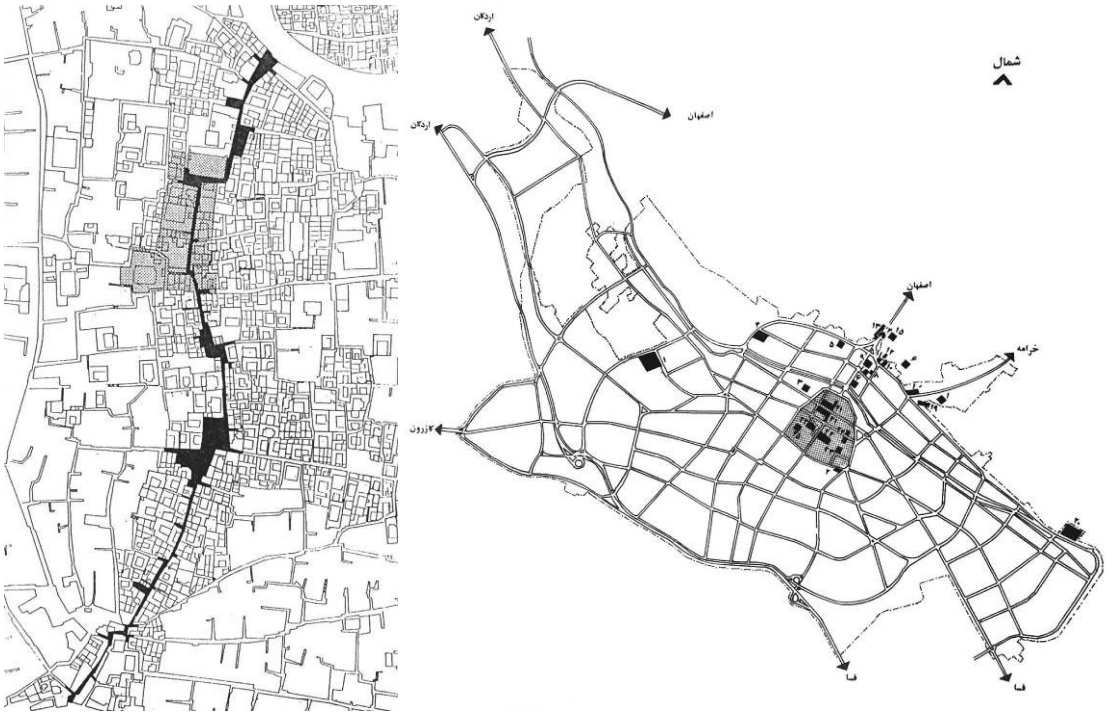
Figure 1. (right) Historical texture of Shiraz and its physical structure the base map of Donald Wilber-1936. (left) Physical structure of Shiraz city and formation of its paths.



Urban spatial analysis
urban Pathways

Considering the city as a vibrant and dynamic creature, the streets and streets of cities are the vital arteries of every city. In the past, they also played a role in the importance of the market in the city in the past. The basis of the sculpture of Iranian-Islamic cities is based on urban axes, the most typical of which are the markets. During the Islamic period, the city's streets have played a role in connecting and communicating urban spaces and elements that the Shiraz city streets are no exception. It has played a major role in the structure and organization of the city as the main factor of the city's morphology.

Figure 2. (right) One of the historical passages of and the formation of urban texture around it. (left) Shiraz Historical texture of Shiraz and its position in contemporary city.



Squares

Fields and squares, or in general, open and accessible public spaces are the main historical elements of Iranian cities that have played a role in various ways as a place of activities and social interactions and identity factors of Iranian cities. Also, the squares are also victims of modernity, which have given their place to the fields and never have the potential to operate on the field but has reduced the importance of an important old field to the intersection of the unimaginable number of modern streets(Movahed, 2012).

Neighborhoods

Neighborhood concept is one of the familiar and familiar concepts in Iranian urban tradition. After Islam, the neighborhoods formed on existing commons, for example, based on the homeland of the two Shiraz and Isfahan Neighborhoods, or on the basis of joint activities of the two neighborhoods of the weavers and the Hesirbaf neighborhood. The neighborhood was a small town in the heart of the city, which required a Bazar, Mosque, School, and other things(Pour Jafar, 2012).

Mosque (Religious User)

The Islamic State is born in the city and given the formation of this government for the first time in the mosque. Therefore, the central Mosque becomes one of the main characteristics of the city of Islamic period. In the city and neighborhoods of Islam, the mosques and its neighborhoods along with other centers of pilgrimage and education create the spiritual and intellectual dimension of cities(Zarabi & Ali Nejad Tayebi, 2010). Religious buildings are one of the most important monuments of old cities. Old mosques are located in the center of the neighborhood. Like the Ardakan mosque of the 10th century, located next to the market and in the old neighborhood. All the old neighborhoods of this city have been formed around religious places (Omidvar &Hatifi,2012).

Houses (residential user)

Properties of housebuilding are that the entrance of Islamic homes to the door opens, in contrast to the non-Islamic and Arabic houses where they enter the outside. In other words, this suggests that the home is the individual's kingdom, where the character, the sanctity, and secrets are reserved(Samir Akasash, 1998). The separation of the family from other spaces inward and outdoors in the construction of houses and the separation through the wall is a matter of observance of the principles of architecture. Homes often have entrance doors to prevent direct viewing(Zarabi & Ali Nejad Tayebi, 2010).

Madraza)school((education user)

Most major Islamic schools were located along or near the main body of the market and the main orders of the city. Cities like Tabriz, Isfahan and Yazd are examples of this(Zarabi & Ali Nejad Tayebi, 2010). In the second and third centuries, the number of schools and teachers grew. The important feature of the school, their religious aspect, was one of the important factors determining their position in the city.

Typological design of architecture
Map of the building

In ancient Persian architecture, house architecture was designed and built on the basis of special principles and patterns(Memarian,2009). Specific climatic conditions in Shiraz caused the ancient texture to have an introvert and closed structure, and houses in the historic neighborhoods of the city have an introverted pattern. Therefore, architects used the introspective map as a suitable and efficient plan for designing and building the house.

Entrance

Entrance homes are invited at all times, even in the simplest of houses. The interior surface is usually decorated with tapestry bricks. In traditional Iranian homes, the entrance is not merely an element and includes a multi-element set with a variety of functions. Many traditional Iranian homes have different entrances to manage the entry of different people into the home. Generally, these inputs are defined for guests with grading close to the family of the family)Nairi Fallah, 2013(.Among the principles that architects considered in the design of the entrance to traditional houses are:

1- The privacy of the home must be preserved.
2- Allow entry during the gradual process.
3- The entry process is a sign of modesty.
4- The control of the entrance is non-direct.
5- View the house in a distinctive neighborhood(kateb,2012).

Vestibule

The vestibule or crayus is a space that has been designed and built in many of the entrance spaces and immediately after the entrance, and one of its functions was to divide the input path into two or more directions(Memarian,2009). The vestibule is a mediator space inside and outside a home. Separating the outside space from inside and creating privacy in Iran's residential architecture.

Corridor

The hallway or the atrium is the path that connects the vestibule to the courtyard, and this pattern is a prerequisite for Iranian architecture, which was considered by the architects during the Islamic period, especially in the design of the collection of mosque and house entrances(Memarian,2009). This space is the simplest component of the entrance space,

which is the main function of providing connectivity and access between the two locations.

Courtyard

The composition of the courtyard in traditional homes was fundamentally consistent with the diversity of physical and spiritual needs. These requirements also explain the relationship between the private and public sectors. And based on the same necessities, various courtyards were designed and constructed. The outer courtyard (man's yard), a semi-private place, was devoted to guests and non-members. And the inner courtyard was unique to the family and no one had the right to enter it. This kind of courtyard is considered to be the most private traditional courtyard(Mahdavi Nezhad,2012).

Analysis of the findings

Any urban space will be confused and destroy its spatial structure if it develops without plans and urbanization goes beyond urbanization. If urban neighborhoods and districts are created without infrastructure, this will, in addition to physical disorientation and urban design, cause social damage and a lack of sense of belonging to the place and social issues that will weaken and fracture the city's body from within.

In the last two decades, the development of the city of Shiraz has been caused by two main phenomena of villagers' migration and natural growth of the urban population of Shiraz. The population of Shiraz has increased from 170659 people in 1956 to 1214808 people in 2006. And while the population of the city's historical texture is from 102,395 people in 1956 to 59,438 in 2006. This increase in population in the city and the decrease in population in historical context causes a change in residential per capita per hectare, which results in a change in the city's morphology and, consequently, the architecture typology and in particular the housing typology. The migration of indigenous people from the texture to the marginal areas of the city and the migration of the villagers and the poor to the historical context and the change in per capita housing causes the architectural grains of the historical context to change their typology. This change in typology creates houses that either have been built up from the division of a historic home into two or more houses, or made without regard to the morphology and typology of architecture and only as a shelter.

Figure 3. Changes in Urban Morphology of Shiraz-2017.

Conclusion

The new urbanization is trying to change the traditional definition of the city and the spaces and functions it has. According to this definition, the transformation of cities is quite normal and necessary. Although changes in the structure of cities occur over time, maintaining the structural nature of the urban fabric is one of the most fundamental principles. But what has happened in Iran in recent decades reflects the idea that it does not consider the city as a living organism, but considers the city as a set of functions in a common context. The exploitation of this pattern in Iran led to the polarization of cities. because the new urban fabric built on the basis of a modern urban model was in contrast to the old texture that had

organic texture. This can not be just a simple visual coincidence; it shows the organic nature of the structure of these cities; Interconnected structures that are connected with strong ties on large scale also on small scales. However, today's planned and modern cities lack such structures. Today's urbanization has created a fragmented structure between the old texture and the new texture. Therefore, in the first step in modern urbanization, it is necessary to reconstruct the lost connection between the two parts of the historical context and the new context of the city. In order to fully utilize environmental conditions, urbanization is required for all environmental, cultural and social conditions.

Accordingly, attention to these points is essential:

- Attention to the elements forming and coherence of the historical context, such as squares and open spaces of the city.
- Attention to the nature of Iranian authentic architecture in designing and redesigning abandoned and abandoned spaces of historical texture.
- Open the design of access routes based on the principles of urban morphology and social structure of neighborhoods.
- Redefining semi-public and semi-private spaces to create a sense of belonging to the place in the citizen.

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The urban form after growth

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In a historical period that sees the arrest of urban growth, if not its contraction, the ways to approach the theme of its form are placed in new conditions, never experienced in modern and contemporary times. Moreover, the current historical phase puts at the heart of the project new approaches and new ingredients, necessary to face the challenges of our time: climate change, new values and new needs for a new urban population. The theme is currently at the center of the reflection of a great deal of knowledge, from the macro-scale (economy, environment, spatial planning, etc.) to that of construction (technologies, energy, eco-sustainability in architecture), but the approach of the disciplines that deal with the urban form still does not appear sufficiently clear.

This is also due to the complexity of existing urban forms, which we must reflect upon. Working 'within' the existing urban form, to recognize its constituent features and to redefine its values, appears to be the greatest challenge for urban design, to be connected to the other major themes that cities pose, not least space justice, if we understand cities as a place of opportunities for human, civil, spiritual growth.

The contribution aims to focus attention on this theme, through exemplary case studies that allow us to reflect on the current meaning of urban form in the becoming and in current conditions; with particular reference to the following themes that are particularly central to the approach adopted here today: deposits of the '900, suburbs and urban margins; metropolisation and local identity, open landscapes and urban landscapes.

Premessa

A quasi cinquant'anni dal noto rapporto del MIT "I limiti dello sviluppo"[1], le città dell'occidente vedono esaurirsi la parabola della crescita e pongono in evidenza problemi nuovi, i cui termini - e probabilmente le cui soluzioni - sono da ricercarsi dentro la città.

E' questo un periodo storico che vede il modificarsi profondo dei meccanismi che hanno regolato la crescita urbana nell'ultimo secolo - fino ad arrivare ai casi della sua contrazione – e insieme l'affermarsi ormai evidente di nuove condizioni in cui agire: mutamento climatico, nuovi valori e nuovi bisogni per una nuova popolazione urbana e sempre più urbana (Wilson, Piper, 2010; Musco, Zanchini, 2014, UN, 2018); in questo contesto, il tema della forma urbana 'dopo la crescita' evoca molte dimensioni e scale di lavoro.

Esso è presente, direttamente o indirettamente, in diverse discipline e temi di ricerca: alla grande scala è direttamente correlato alle discipline dell'economia spaziale, dell'ambiente, della pianificazione e ai temi del consumo di suolo, della sostenibilità, della resilienza; alla piccola scala la forma urbana è un tema centrale e insieme un interrogativo delle nuove forme dell'abitare, del riuso degli spazi della dismissione, dei margini urbani della rigenerazione ambientale, urbana, sociale.

Inoltre, la dispersione insediativa che ha caratterizzato gli ultimi decenni ha modificato in profondità la forma e la percezione delle relazioni tra "dentro" e "fuori", tra città e campagna. Il lascito di questa modalità di crescita è una enorme inefficienza del sistema urbano e – in relazione al tema in oggetto – una crisi profonda del concetto stesso di città come spazio concluso e denso. Ci si chiede dunque, oggi che questo sistema mostra tutta la sua insostenibilità, oggi che sappiamo quanto esso abbia inciso sulla vita delle persone e sullo stesso senso di comunità, quale forma urbana può essere ricercata, riconosciuta, ricostruita, a partire da questo lascito?

Una prima disamina di alcuni di questi contenuti può aiutare a mettere a fuoco come oggi noi possiamo trattare il tema della forma urbana, in una città che cambia in modo inedito.

Forma urbana come forma della città: alcuni indicatori

E' noto ormai che il suolo sia una risorsa limitata e non riproducibile e che in condizioni naturali fornisca servizi ecosistemici (approvvigionamento, regolazione, supporto, culturali) (UE, 2005) di fondamentale importanza per la vita. In quanto bene finito e prezioso, il suolo è conteso tra diversi usi e il tema del suo consumo è oggi al centro dell'attenzione delle discipline e nell'agenda delle istituzioni internazionali che si occupano di territorio e ambiente.

Nell'ambito del concetto più generale e condiviso di consumo di suolo inteso come trasformazione da rurale o naturale ad artificiale – trasformazione pressoché irreversibile, visti i tempi lunghissimi di ricostruzione della risorsa suolo – se tra gli usi artificiali del suolo puntiamo l'attenzione su quelli insediativi, la correlazione tra consumo di suolo e forma urbana appare come tema di riflessione di rilievo. E, in effetti, tale correlazione è chiamata in causa allorquando, nell'ambito delle metodologie per quantificare i fenomeni insediativi e le ricadute ambientali ad essi connesse, vengono messi a punto una molteplicità di indicatori[2], tra cui in questa sede appare opportuno segnalare quanto meno l'Indice di Compattezza LCPI (Largest Class Patch Index), che consente di rapportare la superficie al perimetro dell'insediato, laddove in via teorica a valori maggiori di compattezza corrisponde

1 Come è noto, *Limits to growth* fu elaborato dal Massachusetts Institute of Technology per il Club di Roma e presentato nel 1972; si tratta del primo documento di studi sul futuro che introduce in nuce il concetto di sostenibilità dello sviluppo.

2 Limitandosi alle esperienze italiane, si vedano gli indicatori messi a punto dall'ISPRA, Istituto Superiore per la Protezione e la Ricerca Ambientale e inoltre *Urban Index. Indicatori per le Politiche Urbane*, un dataset di indicatori statistici mirati ad una lettura critica del territorio urbano, nato in Italia dalla collaborazione tra il Dipartimento per la Programmazione e il Coordinamento della Politica Economica e il Politecnico di Milano – Dipartimento di architettura e studi urbani – nell'intento di sviluppare strumenti utili alla definizione e valutazione delle politiche pubbliche nelle aree urbane (2015). Analoghi indicatori sono presenti nell'*Atlante web Postmetropoli*, nato nell'ambito del PRIN *Territori post-metropolitani come forme urbane emergenti: le sfide della sostenibilità, abitabilità e governabilità*. [3] Nell'ambito della ricerca condotta dal DICAR – Politecnico di Bari finanziata dal Comune di Bitonto, comune della città metropolitana di Bari, mirata a impostare le linee guida per la nuova pianificazione urbanistica locale.

una maggiore efficienza del sistema urbano, o l'Indice di Dispersione Urbana (IDU), utile per comprendere la relazione tra aree ad alta e bassa densità, in quanto descrive la dispersione attraverso la variazione di densità di urbanizzazione; valori elevati di questo indice caratterizzano le aree urbane con prevalenza di tessuti urbani a bassa densità, mentre valori più bassi denotano superfici urbanizzate più raccolte e compatte.

Tali indicatori, oltre ad uno scopo eminentemente analitico, si prestano anche ad essere utili strumenti di valutazione delle politiche urbane: ad esempio in un caso di studio[3], oltre a valutazioni propriamente riferite alla forma urbana e ai caratteri morfologici delle sue parti costitutive, le elaborazioni sull'indice di compattezza hanno consentito di apprezzare le differenze tra lo stato attuale e quello che deriverebbe dall'attuazione delle previsioni urbanistiche, denunciandone le criticità (fig. 1).

Le più recenti indagini (ISPRA, 2018) tendono a individuare alcune prime correlazioni tra il fenomeno del consumo di suolo e le forme dell'urbanizzazione, anche con la finalità di individuare i fattori di rischio di consumo di suolo; dalla indagine emerge come i contesti insediativi a bassa densità siano quelli maggiormente connessi al consumo di suolo, non solo in sé, in quanto impegnano vaste superfici a fronte di una bassa densità di popolazione, ma anche per le forme nelle quali esse si esprimono: "*in particolare, le aree a bassa densità sono maggiormente a rischio per varie cause tra cui la predisposizione alla trasformazione delle aree libere rimaste incluse nelle aree urbanizzate o intercluse tra gli assi infrastrutturali o comunque in territori che hanno già perso il carattere di diffusa naturalità*"[3].

All'approccio quantitativo espresso in questi documenti si affiancano ormai da tempo alcune politiche, che potremmo definire 'orientate' a traguardare il tema della forma urbana; le ritroviamo - limitandosi alla Puglia, regione nella quale si collocherà il caso di studio - in alcuni documenti normativi[4] e di pianificazione. Tra questi ultimi, nel Piano Paesaggistico Territoriale Regionale della Puglia, e in particolare negli apparati critico-interpretativi che presiedono alla formulazione del dispositivo pianificatorio, la classificazione delle morfotipologie insediative evidenzia come quelle contemporanee (dagli anni '50 ad oggi, tutte) siano quelle "*nelle quali si verificano le maggiori criticità paesistiche e ambientali (occlusione della percezione della città antica e moderna, decontestualizzazione delle tipologie edilizie e urbanistiche, spazi aperti interclusi, degrado dei paesaggi infrastrutturali, industriali, commerciali, residenziali, omologazione dei paesaggi delle periferie, ecc)*"[5]. In particolare le criticità riguardano la dilatazione degli spazi e spesso il loro abbandono, la discontinuità dei tessuti e rispetto al contesto, la perdita dei legami con la matrice rurale, la privatizzazione. L'impietoso giudizio, ancorché fondato e largamente dimostrabile, stigmatizza l'intera contemporaneità come foriera di criticità, quasi vi fosse stata una amnesia disciplinare, una deriva complessiva nel fare città. Ciò pone in evidenza il serio problema, sotteso a tutta questa trattazione, del 'giudizio storico' ovvero della considerazione critica del portato della contemporaneità: esso difficilmente può essere valutato con lo stesso metro con cui si valuta il passato, poiché con tutta probabilità si tratta di un processo tuttora in corso, il cui compimento pare però interrotto dai "limiti dello sviluppo", dalla fine della crescita.

Il lascito del '900. Bari città metropolitana

Si intende ora sviluppare il tema osservando brani della città metropolitana di Bari, con particolare riferimento alla sua area centrale, quella più intensamente conurbata. Un territorio caratterizzato dalla città capoluogo e dai comuni contermini che, spesso senza soluzione di continuità, si avvicendano in una scena urbana nella quale domina la periferia.

La conurbazione barese ha dimensioni e dinamiche d'uso e sfruttamento del territorio che superano ampiamente i confini amministrativi; un territorio fortemente inurbato, frutto

3 Rapporto ISPRA 2018 sul consumo di suolo, pag. 30.

4 Oltre alle dichiarazioni di principio contenute nella normativa regionale, nei Criteri regionali per la formazione e localizzazione dei Piani Urbanistici, al tema della forma urbana è dedicato uno specifico approfondimento in un atlante di morfotipi e in un insieme di indirizzi progettuali per l'inserimento progettuale delle trasformazioni urbane. Cfr Calace F. (2012), *Criteri per la progettazione urbanistica. La sostenibilità alla prova*. Alinea Firenze. Resta da valutare l'efficacia di questo tipo di linee guida nella applicazione concreta, questione che apre nuove e necessarie prospettive di ricerca.

5 Atlante del PPTR, Descrizioni strutturali di sintesi, pag. 76.

della giustapposizione delle politiche urbanistiche locali a quelle infrastrutturali, che hanno comportato nei decenni della crescita la realizzazione delle grandi attrezzature urbane, dei poli produttivi e del sistema infrastrutturale (Calace, Angelastro, 2015).

La storia urbanistica della città di Bari, a partire dall'ottocento, ha visto dapprima uno sviluppo pianificato a maglia ortogonale e in seguito una espansione per maglie orientate lungo le direttrici di collegamento territoriale; ciò all'interno di un territorio caratterizzato dai segni morfologici dei solchi erosivi - le lame - espressioni dell'attività carsica, molte delle quali convergono, per pendenze e andamento geomorfologico, nell'area di Bari.

Fino alla metà del '900 la forma della città si caratterizza per un nocciolo interno molto compatto, costituito dalla città edificata a maglia ortogonale dai primi dell'ottocento in adiacenza del nucleo storico posto su un piccolo promontorio sul mare, e dai suoi sviluppi oltre e in adiacenza alla barriera ferroviaria; l'isolato compatto, edificato a cortina e con il cortile interno, ha costituito la componente base di tali espansioni; la forma urbana che si è determinata è distinta e riconoscibile rispetto al territorio aperto (fig. 2).

A partire dal secondo dopoguerra Bari si è sviluppata prevalentemente per ampi areali lungo alcune direttrici e per nuclei: la direttrice sud, che ha comportato la saldatura della città con le sue frazioni immerse nella campagna, le direttrici costiere, quasi del tutto insediate da edilizia a bassa densità nel corso degli anni '60 e '70; i nuclei pianificati di iniziativa pubblica, residenziali e produttivi, con particolare rilevanza nel settore ovest del territorio, in cui sorgono un grande quartiere di edilizia pubblica e una zona ASI tra le più grandi del mezzogiorno. In tale periodo, all'isolato chiuso si è affiancato il modello insediativo dell'edilizia libera nel lotto, lasciando via via spazi scoperti sempre più ampi, anche questi diversamente utilizzati e trattati.

Tra queste grandi direttrici e i nuclei, spesso tagliati dalle infrastrutture permangono ampi spazi aperti, caratterizzati dalla presenza di solchi erosivi già citati e da aree agricole. La presenza delle numerose infrastrutture stradali e soprattutto ferroviarie e il disegno urbano definito dalla pianificazione vigente hanno comportato il formarsi di numerosi spazi interstiziali, per lo più in abbandono (Fig 3).

Le parti edificate in attuazione della pianificazione vigente denunciano la sovrapposizione alla antica trama di un disegno pianificatorio che invece obbediva ad altre regole e principi[6]; quel disegno ha interrotto la prima, ma senza mai essere portato a compimento; per cui oggi non si comprende il senso né dell'una né dell'altro. E oggi, appunto in una città dopo la crescita, questo attrito si manifesta con più forza, affiorando l'esigenza di trasformare la città al suo interno, piuttosto che nell'espansione.

Osservando lo stesso territorio attraverso gli indicatori prima citati, si conferma come le condizioni morfologiche, le direttrici di sviluppo urbano, le pianificazioni urbanistiche abbiano portato a indici di compattezza molto differenziati, che si attestano tra il 40 e l'80% (Bari 70%), per crescere poi con l'aumentare della distanza da esso e in virtù di molteplici fattori, tra cui emerge una campagna intensamente produttiva o una pianificazione meno legata alle sorti e del capoluogo[8] (fig. 4).

Osservando invece l'indice di dispersione e pertanto il rapporto tra le densità, la città di Bari denota un indice di dispersione piuttosto basso rispetto al suo contesto territoriale, dovuto alla presenza di ampie zone con alte densità, a fronte delle città contermini, nelle quali prevalgono modelli insediativi con densità inferiori (fig. 5).

Per comprendere appieno le variazioni di forma, le motivazioni che ne sono alla base, e in definitiva la natura delle componenti che oggi costruiscono la forma urbana, è utile osservare più da vicino alcuni brani di questo territorio, così come oggi appaiono frutto della sovrapposizione della stratificazione storica e del disegno pianificatorio incompiuto: un mix di segni e di oggetti diversi per grana, densità, relazioni con il contesto e con gli altri elementi.

6 Per brevità si omette una riflessione compiuta su tali regole e principi, segnalando esclusivamente che gli strumenti di pianificazione cui si allude sono stati concepiti negli anni del massimo sviluppo edilizio e nella prospettiva della città regione di Bari. Tra tutti, il PRG di Ludovico Quaroni, avviato alla metà degli anni '60 e approvato nel '76, ben rappresenta la cultura urbanistica dominante e, insieme, le aspirazioni del governo locale e della società di allora. [8] Un caso che può apparire virtuoso come quello del comune a sud ovest del capoluogo (Modugno), che si differenzia dagli altri comuni per questo valore e per il successivo, in realtà è dovuto al suo essere compresso tra le infrastrutture e l'ampia area ASI incuneata nel comune di Bari.

Il brano di territorio metropolitano che qui si osserva[7] (fig. 6) è costituito da due piccoli centri di antica origine, storicamente rilevanti e nodi dell'armatura territoriale storica di cui Bari era un elemento periferico, sorti nello spazio tra due solchi erosivi e annessi alla municipalità del capoluogo durante il riordino ammnistrativo del ventennio. I nuclei storici sono stati incapsulati da una edificazione contemporanea fatta di materiali molto diversi, esito del processo di crescita e metropolizzazione: all'edificazione puntiforme verso il capoluogo costituita dapprima dalle ville otto-novecentesche della borghesia locale, poi da un tessuto progressivamente infittito di case unifamiliari o a schiera, con la pianificazione degli anni '70 si aggiungono previsioni di infrastrutture, espansioni abitative e attrezzature degne di una metropoli, tese a inglobare le piccole

città nel processo di espansione e modernizzazione che il piano perseguiva. Oggi, a più di quaranta anni dal piano, quelle previsioni risultano realizzate solo in parte e solo nelle previsioni di minor pregio: due periferie pubbliche con forme e densità estranee al contesto e impattanti nel paesaggio secolare, brani di viabilità, più lontano grandi attrezzature prive di valore urbano. A fronte di una promessa di modernizzazione e inserimento nel cuore della città metropolitana, questi luoghi hanno visto solo realizzarsi periferie; essi oggi vivono una condizione 'ribaltata' rispetto al passato, avendo essi assunto il ruolo, e quindi i caratteri e le criticità, di periferia urbana in un contesto metropolitano.

Ad oggi, apparendo scontato che quel disegno - quella promessa – non potrà essere portato a compimento, si pone il problema della forma di quel brano di città. E si pone nella duplice scala cui si allude in questo scritto, ovvero della forma della città nel suo insieme e nel suo rapporto con lo spazio aperto, e delle forme delle sue relazioni interne, tra antico e moderno, tra gli oggetti diversi per grana e densità cui si faceva cenno.

Il futuro della forma urbana

Appare sempre più probabile che in questa fase storica la città si trasformerà al suo interno, usando i brani incompiuti, le aree dismesse, la rigenerazione dei quartieri più poveri di servizi, in definitiva il lascito del '900 come campo d'azione. Difficili sembrano invece i processi di vero e proprio restringimento urbano e di restituzione alla campagna o agli spazi naturali di suoli già artefatti o interclusi, ormai inclusi nell'orizzonte e nelle aspettative dell'urbano.

Ciò significa che probabilmente la città non tornerà ad avere una sua forma distinta e riconoscibile che la separa dalla campagna; anzi, questi spazi di margine saranno i più soggetti a turbative, a degrado, ad abbandono, essendo incerto il loro destino. E ad esempio le *cinture verdi*, potente figura progettuale che ha dato vita a numerose esperienze di pianificazione generatrici di forme urbane, viste in questa prospettiva possono essere un dispositivo che, ex post e in modo adattivo, ridefinisce il ruolo degli elementi che sono disposti ai margini e a corona della città consolidata, ovvero periferie incompiute e a bassa densità, suoli artefatti e manipolati, spazi dell'abbandono e dell'attesa, mai finiti. Perché un conto è salvaguardare gli spazi agricoli e naturali intorno alla città, altra questione, con altri costi e altre inerzie, è intervenire in modo sistemico su suoli così compromessi. Occorre un altro progetto, e occorrono altri strumenti a disposizione del progetto e del governo delle trasformazioni urbane.

Quello preso in esame è un caso in cui *storia* e *natura* segnano il percorso da intraprendere (Nigro, 1986): i potenti segni morfologici e ambientali, il deposito patrimoniale storico di eccezionale valore[8] – ambedue valori scarsamente considerati nei decenni della crescita – possono ragionevolmente costituire i capisaldi per la ricerca, il riconoscimento, la ricostruzione della forma urbana; e per la natura e la disposizione nel territorio di queste emergenze patrimoniali, esse possono supportare il ridisegno sia alla scala del tutto, nel suo rapporto con lo spazio aperto, sia alla scala delle relazioni tra le sue parti (fig. 7).

7 Il caso è sviluppato nel Laboratorio di Laurea IV Municipio, presso il DICAR del Politecnico di Bari, da G.A. Amendolara, S. Camporeale, F. Marcucci, O.G. Paparusso, A. Rana, P. Sepe, O. Spadaro, tra il 2017 e il 2018.

8 Ceglie è un centro di origine peuceta e poi città romana, che custodisce un patrimonio archeologico di rilievo; la struttura paesaggistica è conformata dal paesaggio delle lame, incisioni del territorio che conservano lembi di naturalità e ruralità, oltre naturalmente ad avere un fondamentale ruolo idraulico.

Ma non sempre i luoghi sono attraversati da una storia e da una natura potenti che il progetto deve 'solo' far riemergere; in molti casi, nella città metropolitana di Bari e oltre, le tracce della storia e della natura sono labili e deboli, e pertanto occorre misurarsi direttamente e senza mediazioni, con i segni della contemporaneità, ma – è necessario ricordarlo – nella città dopo la crescita, alle prese con i mutamenti climatici, il consumo di suolo, la necessità di riqualificazione ecologica e urbana dell'esistente, con tutte le sue inerzie al cambiamento.

Pertanto, quello della forma urbana è un tema di ricerca e di progetto che non può che declinarsi prevalentemente attraverso azioni limitate per estensione, ma dense di intenzionalità nel ridefinire il senso degli elementi che tocca. Il rammendo, la ricucitura, l'agopuntura – tutti termini fortemente allusivi dell'approccio al progetto in questa fase storica – denotano un atteggiamento progettuale che rinuncia a nuove forme assertive e totalizzanti, che evitano di disegnare nuove forme urbane, ma lavorano 'tra le cose', per ridefinirne il senso.

Tuttavia, poiché è forte il rischio di percepire la natura di queste operazioni come microtessere di un puzzle infinito senza più disegno (Piccioni, 2015), è opportuno decodificare il significato di questi interventi e il modello di città cui essi alludono e tendono, pur nell'alveo limitato in cui si sviluppano. E questo appare un campo di ricerca necessario e rilevante per il futuro della forma urbana.

Figure 1. Confronto tra la forma dell'insediamento esistente e quella derivante dall'attuazione delle previsioni del PRG nella città di Bitonto: l'attuazione di queste previsioni comporterebbe un ulteriore abbassamento del valore, aggravando la posizione attuale dal 49 al 42%.

Figure 2. L'area centrale barese nel 1949; **3.** L'area centrale barese nel 2006.

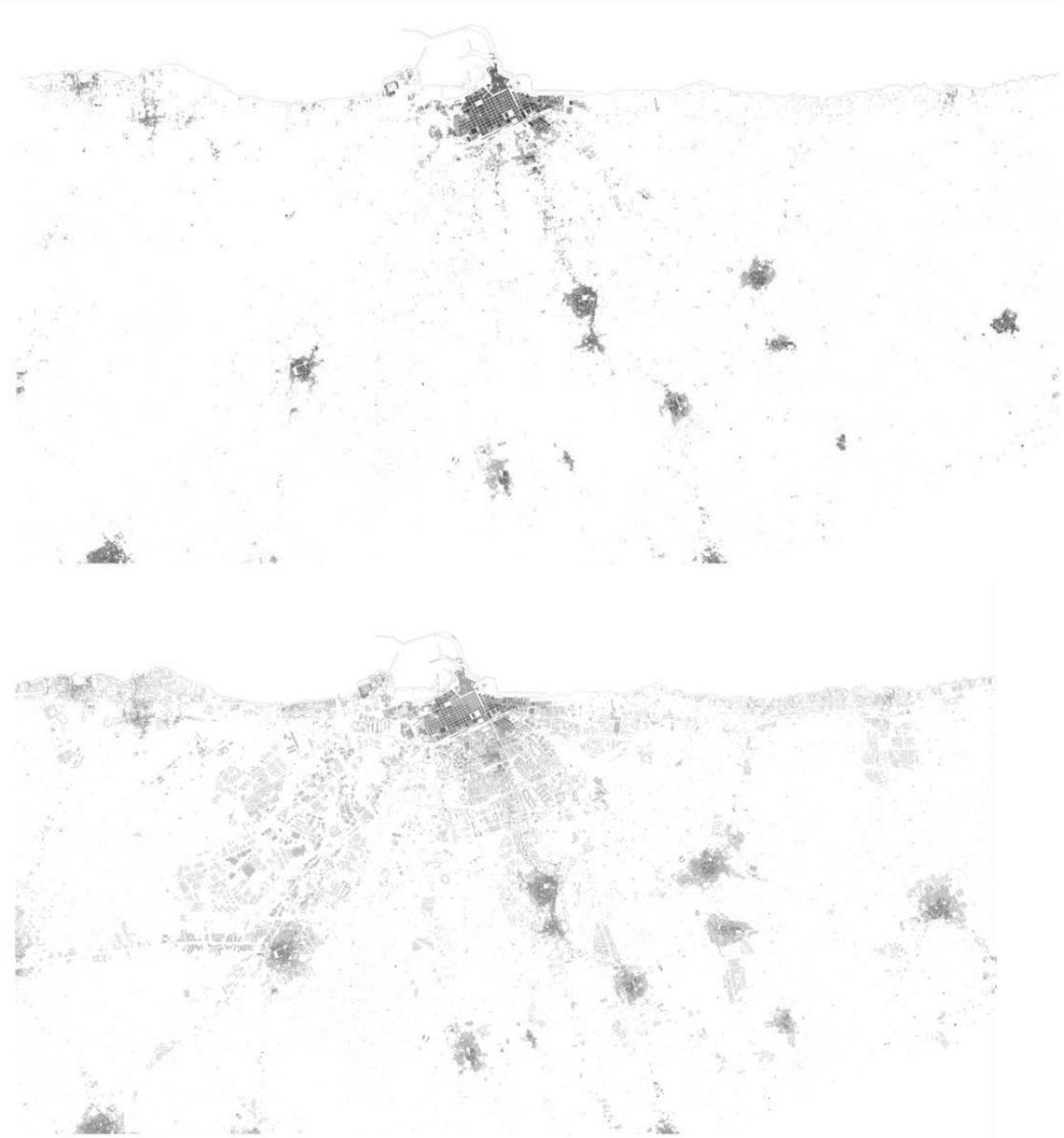
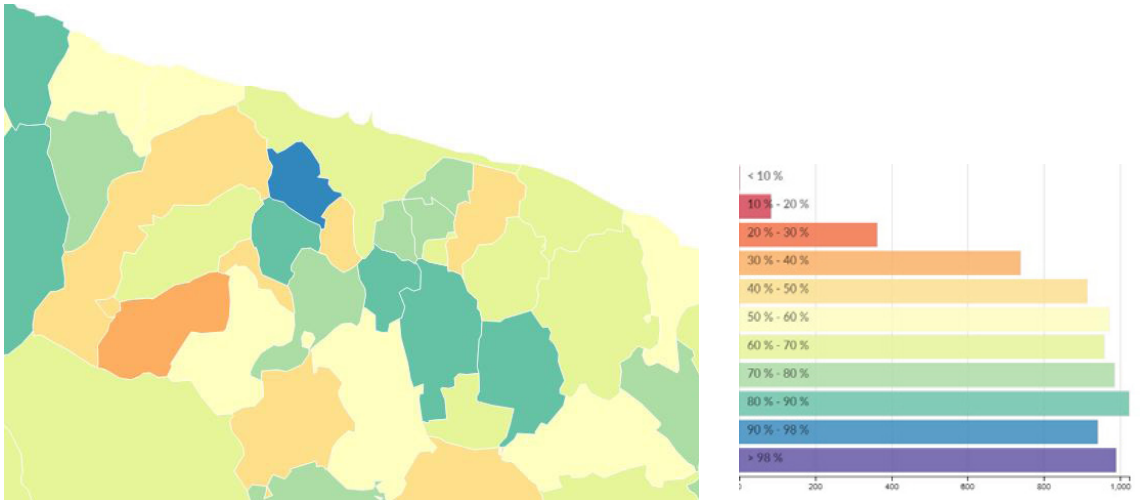


Figure 4. Indice di compattezza delle aree urbane – 2015. Elaborazioni a cura di Progetto di Ricerca di Interesse Nazionale "Territori post-metropolitani come forme urbane emergenti: le sfide della sostenibilità, abitabilità e governabilità", www.postmetropoli.it; **5.** Indice di dispersione delle aree urbane – 2015. Elaborazioni a cura di Progetto di Ricerca di Interesse Nazionale "Territori post-metropolitani come forme urbane emergenti: le sfide della sostenibilità, abitabilità e governabilità", www.postmetropoli.it



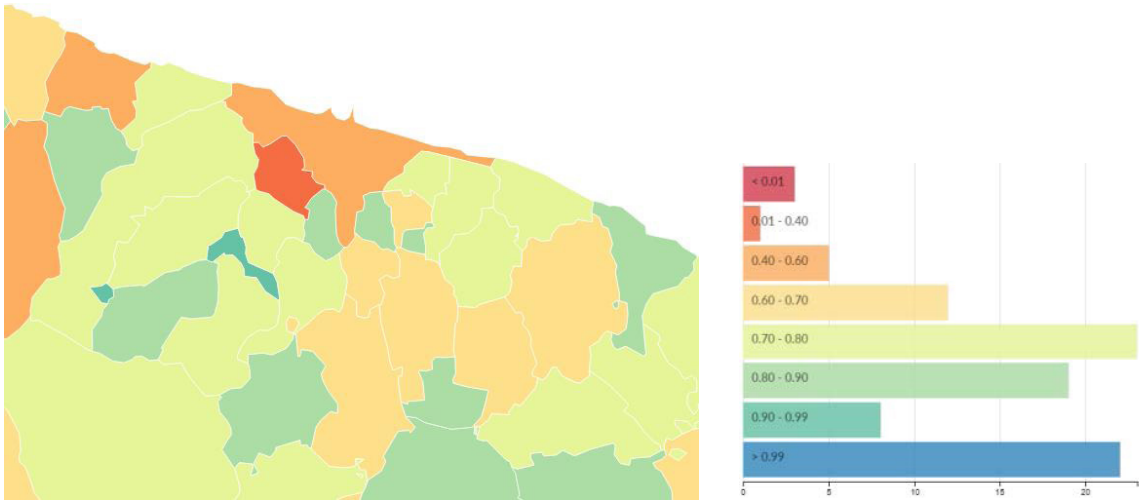
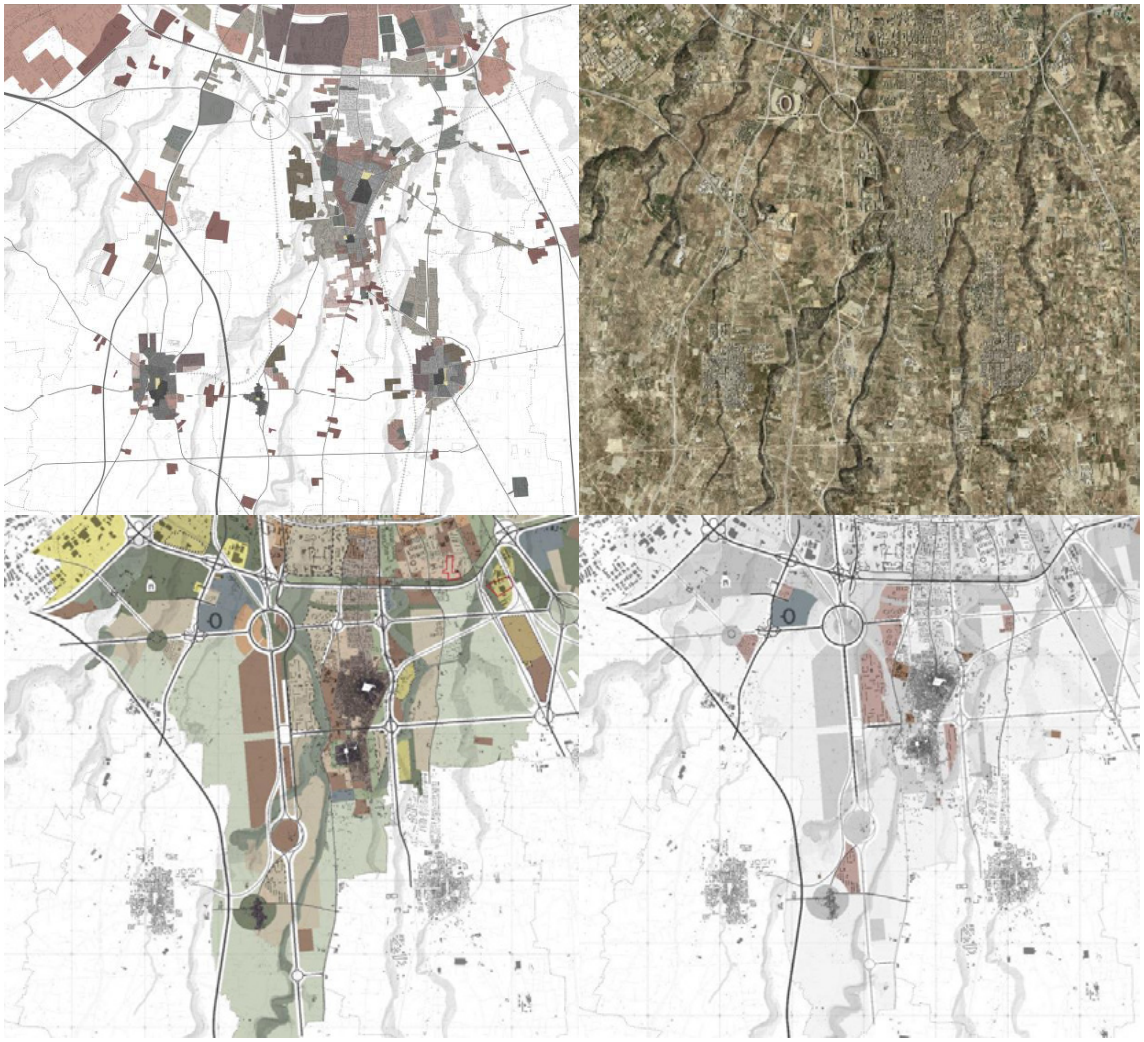


Figure 6. Il territorio di Carbonara, Ceglie, Loseto (IV Municipio di Bari): il costruito, la struttura paesaggistica, le previsioni urbanistiche e quelle attuate.



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The use of Design Codes in Contemporary Urbannism between Tradition and Continuity

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In the contemporary debate on sustainability, urban rules have emerged as critical planning tools, a prerequisite to the design, production and management of efficient and equitable human settlements (UN-Habitat 2015, 7). A growing interest in literature has shown that forms of urban codes have occurred throughout history, helping to shape the built environment in a coherent and consistent way. This paper will illustrate the methodology of design codes, an emergent type of place-making delivery mechanism, which focuses on the physical principles and features that should inform the transformation of a place.

The research stance adopted is grounded on the discipline of urban morphology, conceiving the built environment as an interconnected organism, historically evolved through the complex interaction of anthropic activities and natural phenomena. By highlighting the potentials of the scalar and site-specific approach of design codes, this study will investigate how to connect the hermeneutic phase of reading the built environment with the operative one of transforming it.

If sensitively based upon a typo-morphological analysis of the context, design codes can reinterpret not only the formal aspects of the built environment (words) but also the principles that historically had produced them (syntax), in order to create more efficient environments. The urban extension of Upton, the first built example of contemporary Design Code in the UK, will be used as a case study, against which to examine the methodological process of implementing design coding, and to compare its outcomes, perspectives, and criticism.

Introduction

In broader terms, urbanisation does not represent a new phenomenon in itself, dating back in its primitive form to the Neolithic revolution, when the generation of surplus production and the achievement of a mature social structure made the rise of human settlements possible (Clark 1998). Historically, the consolidation of these organizations relied upon the ability to establish a balanced (Caniggia and Maffei 2001) and friendly (Norberg-Schulz 1985) relationship with the environment, understanding its foundational forces and taking care of it.

After the Second World War, yet, becoming increasingly interconnected with the multidimensional forces of globalisation and industrialisation (Soja and Kanai 2010; Clark 1998) urbanisation has rapidly accelerated, developing towards a model that, compromising the vital balance between the socio-cultural and economic fabric with natural resources, has contributed to the rise of global risks such as environment degradation, social polarisation, and climate change.

Moreover, as suggested by The Prince's Foundation for Building Community ('The Prince's Foundation, 2014), what people consider most crucial in improving their environment (around 85%), is the creation of a strong sense of place and the respect of historic forms, style, materials. In the debate on sustainability, in fact, there is an increasing consensus on the recognition of the role of identity and character as means of sustainable and liveable places that will last ('Valuing Sustainable Urbanism' 2007). While identity is 'established by sameness and difference' (Adam 2012, 176) and provides individuals and communities with 'an image of permanence and stability from the physical objects of daily life' (Halbwachs 1992, 1), character describes 'the general "atmosphere", which is the most comprehensive property of any place' (Norberg-Schultz 2012, 277). Both these categories, hence, are essential to understand the structure of a place, and seem to derive from a combination of emotional and subjective feelings with more objective historical characteristics that a specific place, or rather its genius, makes it happen.

As the problems derived from conventional zoning became apparent, the contemporary urban agenda has shifted towards place-making approaches (UN-Habitat 2015), in order to deliver more sustainable, compact, walkable, and mixed-use projects, and design codes have emerged as a potential delivery mechanism (CABE 2006; Carmona 2006; Talen 2014).

Within this context, the present paper will investigate the potentials of scalar and site-specific approaches of codes, as a means to incorporate sustainable planning principles in a sensitive and responsive way. Since they involve an analytical phase of investigation of the existing context, both in its physical structure and socio-cultural spheres, codes can be conceived as 'telling description of the city' (Lehnerer 2009, 11). If sensitively designed, therefore, urban codes can realise collaborative processes, linking individuals' visions within the collective community, helping to tackle the dialectic of 'the three tyrannies of the planning battlefield' (Carmona 2009).

Literature Review

A growing interest in literature (Ben-Joseph 2005; Carmona, Marshall, and Stevens 2006; Hakim 2008; Lehnerer 2009; Talen 2009; Marshall 2011; Imrie and Street 2011), has underlined how forms of design codes have occurred throughout history, even in a latent way, helping to shape the built environment in a coherent and consistent way. Not only in the Academy, but also in the professional field, codes have recently come into prominence, and comprehensive research projects have been set up such as, among the others, the anthological work directed by Emily Talen 'The Codes Project', the programmes of the 'Form-Based Codes Institute' (FCI), the work of the 'Center for Applied Transect Studies' (CATS), as well as the work carried out in Britain by the Design Council CABE, English Partner, and The Prince's Foundation.

Historically, codes have primarily focused on are streets, squares, and building types, interpreted not only in relation to aesthetic criteria, but also as a means to address social, political, and economic issues. For instance, by prescribing the use of arcades in public

spaces, as in the case of medieval Bern, codes created harmonious arrangements, as well as promoted social interaction, trade activities, and protected the public realm from severe climate (Romano 2004, 118–29).

Original examples are the treatise of Julian of Ascalon from Palestine, in the 5th century, a compendium of construction and design rules prepared to prevent damages to the neighbours resulting from building activities, the Spanish Law of the Indies of 1573, which informed the creation of new towns and colonies, and the Charles II's Act for the Rebuilding of the City of London of 1667, which established a correlation between streets and buildings types, prescribing standards about materials, construction systems, and more efficient planning tool. The main core of these precedents was to establish the hierarchy and pattern of the urban structure and the location of public buildings, rather than detailing architectural features. More integrated and prescriptive rules were developed in medieval Siena, where 'the inhabitants devised an extraordinary comprehensive building code to help unite the three geographically separated communities that made up the city' (Watkin 2005, 208).

In their comprehensive analysis on design codes, Carmona, Marshall and Stevens collected 13 definitions of codes, analysing their nuances and practical implications. For the purpose of the present research, the general definition, according to which current design coding is 'a system that specifies the attributes of urban components or building components to influence the character or function of the whole urban development' (Carmona, Marshall, and Stevens 2006, 241) will be used. Within this system, zoning parameters such as land uses and density are not excluded, but incorporated in a holistic way, becoming the means by which try to treat the 'whole cacophony of development standards' (Duany and Talen 2002, 254).

The typical components of design codes are a regulating plan, building standards, architectural standards, administration, and definitions (Carmona 2006; CABE 2006).

Generally speaking, the process of coding consists of three main phases: documenting, envisioning, and assembling.

Site and contextual analysis is a key stage in the coding process in order to understand the peculiarities of each place and instil character and sense of identity in a new development. Data collection is carried out at the macro and micro scale, through comprehensive forms of surveys. It ranges from neighbourhoods, to urban pattern, architectural types, open space, public greens and environmental characteristics.

In the second phase, codes writers establish the design vision, fix the infrastructural bones, such as streets, blocks, platting, and open spaces, and set out parameters, typologies and patterns through which to achieve a more predictable and certain outcome.

The last phase consists of the actual design of rules and their organization in a logical process, following a scalar approach. The resulting document provides a graphic interface for developers, architects and communities.

Due to the nature of this process and to the different professionals who are involved in it, design codes 'seem intrinsically suited to producing variety with harmony'(Carmona, Marshall, and Stevens 2006, 242), fostering the creation of sense of place and belonging to a local community

Along with these more formal planning systems, cultural rules and customs have similarly played a ubiquitous role in shaping the built environment 'guiding construction decisions, rather than rules designed to achieve specific physical forms' (Talen 2009, 152). Investigating traditional Mediterranean settlements, for example, Hakim recognises a sort of genealogy of coding (Hakim 2008), which has influenced the typical urban fabric of most Mediterranean and Islamic cities based on the courtyard house, whose type incorporates functional, social and cultural aspects.

Similarly, the discipline of urban morphology has promoted the necessity of investigating the physical forms of cities in relation to the dynamics that generated them (Kropf 1996; Caniggia and Maffei 2001; Scheer 2016), and has identified the concept of type not as a mere model to copy, but as a fertile reference with generative planning potentials. Although a rather multifaceted debate has arisen since the second half of the 20th century, mostly regarding the epistemological basis as well as the conceptual elements and vocabulary to build the discipline on, it is possible to recognize some methodological common denominator,

useful to carry out the present research.

Firstly, the recognition of the built environment as 'an enormous set of indices of the human activities' (Kropf and Malfroy 2013, 9) that can be understood in its deeper structure if put in connection within a rather comprehensive historical process.

Secondly, the idea that the built environment is an interconnected organism, which has evolved over the centuries by the complex interaction of anthropic activities and natural phenomena. The methodological key that enables one to investigate this organism can be identified with the 'inter-scalar analysis' (Strappa 2006), by which to recognize the different dimensional and conceptual systems the organism is composed of, and their mutual interaction.

Consequently, since urban morphology investigates the structural relationships between 'form, resolution and time' (Moudon 1997), it has become into prominence to analyse the character of a place (Kropf 1996; Gocke, Duygu, and Fei Chen. 2016) and to seek more appropriate and holistic strategies in the contemporary scenario (Newton 2000; Maretto 2012).

Design Codes in practice: the project of Upton, UK

In seeking to connect the hermeneutic phase of research with the operative one, this paper has focused on the analysis of the Upton Code in relation to the local character survey and the planning reinterpretation, focusing on what has been selected and where; what has been instilled into the rules, and, finally, which results have derived from them.

In developing the Upton Code, the process of building a basis of knowledge took place in the cultural area of the Northamptonshire, whose vernacular heritage was surveyed, recorded, filtered and, then, instilled into the content of the regulations, mostly in the sections 'Character Areas', 'Blocks Principles', 'Buildings Types and Uses', 'Buildings Heights', 'Buildings Materials and Details' (EDAW 2005).

The analysis in this research has been structured into three main categories of urban elements, according to the methodological assumptions of reading the built environment through an 'inter-scalar' comparison between the traditional reference of Northampton and the design interpretation within the code of Upton: the urban organism, the urban block, and the building.

First, at the larger scale the main reference was the urban fabric within the historic core of Northampton, dating back to the Middle Ages. By studying the Ordnance Survey map of 1835, a clear hierarchy of urban structure appears evidence, with an orthogonal system of matrix routes meeting in the very urban core, around All Saint Church, which plays as a knot point of the urban fabric, both because of its relative position within the general hierarchy and because its architectural composition. According to the European tradition, the core of the settlement, is 'solid: a place where civic values coagulate' (Barthes 1984, 39); here, mostly, architecture defines the open space that, within a circular influence, redefines the building in its own essence and urban role.

Another typical condition relates to the recognition of an existing transect along the historical route from the urban core towards Abingdon Street and Wellingborough Road. The structural importance of this route was already appreciated during the Enquiry by Design Workshop in 1999, when the richness of architectural types, styles and the variety of tenures (i.e. Edwardian housing, shops, and workplaces etc.), was identified as a prime source of successful urban principles to instil in the new development.

The survey of this transect-zone focused on the more typical conditions that provide hierarchy and meaning to the whole townscape: the urban façade, the interrelation between the private sphere and the public realm in terms of lots' size, setbacks, heights of buildings, building types, as well as the general character deriving from their combination (EDAW 2005).

The design of Upton shows clear evidence of this lesson. The core concept in the scheme is the legibility of the urban structure, with a rational pattern of streets and blocks, architecturally shaped, which enhances the connection between Upton, Northampton and

the surroundings (Figure 1).

The general hierarchy gravitates towards the central square, where, instead of the predominant religious symbol of the church, there is the complex of the local school, humbler and more similar to the adjacent residential buildings in terms of volumes, language and material.

In this respect, the historical principle of the intensity of the urban core has been adapted to the contemporary socio-cultural condition, creating a laical urban 'room', whose walls are equally defined by houses and civic buildings, in the pursuit of a kind of homogeneity of scale.

Borrowing the traditional fine grain of interconnected street networks, furthermore, enables to achieve a more sustainable transport system, characterized by multiple alternative paths, making trips shorter than 'the artificially lengthy and circuitous dendritic systems' (Condon and Yaro 2010, 49) and promoting walking, biking, and transit.

In fact, the whole settlement is divided into four 'character areas', arranged in order to create a gradient in urban types and space from the intense core to the 'moderated edges'. Through this strategy, also the traditional transect- model finds a critically reinterpretation within the new development layout.

Turning now to the next scalar step, the research focused on the urban block, for its importance in terms of morphological structure as well as for its inherent potentials in achieving sustainable development. Consequently, two blocks, representative of the medieval urban fabric of Northampton and the one of Upton, have been compared to find out to what extent the traditional DNA has been recognized and coherently translated.

With regards to the former, it has been chosen the block lying between St Giles Street, Castillian Street, and Derngate, since its topical role within the urban organism whereby can be seen as a metonymy of the very original built environment.

By analyzing the historical map by John Speede (around 1610) (Figure 2), in fact, some important structural features can be summarized. First, the existence of a territorial matrix route, crossing the core of the city and connecting to the extra-moenia environment through the Western gate, near the Hermitage, and the North-Eastern one, towards St Edmonds. Then, from the intersection of the cardo-decumanus system, a 'connecting route' develops towards St Gilles Church and a further one, presumably a 'break-through route', connects to the Dern Gate, which can be assumed to be built more recently due to its 'anti-polar' position. This is the framework within which the block taken as example has developed over the centuries, incorporating and, consequently, representing the main characteristics of a typical historical fabric, such as the specialization of buildings due to their position, the development of synchronic and diachronic variations, such as the urban corner, and the aggregation of buildings resulting in a range of different actual types. In broader terms, the townscape of the city derives its richness and variety from the complexity of this process.

Moving on to the second example, in order to understand what has been learned from the historical lesson and how it has been translated into the new vision for Upton, a block built between Neighbourhood General and Neighbourhood Edge has been chosen, which is surrounded by High Street, Parkside, Bassett Lowke Dr and West Street (Figure 3). As a matter of fact, this is a combination of one main triangular block and a minor rectangular one, whose general morphology recalls the typical transformation of 19th century city, as if it had been cut through in order to create new routes.Basically this operation enables the planner to achieve two objectives. In the first place a higher density has been obtained, by building along the 'cut' of Padding Lane; secondly, a variety of housing types has been designed, according to the traditional – as well as sustainable - gradient shift from a more urban condition (on the Eastern side) towards a more rural one (on the Western side). Moving on, the urban type characteristics are based on the general hierarchy, involving the relationships with streets, the articulation of urban frontages, the aggregation between different types, and the architectural enhancement of views. One, hence, could recognize the specialization of the urban corner, with a small tower on High street and Park Side junction and a synchronic variation to create a hinge at the opposite corner (between High Street and West Street), the permeability through the built edge by means of private and semiprivate accesses, and the use of vernacular elements and figures.

This last aspect enables us to introduce the third part of the scalar analysis, dealing with the design and construction of actual buildings.

In this respect, the character of buildings represents the most tangible synthesis of the survey's phase. In particular, within the Upton Code (EDAW 2005) 'the Northampton Context' analyses in taxonomic categories those elements that historically have shaped the local townscape, such as roofs, facades types, windows, porches, doors, dormers, chimneys, as well as brick, timber frame, plaster etc.; all of them have been selectively used to illustrate the vision for the 'Character Areas', becoming the basilar reference for the definition of the architectural standards (Figure 4).

Furthermore, the composition of the façade – a face that belongs to the public realm – plays a key role and, because of the disconnection within the architectural organism caused by the industrialization and the technological-addressed contemporary trends, it has become a very controversial theme.

In fact, even though traditional language has lost its original tectonic necessity, the code provides examples of how to use it in a metaphorical way, coherently with the idea that 'art is situated exactly at this midpoint: neither with origins nor with creation ex novo but with distance traversed between the model and its modern repetition' (Porphyrios 1982, 50).

Moreover, as suggested by Alain de Botton, 'the architectural impulse seems to derive from a desire of communicating, of expressing by the language of objects, colors, materials with the ambition to let people know what we are and, consequently, to remember that to us as well' (Botton 2014, 126).

A clear example has been identified in Clickers Drive, a street running along the south-eastern border between the 'cul de sac'-addressed first phase development.

What clearly emerges here is the general interpretation of the facade not as a neutral bi-dimensional plane, but as a sort of three-dimensional device. At the ground floor it is articulated with porches, which connect the building with the earth; the elevation plays as a framework where to project the internal units' logic and, finally, the pitched roof defines the figurative relation of the building with the openness of the sky.

This hierarchy has been enhanced by the use of different characteristic materials and colours, chosen among the local ones and assembled according to typical combinations in order to better harmonize with the natural landscape.

A further important theme relating to the understanding of local topography in depth is the Sustainable Urban Drainage (SUD), a system that has been incorporated into the design the hydro-geological features of Upton, following a holistic approach to masteplanning. In fact, as well as an infrastructure, it has become an element of identification for the place, for its sustainable use by people and, also, for promoting the increase in local biodiversity.

Finally, the potentials of such a realistic approach, have been further refined and improved in a similar work for Sherford, an urban extension of Plymouth. The micro-scale analysis, here, results in a 'pattern books' that, by the organization of a typological matrix, aims to help architects to adhere to the local character not in a mechanical way, but through calibrated and 'coherent' variations. If, for instance, compared with the pioneering project of Poundboury, where there seems to be a lack of coherence between the morphological scheme and the actual realizations, one could notice that in Upton they speak the same language.

The sensitive incorporation of the local character into rules, therefore, can help to 'return to things within everyday life world' after the modernist functionalism-dominated amnesia, so that 'people can readily find meaning in the physical elements that structure place-based experience' (Norberg- Schultz 2012, 278).

Conclusion

This study has attempted to investigate whether design codes have a role in providing rapid, effective planning response within the context of contemporary urbanisation, and the reasons. Given the nature of the subject, which cannot be reduced to a univocally defined concept or entity and which materializes into new forms of urban settlements, this research has followed a qualitative case study approach, aiming to improve the understanding of

the ways design codes work in the defined framework, especially in relation to the essential structures of culture, society, political and regulatory systems.

Within the scope of sustainable urbanism, 'design codes' have become into prominence as potentials to enhance the identity and character of a place. Since rules, in theory, do not belong to any discipline and, hence, are neutral means that characterize relationships within an organism, it is essential to provide them with a solid cultural background.

The case study of Upton, in particular, illustrates how the micro-scale analysis of the built environment, carried out through a synoptic survey, can serve to create new developments based on a cultural area's language. The survey, in fact, records not only the formal aspects of the built environment (words) but also the principles that historically had produced them (syntax) in order to rebuild the roots of an interrupted discourse.

Even though distinctive character and identity of a place have emerged over centuries of anthropic interaction with the environment, a holistic 'synoptic survey' can help to translate the complexity and richness of the traditional reference into a living code and to work in continuity with the historical process of organic updating of the built environment.

In developing Upton, this continuity has been achieved considering three scales: the neighbourhood, the block and the building.

Firstly, from the traditional city it has been incorporated the organic hierarchy of the urban fabric, resulting in the definition of four interconnected neighbourhoods with different typo-morphological characteristics from the urban core towards the edges. Complementarily, the definition of the infrastructure, taking into account not only its functional dimension but also its social, economic, and ecological ones, can help provide more resilient planning responses.

Then, surveying the historical urban fabric has helped to define block principles that are morphological efficient, sustainable, integrated with different uses, and sympathetically connected with the whole urban organism. Examples are the Upton Primary School in relation with the square and the block between High Street, Parkside, Bassett Lowke Dr and West Street.

Third, the Northamptonshire typical building, proportions, materials and details have been interpreted in a systematic and rational way within the architectural standards, becoming the cultural guideline for the construction of new buildings.

Figure 1. Utpon Masterplan (Source: EDAW. 2005. 'Upton Design Code. Version 2.' English Partnership, Northampton Borough Council, The Prince's Foundation for Building Community, 7.

Figure 2. Typo-morphological structure of Northampton in the 17th century: the matrix routes of cardus (orange) and decumanus (yellow), the eastern break-through route (red), the south-eastern connecting route (green), the poles of the Castle, All Saint Church and St Giles Church (Red circles from West to East), the urban nodal points represented by the *cardi*nal gates (red circles along the walls). (Source: http://www.oldmap.co.uk/images/Old-Map-Northampton.jpg, accessed on 12th February 2018).

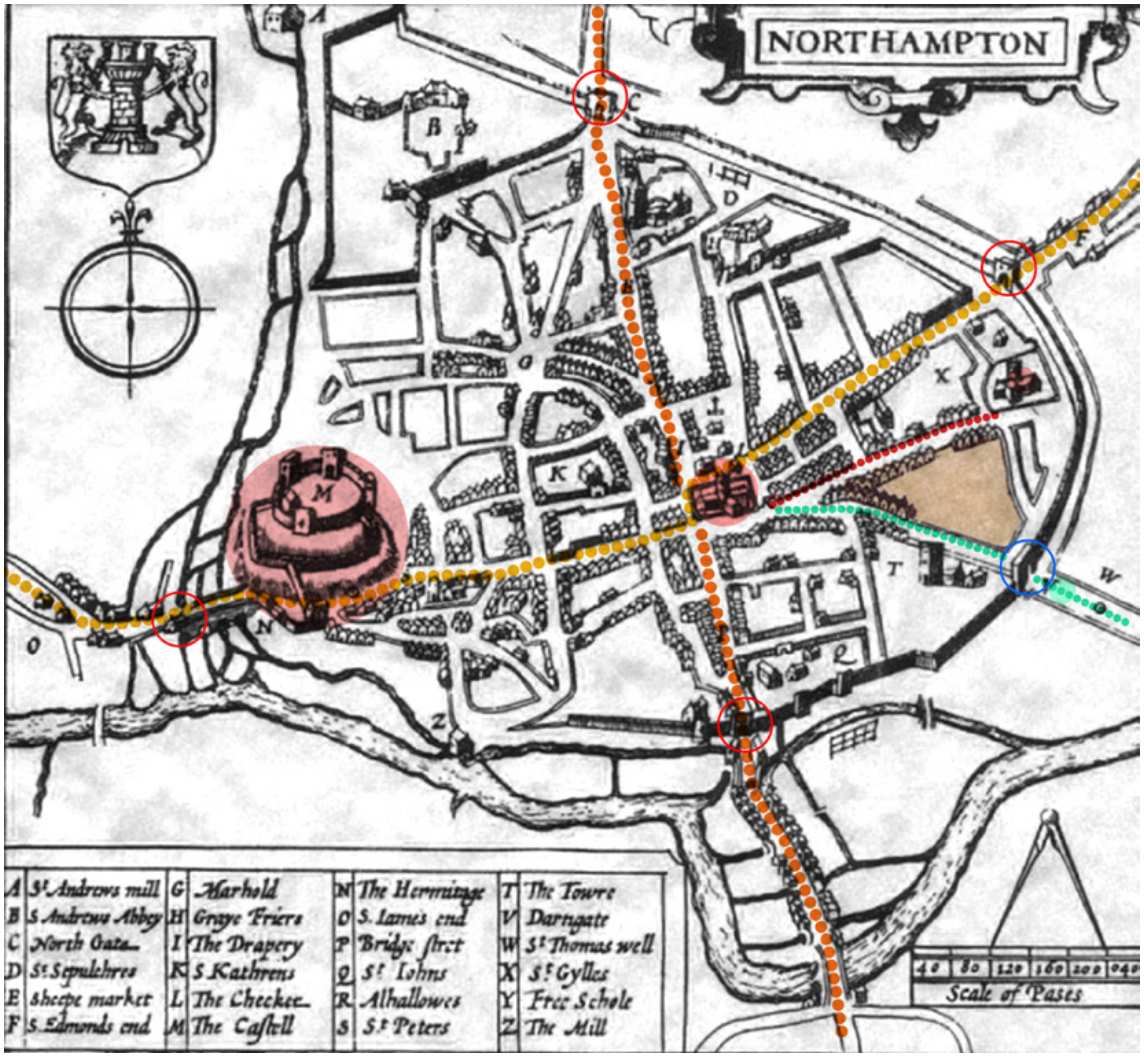

Figure 3. The articulation of the block into different building types and their aggregation (Source: https://www.google.co.uk/maps/place/Northampton, accessed on 12th February 2018).

Figure 4. The Character Areas in Upton. (Source: EDAW. 2005. 'Upton Design Code. Version 2.' English Partnership, Northampton Borough Council, The Prince's Foundation for Building Community, 20-23.

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Taranto from the post-war period to 'the big industry'. For a history of the city between urban morphology and settlement process

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In this analysis of the urban morphology of the city of Taranto we intend to outline the development of the city from the second post-war period to the crisis of industrial production in the eighties. The failure of the large metalworking industry linked to naval and war production has sanctioned a period of deep crisis for the Ionian city starting from the post-war period. From this moment the process of evolution of the city and the definition of the morphology of the new neighborhoods seems to take place in the absence of a credible urban development project. As in the years of fascism, the reactivation of a mechanism of development passes through decisions and plans that go back to national strategies from the local dimension. At the end of the fifties, Italsider established a new basic industry in the city. The city is involved in a state intervention that promises new spaces for economic and social expansion that require a more structured urban settlement process. The phenomenon leads the urban growth of the city to a sudden acceleration that does not stop until at least the seventies and goes beyond the established urban development guidelines involving the areas north of the city. But the renovatio urbis is not only concerned with the expansion areas, but also places the recovery of the old city started during the fascism and interrupted with the start of the world war. At the same time, the new districts are born under the banner of new urbanistic trends and see the involvement of authoritative designers such as Luigi Piccinato, asked to define the new directional district of the city, the studio Nizzoli Associati that deals with some buildings inside the the new industrial complex of Italsider and, finally, Giò Ponti, who is called to cancel "the cultural infamy" (G. C. Argan) of the process of establishing the new Taranto with the project of the concathedral in 1971. The purpose of this research is to make these events, so far documented in a non-homogeneous and fragmented way, as internal to an urban history of the city and connected to the role that architecture as a whole has played in the development of the Taranto area, within the physical limits of the two seas, its projects and its utopias.

Introduzione

Questa rilettura delle vicende storiche riguardanti lo sviluppo urbano della città di Taranto, a partire dalla conclusione dell'esperienza fascista, è il frutto di un lavoro ben più ampio che intende ripercorrere gli avvenimenti urbani, politici ed economici legati alla città nell'ipotesi che questi possano riflettere un carattere paradigmatico per la storia urbana del nostro Paese nella misura in cui, determinando le trasformazioni dell'organismo urbano e della sua espansione, rimandano ad un processo più ampio che rispecchia il cambiamento messo in atto, in questi stessi anni, nelle regioni meridionali.

Con questa analisi della morfologia urbana della città di Taranto si intende delineare lo sviluppo della città a partire dal secondo dopoguerra fino alla crisi della produzione industriale degli anni ottanta quando, il fallimento della grande industria metalmeccanica, ha sancito un periodo di profonda crisi per la città jonica. Da questo momento il processo di evoluzione della città e la definizione della morfologia dei nuovi quartieri sembra avvenire in assenza di un credibile progetto di sviluppo urbano.

Per contro, come negli anni del fascismo, il riattivarsi di un meccanismo di sviluppo passa per decisioni e piani che dalla dimensione locale risalgono a strategie nazionali. Alla fine degli anni cinquanta si insedia in città una nuova industria di base, l'Italsider. La città viene coinvolta in un intervento statale che prospetta nuovi spazi di espansione economico-sociale che richiedono un processo di insediamento urbano più strutturato. Il fenomeno conduce la crescita urbana della città ad una accelerazione improvvisa che non si arresta, almeno fino agli anni novanta, e che travalica le direttrici di sviluppo urbano consolidate coinvolgendo le aree a Nord della città. Tuttavia la *renovatio urbis* non riguarda solo i quartieri di espansione, ma pone al centro del dibattito anche il recupero della città vecchia avviato durante il fascismo e interrotto con l'avvio della guerra mondiale. Parallelamente nuovi quartieri nascono anche all'insegna delle nuove tendenze dell'urbanistica e vedono il coinvolgimento di autorevoli progettisti come Luigi Piccinato, interpellato per definire il nuovo distretto direzionale della città, lo studio Nizzoli Associati che si occupa di alcuni edifici all'interno del nuovo complesso industriale dell'Italsider e, infine, di Giò Ponti, che è chiamato a cancellare "l'infamia culturale" del processo di insediamento della nuova Taranto con il progetto della concattedrale terminata nel 1971. Il fine di questa ricerca è quello di rendere questi eventi, finora documentati in maniera disomogenea e frammentaria, come interni ad una storia urbana della città e connessi al ruolo che l'architettura nel suo complesso ha svolto nello sviluppo dell'area tarantina, all'interno dei limiti fisici dei due mari, dei suoi progetti e delle sue utopie.

Da cittadella del Regno a *città perfetta*

Fino all'Unità d'Italia, l'immagine della città di Taranto rimane legata alla conformazione originaria arroccata sull'isola della città vecchia. (Labalestra, 2014) Soltanto tra il 1865 e il 1883 si immaginò di poter estendere l'espansione oltre il recinto delle fortificazioni bizantine dando il via, con il Piano Conversano, ad un ambizioso progetto di pianificazione della porzione di terraferma ad est dell'isola. Contemporaneamente si diede il via alla sostituzione edilizia di alcuni vecchi edifici presenti nella città antica e alla proiezione di nuove funzioni nella città in via di costruzione. Ha inizio per questa via la crescita della città nuova al di fuori delle mura, e quindi la pianificazione di due borghi distinti: il Borgo Antico e il Borgo Nuovo. Due polarità fortemente contrastanti: la città compatta del Borgo Antico segnata da un intrico di vicoli, dalla prossimità delle abitazioni ricercata per sfruttare al meglio l'esiguo spazio disponibile e per agevolare la difesa in caso di invasioni. Dall'altro lato del canale un Borgo Nuovo in cui risalta un ordinamento moderno e più razionale, che diviene campo di applicazione delle più recenti teorie urbanistiche (Labalestra, 2018).

Il ruolo eminente che il fascismo affida alle istallazioni militari della città e alle potenzialità del ruolo dell'arsenale militare apre un periodo di grandi investimenti pubblici. Nel ventennio che va dalla marcia su Roma fino alla caduta di Mussolini si fanno investimenti enormi per il potenziamento delle installazioni militari e per il cambiamento della città in senso moderno. Seguendo le indicazioni di Gustavo Giovannoni si interverrà nella città vecchia

diradando il tessuto storico e salvaguardando gli edifici monumentali e di valore storico e monumentale (Labalestra 2017). Nondimeno è nella nuova città che si sviluppa sulla terra ferma che le amministrazioni fasciste concentreranno le proprie attenzioni; infatti la volontà modernizzatrice e la retorica di regime possono avere più visibilmente effetto sulla forma dell'insediamento trasformandosi nitidamente in propaganda. Sono queste le ragioni che spingono le amministrazioni fasciste a scegliere di configurare il nuovo lungomare, con i palazzi del potere: il palazzo del Governo, la casa del Fascio, l'edificio delle poste e la Banca d'Italia. A caratterizzare questi edifici giungono da Roma alcuni degli architetti più importanti del momento tra cui Armando Brasini e Cesare Bazzani. Le loro opere devono lasciare il segno e indirizzare lo sviluppo della nuova Taranto in maniera esemplare cosicché Taranto possa somigliare a quella *perla del Duce* prefigurata dal capo del governo come esempio di efficienza e operosità del governo centrale (Labalestra, 2018a).

Il resto lo fa il lento adeguarsi del processo di insediamento alla conformazione del territorio e alla disposizione di quelle piccole attività marinaresche che caratterizzano i differenti centri urbani distribuiti sulla striscia di terra che divide i due seni del mar Piccolo dal mar Grande. Ad occidente, intorno l'area della stazione ferroviaria si sviluppa il quartiere Tamburi-Croce, collegato attraverso il Ponte di Porta Napoli all'Isola che costituisce il nucleo originale del primo insediamento di Taranto. Questa porzione di terra, posta quasi a protezione dei due seni interni, era originariamente una penisola, almeno fino al 1887 quando, a seguito della costruzione del fossato del Castello Aragonese, si realizza un canale che permette la navigazione dal mare aperto fino alle parti più interne del golfo dove sono ricavate le darsene dell'Arsenale militare. Nello stesso anno, viene costruito il Ponte Girevole per permettere il collegamento dell'Isola della città vecchia al quartiere Borgo. Gli altri agglomerati sono invece attestati nella direzione di sud-est dove si trovano i quartieri Tre Carrare-Battisti, Italia-Montegranaro, Solito-Corvisea e Salinella. Ancora più a sud si trovano invece i piccolio centri di Talsano e San Vito-Lama, con il Capo San Vito che costituisce l'altro punto estremo della costa del mar Grande.

La disomogeneità tra queste porzioni, differenti per dimensioni e funzioni, e la separazione tipologica decisamente netta tra le due porzioni principali della insediamento erano già stati affrontati da Alberto e Giorgio Calza Bini con il piano presentato alla prima mostra nazionale dei piani regolatori di Roma del 1937 (Alpago-Novello, 1937). Il piano, non adottato per il sopravvenire della guerra, si pone l'obiettivo di rendere più organica e omogenea la distribuzione di questi quartieri, aprendosi a ventaglio fino ad occupare le aree più occidentali dell'insediamento che permettevano una espansione edilizia compatta e concentrica. Sul finire degli anni quaranta, il piano sarà però ripreso e approvato definitivamente nel 1954 (Arbissini, Schiavoni, 1972).

Seppur non attuato mai completamente, il piano elaborato *con grande maestria e eleganza di linee* farà si che quella "*lunga striscia di sabbia*" che è Taranto, vista in un pomeriggio di luglio, possa apparire come "*un gigantesco diamante in frantumi*". E' così che la vede Pier Paolo Pasolini durante il suo viaggio compiuto a bordo della sua Fiat Millecento. È il luglio del 1959 ed il poeta di Casarsa racconta, percorrendo i litorali di tutta la penisola, l'estate degli italiani giungendo fino in riva allo jonio: "*Taranto è una città perfetta. Viverci è come vivere nell'interno di una conchiglia, di un'ostrica aperta. Qui Taranto nuova, là, gremita, Taranto vecchia, intorno i due mari, e i lungomari*" (Pasolini, 1959).

La città del secondo dopoguerra e la grande "industria di base"

Eppure la fine della guerra, conclusasi per Taranto in maniera particolarmente tragica, coincide con un periodo di congiunture economiche estremamente negative per il territorio ionico.

"*Il tracollo della grande industria navalmeccanica produce crisi, disoccupazione, infruttuosi e disarticolati tentativi di riconversione spesso vanificati dalla scarsa efficienza delle grandi infrastrutture di rete (porto, ferrovia, strade), dalla sostanziale assenza di un progetto di sviluppo della città, dalla storica subordinazione di un'imprenditoria locale cresciuta all'ombra delle commesse pubbliche e dei subappalti.*" (Porzia, Scionti 1989, p.155).

Nella seconda metà degli anni Cinquanta appare, infatti, evidente il carattere strutturale

della crisi in cui versano i settori fino a quel momento nevralgici dell'industria tarantina. Il ridursi delle esigenze della flotta militare e la conseguente contrazione della cantieristica navale all'indomani del conflitto bellico impediscono, infatti, alle due più grandi realtà del settore, l'Arsenale militare e i Cantieri Tosi, di mantenere il livello occupazionale assicurato negli anni della guerra. Situazione resa ancor più preoccupante dall'impoverimento dei territori circostanti e dai pesanti licenziamenti che avevano interessato l'indotto e le piccole imprese navalmeccaniche che, per la mancanza di capitali, falliscono nell'avviare un processo di riconversione apprezzabile.

Negli anni della ricostruzione post-bellica veniva dunque elaborata una prospettiva originale che si proponeva di modificare il modello di sviluppo delle regioni meridionali avviando un processo di sviluppo basato sull'industrializzazione di base. Per questo viene avviato un intervento statale di carattere straordinario e addizionale inteso a creare nel mezzogiorno d'Italia condizioni favorevoli per l'investimento industriale attraverso un piano strutturale basato su un largo consenso politico, sociale e culturale.

L'intervento straordinario nel Mezzogiorno d'Italia iniziato, su iniziativa di Alcide De Gasperi, con l'istituzione della Cassa per il Mezzogiorno nel 1950 (Cafiero 2000), rientra nell'ambito delle politiche attuate nel dopoguerra per provare a ridurre il divario di condizioni di vita esistente in Italia tra le regioni settentrionali e quelle meridionali (Felice 2007).

Per la Cassa viene predisposta una apposita struttura tecnica, completamente autonoma rispetto le pubbliche amministrazioni ordinarie esistenti, con una dotazione finanziaria propria e addizionale rispetto a quella ordinaria dello Stato e degli enti locali interessati.

Nei primi anni dalla fondazione l'azione è destinata alle otto regioni del Mezzogiorno, più alcune aree circoscritte delle Marche, del Lazio e della Toscana ed è volta alla realizzazione di grandi opere di infrastrutturazione del territorio, soprattutto idriche e di potenziamento delle reti di trasporto.

La seconda fase di intervento, è invece finalizzata verso la promozione degli investimenti industriali, sia attraverso una serie di disposizioni di incentivazione degli interventi diretti dei privati, sia attraverso investimenti sulle imprese a partecipazione statale.

Il piano di intervento, inizialmente previsto per la durata di un solo decennio, poi prorogato con leggi successive fino al 1984 e sopravvissuto alla messa in liquidazione della stessa Cassa fino al 1992 – grazie alla costituzione dell'Agenzia per la promozione e lo sviluppo del Mezzogiorno (AgenSud) – ha portato ad una breve "stagione della speranza" per il Sud certificata dalla drastica riduzione del differenziale di sviluppo tra le aree meridionali e quelle settentrionali del paese trascinando – tra il 1950 e la fine degli anni Settanta – il Pil pro capite del Mezzogiorno dal 53% di quello del Centro-Nord fino al 60,5% nel 1973.

Purtroppo, negli anni successivi, quello stesso differenziale ha iniziato velocemente a divaricarsi. *Il nuovo volto del Sud* che la Cassa aveva prefigurato nel 1962, comincia così a svanire dimostrando incontrovertibilmente il superamento di quel paradigma di sviluppo su cui si erano attestati, fino a quel momento, i tentativi di riscatto del meridione. Tra le iniziative principali di questo panorama un ruolo fondamentale viene rivestito dalla decisione politica della nuova dirigenza della Democrazia cristiana post-degasperiana di dare una risposta in termini di aumento di reddito e di occupazione al sottosviluppo meridionale costruendo a Taranto un nuovo centro siderurgico.

Il dibattito per la costruzione del centro inizia già nella seconda metà degli anni cinquanta e si sviluppa intorno le risoluzioni dell'Iri e degli organi di Governo per far fronte al rapido acuirsi della crisi industriale e occupazionale dell'area tarantina.

La realizzazione dell'impianto comincia quindi nel 1960, e si basa sulle previsioni di un allargamento della domanda di acciaio a partire dai successivi cinque anni. Ed è così che il 9 luglio 1960, alla presenza del Capo dello Stato, hanno inizio i lavori per il IV Centro siderurgico italiano in una piana della costa jonica di 60 ettari posta a Nord del porto mercantile, tra la via Appia e la strada provinciale per Statte. Lo stanziamento iniziale previsto è di 400 miliardi di lire con una stima occupazione di impiegati direttamente nella produzione di almeno 6.000 unità.

L'intero stabilimento viene completato nei tempi stimati, tra il 1962 e il 1964, ed è dotato di acciaieria, laminatoio a caldo, di una serie di impianti marittimi per l'approvvigionamento delle materie prime e dell'altoforno che viene acceso per la prima volta il 24 ottobre del

1964 alla presenza del Presidente del Consiglio Aldo Moro.

Nel 1968, a fronte di una importante espansione della domanda, si decide di aumentare di oltre un terzo la capacità produttiva dell'impianto con un investimento aggiuntivo di 200 miliardi di lire e un incremento dell'occupazione di altri 3.000 nuovi posti di lavoro. La crescita dell'impianto viene rivista nuovamente qualche anno dopo, quando vengono avviati i lavori per il raddoppio dell'insediamento. Questa volta si tratta di un investimento di oltre 1.300 miliardi di lire che trasforma lo stabilimento di Taranto nel più grande impianto d'Europa.

Ma proprio quando quest'ultimo ampliamento viene terminato, nel 1975, il consumo mondiale dell'acciaio diminuisce drasticamente. Si tratta di un vero e proprio crollo della domanda globale che costringe l'Italia a varare un grande piano di ristrutturazione della siderurgia pubblica.

Anche a Taranto, nonostante il buon andamento dello stabilimento, dopo una serie di tentativi di rifinanziamento pubblico il ciclo espansivo si arresta. Si giunge così, nel 1992, ad una crisi irreversibile legata anche all'emergere di una complessa questione ambientale che interessa l'intera area del capoluogo ionico. Ogni tentativo di rilancio a questo punto sembra vano tanto che, nel 1995, l'acciaieria viene ceduta ad una società privata a partecipazione pubblica controllata dal gruppo Riva.

Tuttavia, negli anni compresi tra la sua inaugurazione e l'avvio della messa in liquidazione dell'impianto siderurgico, l'impatto dell'economia sulla città è assolutamente consistente. L'intero territorio provinciale conosce quasi un ventennio di prosperità in cui sparisce il problema della disoccupazione, aumenta il tenore di vita pro-capite e si raggiungono livelli di grande benessere. Di pari passo all'industria si sviluppa anche l'edilizia; si incomincia a costruire con un ritmo sempre crescente, seppur in maniera disordinata, con interventi edilizi su aree agricole non ancora raggiunte dall'urbanizzazione e destinati a soddisfare la domanda di settore abitativo di tipo medio. In questo contesto si realizzano però due grandi interventi che, grazie all'autorevolezza dei progettisti, dovevano svolgere un'azione salvifica riscattando quell'infamia culturale che contraddistingue la città sorta dagli anni sessanta (Blandino, 1974)

Si tratta del progetto di un centro di direzionale e residenziale di assoluto valore sperimentale, redatto da Luigi Piccinato, e della concattedrale progettata, tra il 1964 e il 1971, da Giò Ponti (Torricella, 2004). Entrambi gli interventi sono previsti in un'area di espansione contigua all'edificato ottocentesco, nella direzione di via Dante: una delle direttrici principali che, dal centro del borgo umbertino si dirige a nord est verso i nuovi quartieri di edilizia popolare (Paolo Sesto), prefigurando una delle direzioni di espansione preferenziali della futura Taranto.

Nel primo caso siamo di fronte ad un quartiere nato in stretta connessione con i fatti economici e sociali che caratterizzano lo sviluppo della città. Un complesso di edifici alti, distribuiti secondo una conformazione a corte intorno ad una piazza. L'intero complesso è ispirato al quartiere della *Defense* di Parigi e consta di un gruppo di tre edifici direzionali, in parte pubblici ed in parte privati, e di dieci edifici a destinazione prevalentemente residenziale. L'intervento è finanziato da una società del gruppo Iri, la Beni Stabili, a partire dagli anni settanta e prevede di assolvere a tutta una serie di dotazioni funzionali in edifici di grande volumetria che però si innestano su un tessuto connettivo distribuito in grandi spazi vuoti, pedonali e verdi, che dovevano costituire le nuove centralità della Taranto moderna insieme alla grande vela disegnata, poco distante, da Giò Ponti.

Conclusioni

Negli anni '60, la realizzazione del più esteso stabilimento siderurgico d'Italia, sembrava aver risolto la contingenza di una delle più grandi crisi occupazionali della storia. La presenza dell'impianto di Taranto ha infatti garantito per alcuni anni una prospettiva di benessere economico facendo della città ionica una delle città con il reddito pro-capite più alto del mezzogiorno. Questo intervento ha però cambiato il territorio in maniera irreversibile; prima assecondando le consistenti richieste di edilizia abitativa e servizi poi, con la crisi del settore industriale degli anni ottanta, aprendo una crisi strutturale che ha coinvolto nel suo complesso lo sviluppo morfologico dell'intera area tarantina.

Il cantiere del nuovo siderurgico nasce, infatti, su un enorme investimento, sia in termini economici sia di superficie che, negli anni successivi, imporrà le regole di sviluppo non solo al comprensorio ma all'intera città, obbligata a crescere e a modellarsi intorno alla fabbrica. Una volta terminato, l'impianto dell'Italsider, raggiungerà infatti un'estensione di 1.500 ettari di superficie, pari al doppio dell'intera città, a fronte di un costo di oltre duemila miliardi di lire. Da quel momento in poi furono, quindi, i tempi e i ritmi della fabbrica a scandire la crescita del tessuto urbano, almeno fino alla fine degli anni Ottanta, quando, il sistema delle partecipazioni statali che reggeva l'industrializzazione di Stato, inizia a mostrare le sue incongruenze.

Venute meno le prospettive di crescita incondizionata, la necessità di completare i lavori di completamento delle grandi infrastrutture a supporto della produzione industriale lasciano scoperte le gravi ferite fisiche inferte tramite lo sfruttamento del territorio, le emergenze ambientali, paesaggistiche e antropologiche. Rimangono però singoli brani di città in cui quell'utopia di una nuova Taranto capitale industriale del sud sembrano ancora inverati. Ed è forse proprio dalla conoscenza approfondita di queste occasioni che la città potrebbe trovare nuove prospettive di sviluppo.

Note

Per la storia del siderurgico Italsider cfr. il sito del Ministero per i beni culturali, Direzione generale degli archivi, Archivi d'impresa: http://www.imprese.san.beniculturali.it/web/imprese/cron-terr/periodoterritorio?p_p_id=56_INSTANCE_We9n&articleId=23419&p_p_lifecycle=1&p_p_state=normal&groupId=18701&viewMode=normal&templateId=TPL_INTRO_TERRITORIO&tag=taranto

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Value and significance of Philippe the II ordinance in the colonial Latin American cities. Buenos Aires 1532-2018

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The analysis of Buenos Aires urban process of formation, development and transformation shows a common characteristic into the vast majority of Latin American urban settlements. The colonial origin is the reason of their structural uniformity based on the repetition of the urban pattern in each Spanish settlement within the American continent.

Philip II 1573 ordinance represents an urban system, whose beginning resides in the courtyard residential structure, that still maintains its strong value as an instrument for the cities growth. The cultural data linked to the basic house structure (casa de patio) allows the spread of colonial urban structure even to those urban areas of marginality defined today as 'informal' cities.

From this point of view we cannot deny the value of 'spontaneous planning', birthed from the colonials settlements structure, who have been able to guide the cities growth and its transformations from their origin till the most recent urban expressions.

Since the middle of the nineteenth century, however, the crisis of this urban model, due to the lack of legislation capable of controlling the transformation and land consumption, is leading to the formation of a fragmented urban periphery, away from the logic dictated by urban structures of colonial origin.

Looking at the satellite images on the Latin America settlements, we can see a quite homogeneous landscape regarding each city centre, from the smaller village to the big metropolis.

This homogeneity derives from the diffuse use of a permanent urban structure: a grid made by urban blocks, urban paths and public spaces whom synthetic logic is visible at the territorial scale.

The grid consists of a structure of routes, always or almost, orthogonal, surrounding the urban blocks. In some cases, the urban block is substitutes by a void represented by the public space. In this way, the structure can contain the building volumes and the voids without changing his shape.

This constant characteristic of the urban structure derives from the Philippe 2nd ordinance of 1573, which determines the morphological setting of the first Spanish colonial settlements in America. It doesn't consist in a law that imposes an urban shape, but it represents a normalisation of a "spontaneous" practice in the formation of the first colonies.

As you can notice from the dates: 1573, the Spanish colonisation had already taken place at the end of the XV century, repeating an urban scheme, synthesised within Philippe 2nd ordinance, that contributes to its significant diffusion without exceptions.

The presented study in the following notes tries to analyses the reasons for this urban shape, starting from an exemplary case represented by the argentine capital city: Buenos Aires.

Buenos Aires formation and urban growing main characteristics

Spanish coloniser founded the city of Buenos Aires during two occasions: the first was in 1532 by Pedro Mendoza and the second and definitive wan on the 11th of June 1580 by Juan de Garay. In both events, the Spanish interests mainly concerned the free circulation and commerce, the territorial occupation and the area population. In general, the first Spanish colonies plan representations, as the first Buenos Aires settlement, clearly show the distribution scheme of the colonial city that is defined by a regular grid made by blocks just interrupted from the central square, conceived as a void determinate by the absence of one or more "manzanas"[1]. The examples revealing this plan set are several: from Lima to Tunja (Colombia), San Francisco de Campeche (Messico), Huamanga (Perù), Concepcion (Cile), Mendoza, Buenos Aires (Argentina), etc. Each plan contains the same characteristics and the dimensions of the matrix grid always corresponds to a multiple of the base unit, deriving from the "casa de patios"[2] dimension.

From its foundation, the fort and few blocks surrounding the plaza mayor formed the urban settlement. The configuration will remain unchanged till the Bourbonic reform of 1776 when Buenos Aires was named the capital of the Virreinato del Rio de la Plata. From this moment, the commercial importance of the city grows thanks to the influence of the river harbour.

The city grew from the Plaza Mayor with a first expansion 16 manzanas along the river to the west. The urban space was formed from a residential area on the south, a ring of churches surrounding the city centre and from a peripherical rural area with the first industrial activities (textile factories, plants for the production of lime and bricks).

On 1853 were proclaimed the state of Buenos Aires giving a new pulse to the urban growth that will determine the inclusion of new villages as Flores and Belgrano within the administrative borders of the capital city. Despite the spontaneous origin of both the expansion and the previous foundations, the new settlement structure appears strictly related to the "cuadricula", defining the shape and the dimensions of the block.

The Buenos Aires expansion logic followed a radial growing, starting from the main circulation axes, defining peripheral areas hand by hand were consolidated as real urban areas.

1 Urban block.

2 Amato, A.R.D. (2017), *Architettura di recinti e città contemporanea. Vitalità del processo formativo delle strutture a corte*. Franco Angeli, Milano.

Meanwhile, the city conquers the territory enlarging its border from the structural base determined by the repetition of the "manzanas" perpendicular structure, in those areas place of the first settlements start the first transformation of the existing urban space, addressed to reach a higher urban density[3].

The foundation of new centralities still repeats the Philippe the II urban structure of 1573 defining the new settlements from the blocks constant frame developed from the main square, conceived as a missed block.

In these new settlements and in general in all those settlements developing till the end of XIX century, the territorial route, connecting Buenos Aires end the inner parts of the country, will play a fundamental role. Indeed, on them, it will develop the "cuadricola" orthogonal frame and, from them, it will improve the unit aggregation forming the blocks (fig. 4, fig. 6). In this sense, it is possible to recognise the Muratori's and Caniggia theory, defining territorial routes connecting polarities as the starting point of urban space formation.

Territorial routes, even in this case, are the basis of the Buenos Aires satellite development and constitute the matrix of the urban "chessboard".

The block structure defines an absolute constant based on the base unit repetition: the minimum plot of the "casa de patios". The Buenos Aires "manzana" constant dimensions are a cultural data born from the deep consolidation of a way of life, able to measure the space uniquely. Buenos Aires block is a square of 100 m each side whose dimension derives from the housing unit with a weight of 20 m on the street. In the first representations of the Spanish colony, we can see the same blocks divided into four identical parts. That subdivision, represented in the city primary documents doesn't necessarily represent an urban space true definition. But, it just corresponds to the owner partition within the colonised area (representing just a very first stage, Fig. 7). Next cadastral maps show as the block subdivision were strongly related to the dimension of the colony housing unit and, how the size of such a structure, even in the more recent maps, corresponds to the least common multiple of the whole urban shape.

During the end of the XIX century, the demography pressure provokes a huge housing demand increasing. They respond to this phenomenon enlarging the city in the periphery and densifying the existing starting from the unfamiliar plot transformation. It was divided to host more housing unit in a dynamic that, Fernando Diez, called as densification with "reduction and multiplication". This phenomenon will become the origin of multi-storey building transformation.

In this phase of significant urban transformations, start those socio-economic dynamics leading to the marginality of a high number of people. In general, during this period, the informal settlements were made from the immigrants who, as they reached the Rio de la Plata costs, precariously set themselves in a position suitable to achieve the workplaces. Today we can find a track of this urban phenomenon within "la Boca" district where the old precarious European immigrants buildings are now a touristic attraction and host commercial spaces, far from their first housing function. In general, European immigration, particularly the late XIX cent one, stay in poor condition just for a few whiles, reaching the wellness relatively in a short time. Another sort expects the later immigration, coming from the Latin-American continent. In fact, in the first XX cent, to the immigration increasing doesn't correspond to economic growth. In this phase, the informal settlements become more stable, and they consolidated themselves, forming a proper urban fabric within the city characterised by enormous social and economic problems.

The urban block matrix: informal formation and development

From the beginning of XX cent, the city of Buenos Aires had two different urban shapes, the formal city and the informal one. What we deduce from our research is that the expressions of the two forms start from the same logic and the same origin. This starting point is the housing base unit able to respond to the society living needs, regardless of their economic condition. The Latin-America courtyard organism derives from the Andalusian

3 Diez F. E. (1996), *Buenos Aires y algunas constantes en la transformaciones urbanas.* Buenos Aires 1996

house imported from the coloniser within the whole continent. From this structure through the aggregation of units it is possible to form the urban environment including the urban plock and the public space. This rule works in every urban expression generated from a courtyard organism, either the formal neighborhod or the informal settlements. This contast play a fondamental rule becouse it allows us to understand the urban dinamic even in those spontaneous areas in which the illegal occupation couse the absence of every kind of documents essentials for the reconstruction of the development process.

So we can assume the origin of both the urban fabric are related to the courtyard organism, intended as the structure formed through those rules able to drive the evolution and the transformation, according to the socio-economic needs. From this assumption, we can explain many phenomena related to both the urban expressions and prevent the transformation process from planning the development.

In our case, the processual derivations of the "casa colonial de patios" constitute the basis of the urban structure of the Latin American city. A central longitudinal axis defines the housing organism and, along it is developed a succession of patios, around which have built the various rooms of the house.

From the early nineteenth century, the population growth causes the transformation of this housing structure. This process is always direct to create smaller units with a higher density capacity, without altering the urban fabric.

The first transformation, developed in the second half of the nineteenth century, defines an organism called "casa de medio patio" or "casa chorizo" (1870-1915). Its plan derives from a virtual division along the " casa de patios" central axis. Its dimension reaches the minimum space comfortable for living and healthy: 4m weight for rooms and 4m weight for the patio and the open corridor.

The growing housing demand was causing the housing units compression. F. Diez defines this phenomenon "reduction and multiplication" and, it will become the basis for the multi-storey house's construction. This process brings to the formation of the "vivienda en hileras" (1890-1940), constitutes from a small rooms succession along with the plot and, in for each patio we have a unit. A corridor placed on a plot side allow to reach each house through their patios and divided from them by a low fence. This corridor takes place in the same area of the old courtyard, using aside as a semi-public space.

Together with the densification for "reduction-multiplication" starts the vertical development process, with the overlapping of the ground floor plan on the first one, maintained unchanged the distribution. Again to respond to the housing demand, the transformation process leads to the "conventillo chorizo" that, without any distributive change, defines a multi-family building in which one single room host a family, sharing the services. The difference between the "conventillo chorizo" and his mono-familiar referent, is a stair in each patio reaching the upper floor through a balcony.

A parallel process concerns the "vivienda en hilera doble" formation, this structure uses two next plots, corresponding to the original dimension of "casa colonial de patio". In this case, the adjacent units are connected through the axial path, defining a perpendicular connection with the public street. Soon units will be opened on the new open-air corridor. This new possibility will give the start to the following transformation in the process: the path will become a proper public space provoking the formation of a main facade at the entrance. The most significant change concerns the position of the patio in the new building: it takes place behind the front space, and it forms the new type called "pasaje".

The analysed process concerns the formal context of the Latin-American city, influenced by socio-economical, normative and planning phenomena. On the contrary, when we speak about the informal settings, the normative and planning issues don't enter in the process and win significant importance the socio-economical problems. Beyond the finding of proper construction material, the aspects influencing the urban shape also depending on the soil occupation way, strongly related to optimising the space, even sacrificing a clear division of the ownership, the distinction between public, private space and the healthy of the housing unit and the urban fabric.

The starting hypothesis of this research, born from the interpretation of the two different

urban expressions, find in the "casa de medio patio" housing organism, the common denominator of both urban fabric. This building type, strongly related to the regional way of life, is continuously used within the informal context, forming a very homogeneous urban tissue.

In this spontaneous settlements, the first problem is related to the land ownership recognition, solved through the construction of a fence whose dimensions usually correspond to the "casa de medio patio" one.

Together with the plot division process, they build first the fence and then the proper house. As the "casa de medio patio", even the first shack they carry out corresponds to the main courtyard organism characters. The closed fence defines the principal structure and, the covered house space occupies the area around the wall, configuring the open-air distributive courtyard.

The first two living cells always occupy the street side, leaving space on aside to allow the entrance directly to the courtyard and through it to the proper house.

The second phase consists of an enlargement of the built space within the courtyard, defining a structure with two spans (with two cells each span), the first two directly connects with the street suitable for work or commercial spaces, and the other two for living spaces.

The third phase corresponds to the step in which the unit becomes to host more than one family. During this phase, they build two more cells as a further housing unit at the bottom of the plot. In the more dense areas, the housing demand requires new buildings, within the parcel. In some cases, the housing need lead to defines units without taking care of the salubrity issues. It means they construct houses with blind rooms or without the primary facilities needful for a healthy life.

During the Latin-American courtyard house developing process multi-family buildings already belong to the first steps. That organisms, even if, at the early stages, try to conserve the privacy of the courtyard, they soon will surrender to the surrounding urban space demography demand, sacrificing the exclusive patio use. However, this space doesn't lose importance, on the contrary, it wins that becoming the distribuiting space of several units, forming a sort of community as a larger family. In this sense, the courtyard acquires a significant identity value being the commonplace of a small society. The transition from single-family fences to those structures able to host more housing units is possible thanks to the main character of the organism: the court-yard house lives thanks to the open distributive space around which the various housing units stand.

As in the "pasajes" of the formal city, also in the informal settlements, we can find paths entering within the block, distributing the units till the bottom of the plot. These paths could become very intricates connections at the border between public and privates spaces.

In the informal city, the urban block doesn't maintain the standard dimensions as in the formal block happens but, its matrix and its relation with the public streets remains the same. For this reason, the two urban expressions are perfectly confrontable unless the apparent diversity.

In this way, we can understand as, within the city of Buenos Aires and more specifically within the Latin-America urban environment, the urban shape results strongly connected to the housing morphology[4] and its relations with the urban space. From these two main carachters, we have seen as the urban shape is generated either in the first historic settlement or in the last urban expansion.

The colonial scheme crisis in the more recent urban expansions

In general, the rule gave from the colonial setting works not only for the expansion phases of the formal city but also for those areas, borning from the illegal occupation, not subject to any normative rules or planning.

Actually, in both cases we can speak about the normative absence, considering that urban planning mostly intervenes (as in Philippe II ordinance) when the urban fabric already exists. The urban planning, from the early 800 till today, have concerned the

4 Intending the shape and the structure provoking the transformations that represent the process.

urban transformation of the existing, without previewing future expansion.

Even today, urban rules only deal with the urban shape and its transformation, ignoring how to intervene in the empty areas. Everything regarding the city extension has enormous gaps as the absence of any law regarding the change of intended use of the land, from agriculture to urban space.

This gap, overall in the last contemporary urban expansion, determines the crisis of the colonial urban setting. Recently we assist to a phenomenon, drives only from the real estate dynamics, provokes the formation of the so-called "barrios privados". These new private settlements, even of vast dimensions, are entirely fenced, and they exclude any relation with the surrounding environment either from a morphological point of view or with the street infrastructure[5].

If till this moment, the expansions start to the growth of urban centralities connected through regional streets, till defining a unique urban organism based on the same setting. With the development of this new trend, just linked to economic issues, the city growth ignores the street infrastructure creating urban environment isolated from any local connection.

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Conclusions

The study of the formation and growth dynamics of Buenos Aires and in general, of the Latin-American cities discovers significant socio-cultural aspects related to the urban shape. What seems evident is the strong influence, in the city formation, of the "cuadricula" setting principles. Those principles gave form to the first settlements during the XVI cent, but they still maintain a fundamental character in the use of the urban space and his growth, in the majority of the urban expansions. The Philippe II urban block today is used as a measure unit firmly consolidated in the Latin-American inhabitants' consciousness: to walk five "cuadras" means to run across 500 metres; move from a point to another fo the city means to calculate how many block to walk in two orthogonal directions or, if not, considering the presence of a "diagonal"[6], cutting the urban fabric, conceived as a rule exception.

In a certain sense, the spontaneous reiteration (don't imposed from any planning) of this structure allowed the rational city expansion and represent the law able to drive the transformation of the existing urban space, hosting higher density than the original one. These transformations also produced aberrations, overall considering the formation of intermediate housing types, then corrected through the use and the consolidation of contemporary way of life[7].

This analysis would induce us to suppose the transformation process study and interpretation, should be part of the planning to drive the transformation direction. As demonstrated through several urban morphology[8] types of research, this approach can take in count the original dynamics and interpreting the social and economic needs, can translate them in urban form.

In Buenos Aires case, to understand the significance of the "cuadricula" setting means, not only, can define the transformation in continuity with the existing but, interpret the consequence when the original setting is not applied ("barrios cerrados", etc.). When we speak about "cuadricula", we are not only referring to orthogonal streets with identical

5 The only connections between these settlements and the urban space are through motorway from the rural areas to the city.

6 The "diagonal" is a restructuration route that cut (demolishing) the existing urban fabric to connect two polarities. This cut forms irregular and triangular blocks (see Diagonal, Buenos Aires)

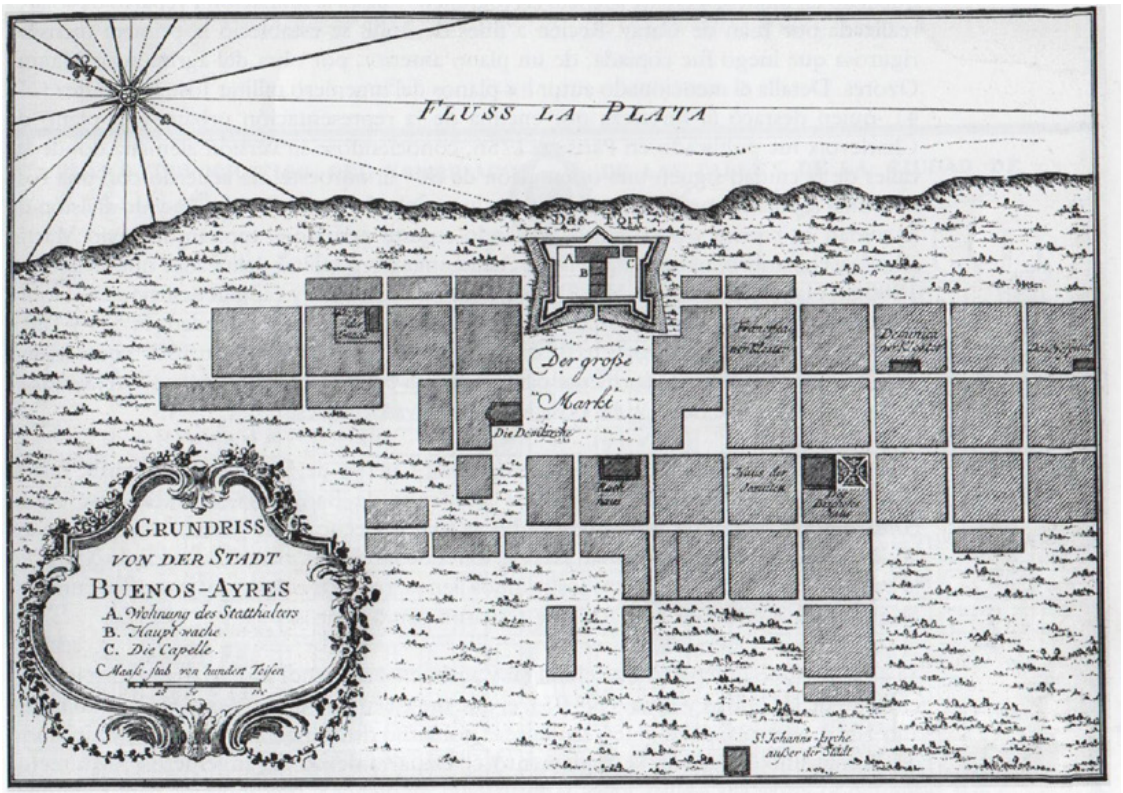
7 See Diez F. E. (1996) Op. Cit. about the formation of the "edifico entre medianeras 45" or the "departamento cajon" pag 53-61

8 The muratorian School today represented from the research group headed by Giuseppe Strappa and the urban morphology studies headed by Conzen and Whitehand

blocks but to their matrix structure and its capacity to host transformations.

In this sense, it would result essential to understand the value of this "spontaneous planning" able to define a contemporary metropole structure starting from a base plan conceived for a rural settlement. Nevertheless, the colonial setting crisis, showed in the modern urban expansion, is provoking the formation of very fragmented urban fabrics. This phenomenon, in a background with a lack of control, as the Latin-American one is, could cause the interruption of that urban process able to unify different urban settlements in a unique organism.

Figure 1. Buenos Aires plan 1756 (source: P.Charlevoir Histoire du Paraguay, Paris, 1756); From the left: central area plan of Lima, 1793 (source: Archivo General de Indias, M. y P. Perù y Chile, 7); foundation plan of Concepción (Chile), 1765 (source: Archivo General de Indias, M. y P. Perù y Chile, 49); partial plan of Santiago de Chile, end of XVIII century. (source: Museo Naval, planos 18-1); foundation plan of Mendoza (Argentina), 1562 (source: Archivo General de Indias, M. y P. Buenos Aires 221).



Versión en alemán del Plan de la Ville de Buenos Ayres publicado por Pierre François Xavier de Charlevoix en 1756. En realidad, se trata de un plano del siglo XVII.

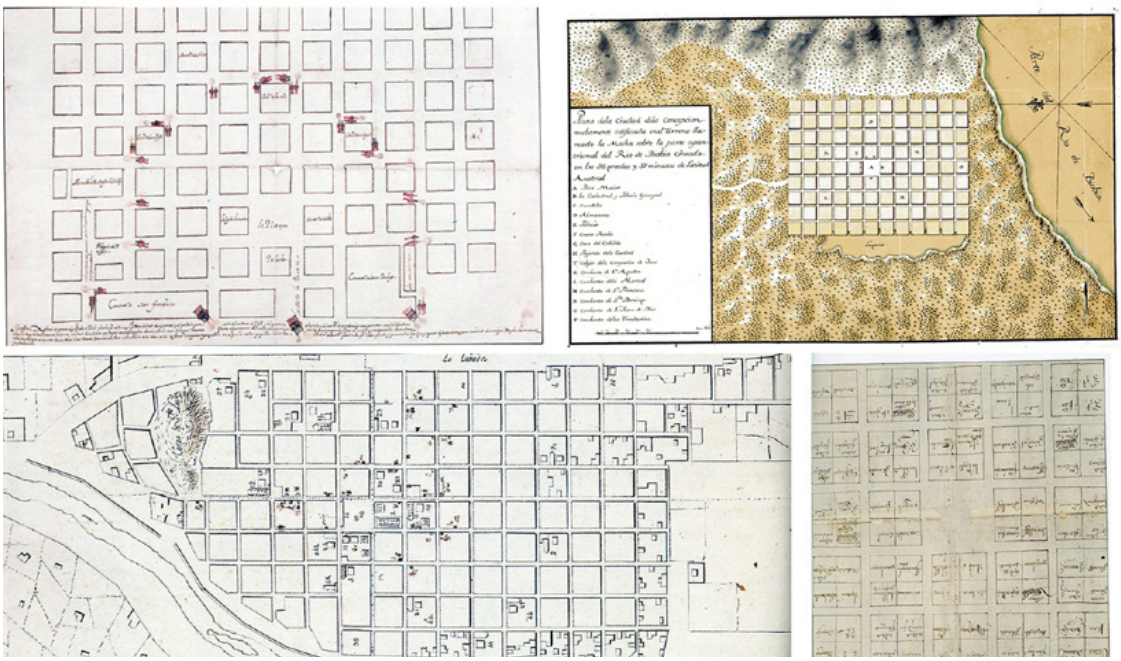


Figure 2. On the left, plan of the metropolitan area: De Chapearouge 1890 lamina n. 058 (source: Ciudad Autónoma de Buenos Aires. 1 Mapa Oficial, Ministerio de Desarollo Urbano, Buenos Aires Gobierno de la Cidad, 2009); "Tragaleguas 1888". Razón: "Osvaldo Rocha por Sdad. Terreno Puerto Madero. Para establecer un Mercado en terrenos del Puerto Madero". Block formation scheme (Source: Instituto Historico de la Cidad de Buenos Aires, Legajo 785 – 1888 Economia – Carpeta 19184 and author elaboration); Buenos Aires 1583 plan and Catastro de Beare 1860-1870 (Source: Ciudad Autónoma de Buenos Aires. 1 Mapa Oficial, Ministerio de Desarollo Urbano, Buenos Aires Gobierno de la Cidad, 2009)

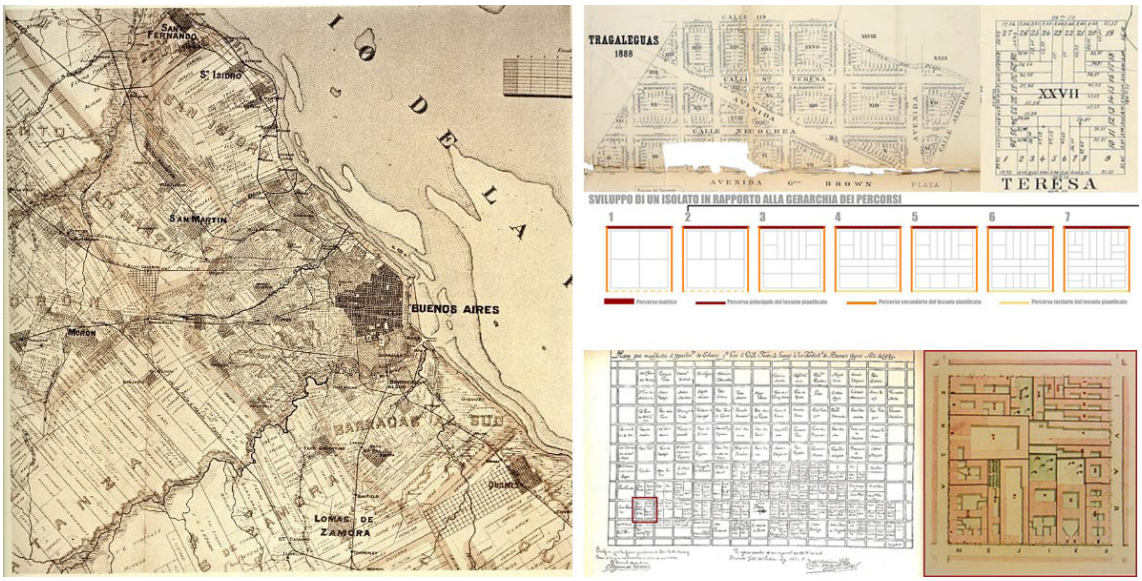


Figure 3. Developing "casa de patio" scheme (source: author elaboration); Housing developing process within the "informal city" (Source: author elaboration); Block take-over of Villa 31 slum. (source:libre de proyecto Social _FADU Gabriela Bandieri)

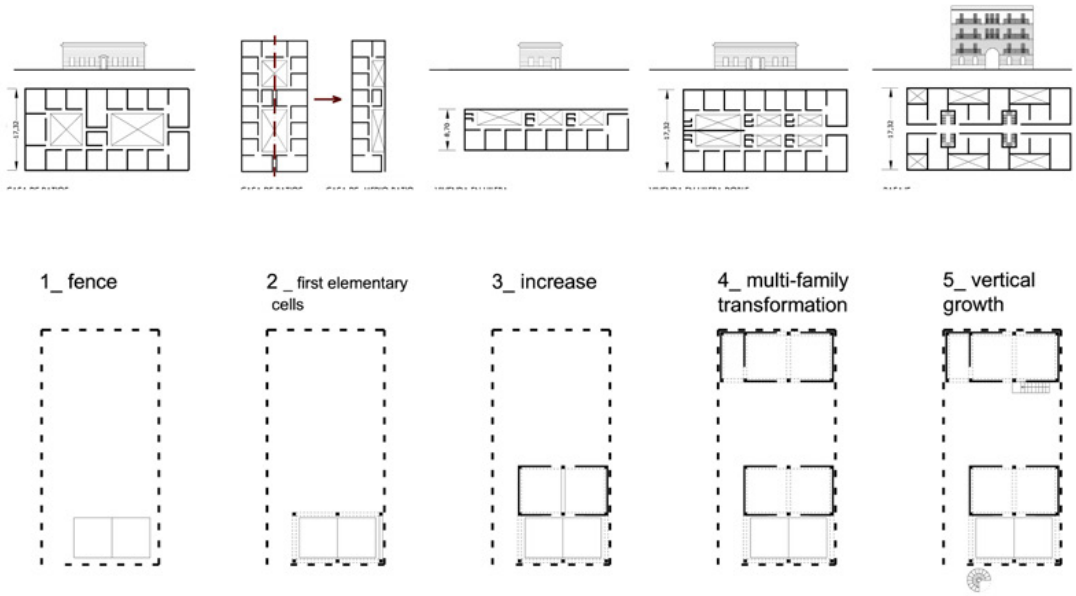
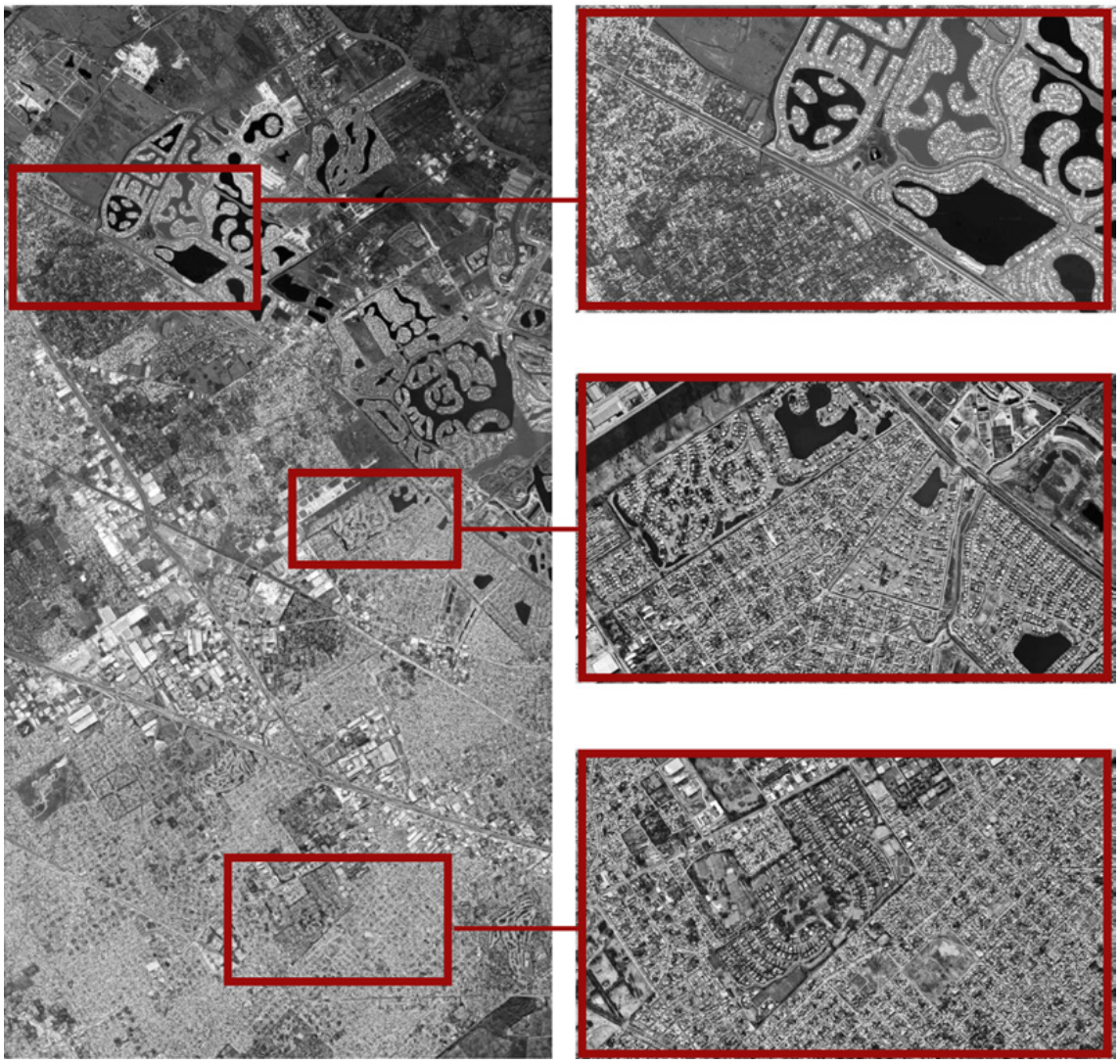


Figure 4. "Barrios cerrados" urban morphology, Buenos aires sud-est periphery (fsource: google Earth and author elaboration).



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Urban village and its transformation in the city center of Bandung

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Keywords: *Urban village, Building transformation, Urban form, City center*

The development of cities in Indonesia begun since the Dutch Colonial era. In common, city centers were established in places that already have residents, near native villages, so cities become human settlements. As time goes by, cities experience various modification. The city growth makes the before native village into an urban village, located in the city center. The existence of the urban village as a residential environment in the city center is considered decent to balance the expansion of the city center to become a commercial district. Nowadays the existence of the urban village is increasingly urged by commercial functions. The decline process of the urban village is considered interesting to be studied because the building transformation that occurs has an impact on urban form.

The city center district, which at the beginning looks harmonious with rows shop houses on the roadside and the urban village behind at this moment have transformed. The shop houses are not whole anymore, divided into smaller units with different shape and styles. Most of shop houses extends backward into the urban village. What caused the building transformed? How will the building transformation affects the urban form?

The great number of building transformation is feared to eliminate the urban village as a residential district in the city center. It is also feared that the city center will not be a decent residential district any more, but become a commercial area, left empty with no inhabitants after office hour. Is this the future urban form in Indonesia?

Introduction

The fast increasing number of population and the limited area of a city lead to sub-urbanization. Sub-urbanization not only widens the city area but also lengthens the mileage to the city center. The large number of commuters causes traffic congestion at city gateways during the morning and evening time. This inconvenient condition leads to urbanization. The city of Bandung also experiences this problem. To mitigate it, more residential buildings in the downtown area are in demand. However, due to the limited area of the downtown, to accommodate the urban flow residential buildings are built in the downtown area by compacting any possible area that has not been built. The area that is still possible to be built is the urban village areas, residential neighborhoods originated from native community villages located in the middle of the blocks behind a row of commercial houses. The location in the city center is believed to be potential so that it is in great demand both by developers and by individuals. This can be seen from the transformation in its buildings that have turned into new modern houses, apartments, shopping malls, etc. (Soewarno, 2013). Why does building transformation occur in the urban villages? Does the difference in land status between commercial buildings and urban villages become one of the causes of the transformation? How does the transformation take place? It is expected that the transformation will not change the city center into a commercial area but will remain as its original condition, i.e. a residential environment

Methodology

According to Habraken (1983) a site can be transformed by addition, removal or change of the position of its elements. Meanwhile Antoniandes (1990) stated that transformation is a slowly changing process until it reaches its peaks. In urban villages the transformation could be caused due to the extensive change of their land lots, enlarging or decreasing. The transformation of the lots is then followed by the changes in the elements above them, i.e. the buildings, as an effort to increase the space adjusted to the area and the form of additional plots. To take more accurate data for the purpose of this research, grounded method is used. Some study cases were chosen based on typology transformation.

Forming process

1. The history of block formation in the city center

The city of Bandung is surrounded by mountains with an average height of 768 meters above sea level. In 1810 the Dutch colonial government established the city of Bandung in line with the construction of a post highway that stretched from West to East Java. The city center of Bandung is placed on the side of the highway post close to the indigenous population.

The downtown was an open field called Alun-alun (town square). Important buildings were erected around the square: Dutch trade offices on the North side, local government office led by the Regent (Residency) on the South side, Mosques and tombs on the West side, and commercial area on the East side. This kind of city center structure is actually a typical downtown typology in Indonesian big cities.

Furthermore, the grid pattern is applied to the surrounding area. The area that was originally in the form of kampong, gardens and vacant land is divided into blocks surrounded by highways on all four sides.

The market was placed not far from the center of the city which made it have an important role for the city's economic development, starting from the construction of houses on each side of the block. The increase in city economy encouraged the buildings on the side of the highway that were close to the market to add commercial functions so that the buildings were transformed into residential buildings while the inside of the block were still urban villages and gardens (figure 1).

2. The urban village

Urban villages in this paper refer to the rest of dwelling native which occupies every block (the inner block) at the city center of Bandung. The original urban village could be identified by its typical physical building; one story with non-permanent materials such as wood construction with bamboo woven walls, while the commercial buildings in the outer block are usually 2 or 3 story brick wall buildings. Besides the dwelling in the inner block there were also fields, trees and rice fields and ponds (figure 1).

The Colonial Government acknowledged 2 kinds of land statuses: informal and formal. The lands in urban villages are dominated by customary lands that have their own markets and ownership proof that were not registered to the government, and thus are referred to as informal lands. After the Independence, the lack of information made the land owners fail to register their lands and therefore the land statuses still remain unchanged to date.

The rapid development of the city causes the distance to the city center further and longer. The large number of the commuters causes congestions at every gateway of the city. This is a driving force for the migrants to enter the city center, and they commonly seek housings close to their workplace.

Urban villages become the potential areas to solve this problem as they provide cheap housing as well as are conveniently close to working places. This situation pushes the building transformation in the inner block.

As a consequence, the buildings in the outer and inner blocks currently look similar and there is no more open space left in the inner block since it is already full of buildings. High housing demands and limited land at the city center encourage densification. They have transformed the urban villages to dwelling area in the city center.

3. Shop houses

A shop house is a building form that mixes its functions both as a residential house and as a commercial shop. This mixed-use building form characterizes the historical centres of most towns and cities in the Southeast Asia region. As the first mixed use building type in Indonesian cities, shop houses are commonly seen in the downtown commercial areas. Their first floors are used for the shops and the second floors are for the owners' residential activities. In the early period of their existence, there were 3 types of shop houses according to their architectural style, namely: traditional, Chinese and European styles.

Rows of shop houses has become commercial area identifying big cities. Thus, they have commercial functions in them. Even though the residential and commercial functions are in one building, the physical appearance of each floor differentiates them. A spacious inviting openings on the lower floors reflect the function of the shop, while the upper floors are more closed like a house and generally has a balcony as a terrace or veranda (figure 2).

Today there are variety of shop houses: single building, duplex or complex of shop houses. The complex of shop houses are not only built in a commercial area but also in every new housing complex purposed for commercial use.

4. The building transformation

At present there are a lot of shop houses in the city of Bandung which are no longer intact. They have undergone several changes including function, physic and style.

According to my research result, there are 3 types of building expanding:

1) Vertical development.

Trading is a skill that is inherited in a generation where the learning process is not formal but through routine activities carried out by each member of family such as serving buyers, bookkeeping or storing goods. By carrying out these activities parents indirectly share their knowledge so that every child tends to open their respective stores.

On the other hand, houses including shop houses are inheritances that can be shared. The distribution of lots and buildings occurs transversely so that each unit of the division still has access to the road in front of it as access to the store. The success of trading from the next

generation demands greater space and thus limited land encourages vertical development by increasing the number of floors. This condition is evident in the row of building houses where the old architectural style could be identified in the un-built houses (figure 3).

2) Horizontal development.

Not all inherited trading businesses are successful, those who are less fortunate will consider living the downtown area highly pricey. As a consequence, they prefer to sell their buildings, and the first offer comes to their siblings who usually live in the next unit. This is a good opportunity for the successful shop owners because the buildings and lands in the downtown are very exclusive and the offer is relatively scarce.

Another possibility of expansion is to its back side which is an urban village. Buying lots in the urban village and combining them with their shop house might fulfill the expansion needs but it takes time and costs a lot of money to change the status of the land.

This type of development is the most difficult to identify because the physical appearance of the buildings have not changed. In some cases, the changes occur only in the residential units, from the one level non-permanent to the one level permanent house (figure 4).

3) Horizontal development followed by vertical development

This type of development is started from the horizontal development which is then followed by the development in vertical direction. This type makes the building houses look larger compared to the other original buildings in the vicinity. In addition, this type also tends to create irregular building shapes depending on the number, size and shape of the plots combined. Since the plots of the buildings in the urban villages tend to be easier to get, this type of development is the most common one to find in the city of Bandung (figure 5).

From the field observation conducted in this study, those 3 types of transformation give two different effects to the urban form, they are:

1) The irregular and huge building structures.

At present time not all units of shop houses are transformed into vertical buildings. The remaining units still use the original style which interestingly make them look peculiar as they are distinctive amongst the neighboring buildings. Most of the units have undergone transformation which make them have irregular building structures. The considerably ugly-looking irregular building structures are from those which underwent the horizontal followed by vertical development. These irregular looking buildings have two 2 types of land ownership statuses, they are:

- Private land ownership: the private land ownership will expand their land slowly by buying piece by piece land in urban village as well as the development. The vertical development could happen gradually in accordance to the commercial requirement and economic condition. The direction of development depends on the direction of expanding land lots, could be to the right or left side or back side depending on the opportunities.
- Investor land ownership: unlike the formerly discussed land ownership status, this ownership involves another party, i.e. investors. Considering the foreseen potential, some investors will make quick development on the units promising financial profit to the banks. This type of transformation usually creates more regular building shape because the new transformed units commonly have more uniformed size. The size is usually way bigger compared to the neighboring buildings as one building consists of several shop-house units to rent or sell.

2) The disappearance of the residential function

The city center was originally a residential environment where commercial and residential functions are placed together. Commercial activities occur in the outer block of the shop-house buildings, while the residential is located in the inner block which are the native communities known as the urban villages. The shop-houses are commercial building type accommodating the residential and commercial functions. At a one story shop-house the commercial function is placed at the front side, while at a two or more story shop-house it is placed on the lower floor. The disappearance of the residential function mainly occur on shop-houses with vertical development. It is due to the development of the building owners' trade business which demands more rooms for other commercial activities such as goods storage warehouses, administrative offices and services so that the rooms designated for residential purposes are used to accommodate the demand. It makes the buildings lose

their residential function. The disappearance of residential function causes the buildings used for the commercial function merely. These buildings are not occupied during the night time. Unlike the case with the horizontal development houses, the commercial function remains in the shop-houses located in the outer block while the residential function occupies the buildings on the back, in the inner block which are the buildings resulted from the development towards the urban villages.

In the type 3 of building transformation, horizontal development followed by vertical development, there are differences in the function of the shop-houses according to the land ownership. In the private owned shop-houses, the occupancy function is placed in the inner block similar to those of the type 2 of which the extended buildings are located in the urban village. The investor owned shop-houses, on the other hand, are commonly used for commercial function merely. The lower floors are functioned as the store, while the upper floors are used for offices, storages and workshops.

Based on this research result, of the three types of building transformation all the shop-houses on the outer block are no longer occupied. Their physical appearance still resemble shop-houses but they are no longer inhabited by function, only used for trading activities from mornings to evenings and left empty at night. Unlike the case with the inner block which still has a function of residential although many cases of the development are horizontal (type 2 and 3). The difference is on the people who live in the houses as most of the residents are shop owners and migrants.

As mentioned earlier, there are 3 types of transformations in the buildings within the residential blocks in the downtown commercial area. Those transformations start from the buildings in the outer block which are then followed by buildings in the inner block or in the urban village. The transformations that occur in the urban villages are dominated by cases of horizontal development, both without and with vertical development. The urban villages, which were originally villages of indigenous people, have now become common residential neighborhoods inhabited by a mixture of indigenous and Indonesian descendants of China as the majority of shop owners.

There are many cases of the merged land plots changing their land status in the urban villages from informal to formal land with the land ownership proof issued by the Government of Indonesia.

Conclusion

Of the three types of transformation, the land ownership status has an important role in changing the function of the buildings. The shop-houses as the first mixed function buildings are no longer match their functions even though they are not changed physically. Additionally, the land ownership status also has the potential to change the urban form starting from the change in the building heights and is followed by the change in the shape of the buildings. The incorporation of formal and informal lands in the case of the horizontal development encourages the creation of irregular forms because the shape of the plots in the urban village are derived from gardens or rice fields that are formed cosmologically different from the outer block plots which are measured mathematically. The optimization of development in the combined plots (formal and informal land) makes the building forms identical with their irregular shapes. This, as a whole, has an inevitable impact on the current form of the city.

Figure 1. The development of city centre from year of 1800s (source KITLV), 1915 (source: Siregar, 1990) and the current situation (source Google Earth, 2018): grid pattern created blocks..

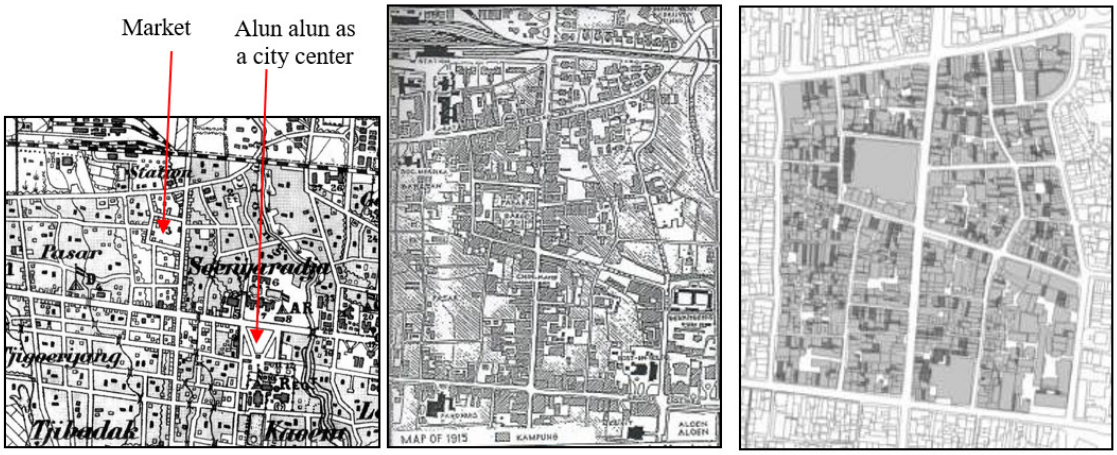

Figure 2. The morphology of shop house: the city centre in 1800s (source KITLV), in 1990s (source Voskuil, 1996) and the current condition (source personal documentary, 2018).

Figure 3. Vertical development: from one shop house could divided into several unit. The success of trading from the next generation demands greater space and thus limited land encourages vertical development by increasing the number of floors.

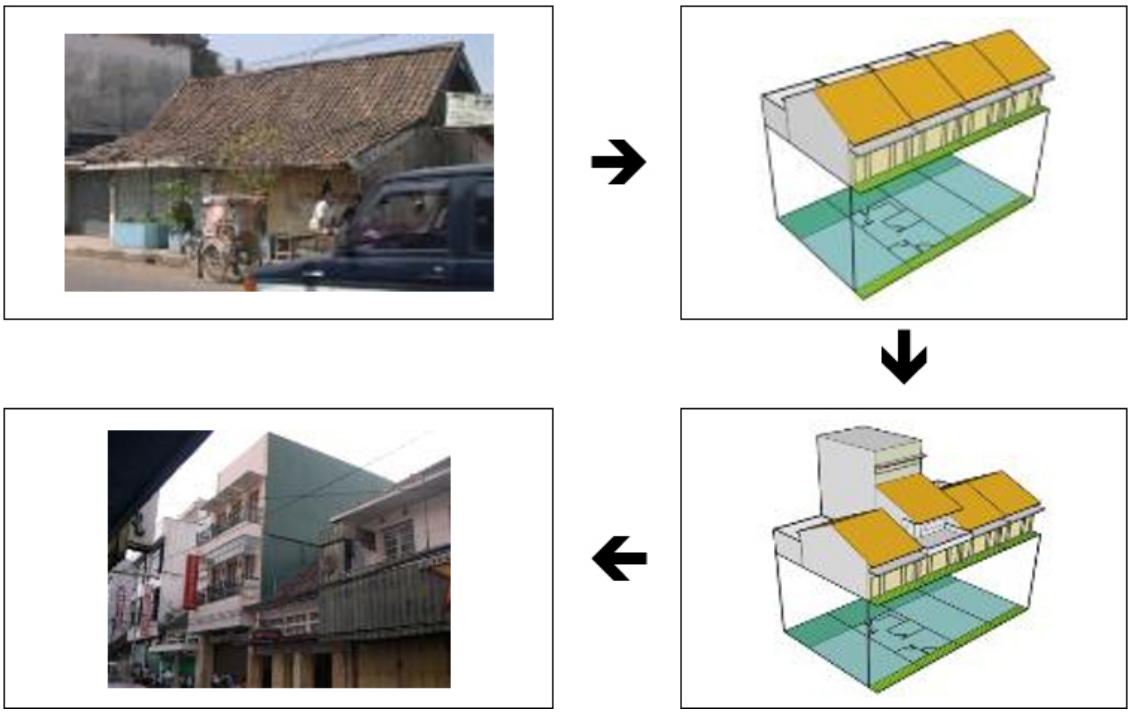

Figure 4. Horizontal development: the expansion of this shop house occurred 4 times. First to the land lot at the back site, at urban village. The second and the third purchases is two units which located at the right side which originally is an integral part of this shop house. The last one to the back side, to urban village. From the front view could not be seen the expansion.

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Mobile technology (GPS) and spatial appropriation in public spaces in São Paulo, Brazil

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Keywords: Urban cartography, Mobile technology, Spatial appropriation

This research aimed to investigate the spatial appropriation through the use of mobile technology (GPS) in public spaces in São Paulo, Brazil, in order to identify spatial parameters and contribute to studies on urban projects. This work focuses on the behavior of people in the city from the point of view of the use of mobile technology and the body-city relationship. When talking about the relations between the body and the city, it means bringing to the debate the spatial appropriation, displacements and daily practices.

Locative social networks are based on location services influencing the use and production of the contemporary city. The use of cartography becomes a frequent tool in everyday life, the map is an interface of recognition and belonging. The behavior of people in the public space reflects the performance and environmental quality. Therefore, the interpretation and understanding of the users' behaviors through the mobile technology (GPS) can contribute to institute design parameters and guidelines with a view to Urban Design and Architecture.

In this way, this work considered the following morphological aspects: a. Public place; B. Circulation of People; c. Impact on locative social networks and d. Check-in via apps. The methodology was structured in the following stages: 1. Definition of the spatial and social clipping. 2. Select and define the applications used for monitoring (GPS). 3. Field Research: Methods of behavior analysis can be subdivided into direct or indirect observation. 4. Analysis of the data obtained in previous steps based on the delimited concepts.

Introduction

The city unfolds as an open field of research to new spatiality. In the contemporary city this urban materiality has presented a hybrid production space whose space-time relations have determined the spatial appropriation. According to Anatel (National Telecommunications Agency), in May 235.5 million cell phones and 112.68 cell phones per 100 inhabitants were observed in Brazil. This growing number of mobile phones and use of social networks brings to the debate indicative of the behavior of people in relation to the city, information and people.

In fact, the technological advance contributes to a new production of urban space. The behavior of people in the public space reflects the performance and environmental quality. Thus, the interpretation and understanding of users' behavior through mobile technology (GPS) can contribute to the establishment of design parameters and guidelines for Urban Design and Architecture.

Locative social networks are based on location services influencing the use and production of the contemporary city, in a relation of coexistence between the real space and the virtual space that unfolds in new hybrid spaces. In this way, locative social networks allow the user to produce information about their locality and socialize. The most commonly used instrument for this is cell phones, or DHMCMs. These devices are portable and practically adhered to the body. The media and body relationship become more symbiotic. Thus, this device cannot be seen as a simple object, but as a "quasi-object" and the same happens with the human body, which is no longer the subject, but also a "quasi-subject" (LATOUR, 2005).

This research aimed to investigate the spatial appropriation through the use of mobile technology (GPS) in public spaces in São Paulo, Brazil, in order to identify spatial parameters and contribute to studies on urban projects. This work focuses on the behavior of people in the city from the point of view of the use of mobile technology and social media networks. When talking about the relations between the body and the city, it means bringing to the debate the spatial appropriation, displacements and daily practices.

Based on the interpretation of the behavior of the users, one can understand and map what are the acceptable physical-space issues and identify the design requirements, in order to elaborate projects focused on users' needs. Therefore, when proposing new ways of observing and describing the city, it is possible to find answers and meanings about the public space.

The behavior of people in the public space reflects the performance and environmental quality. Therefore, the interpretation and understanding of the users' behaviors through the mobile technology (GPS) and social media network can contribute to institute design parameters and guidelines with a view to Urban Design and Architecture.

Methodology

The present work observed the behavior and spatial appropriation at Avenida Paulista during February to March of 2018. To observe the data analysis, the research used as reference images, information and hashtags used on social networks as Twitter and Instagram. We considered the following morphological aspects: a. Public place; B. Circulation of People; w. Impact on locative social networks and d. Check-in via apps.

The methodology was structured in the following steps:

1. Definition of the spatial and social clipping.

From the construction of the theoretical framework and methodological definition of behavioral analysis models, it is proposed to define the spatial area to conduct research in the field.

2. Select and define the applications used for monitoring (GPS)

Identification of the human-mobile interface and selection of GPS systems that allow a greater interaction between the user and the public space.

3. Field Research: Methods of behavior analysis can be subdivided into direct or indirect observation.

The methods of behavior analysis can be subdivided into direct or indirect observation:

those that record the behavior at the time of the occurrences themselves and those that do it afterwards, identifying clues of the occurrences (WHYTE, 1977 *apud* DEL RIO, 1990). For Del Rio (1990), in the definition of the applied methods one must know: the position of the observer (researcher) in relation to the object; recording instruments, notations, checklists, maps, photographs; and what to observe - to whom (actors), doing what (act), with whom (other significant participants), what relationships between them (visual, auditory, symbolic, etc.), context and their physical arrangement.

4. Data analysis

SocioViz was used as an analysis tool, a social media analytics platform powered by Social Network Analysis metrics. SocioViz is an analytics tool, it is possible to extract data as keywords, hashtags, or user-handles.

Mobile technology: Social Locative Networks and Applications

Social relations in urban spaces have been modified with mobile digital technologies. The popularity of mobile phones and the use of applications with geolocation, provides a new form of social relationships. What is observed is that information is processed through mobile devices, due to a combination of GPS, triangulation of waves and wi-fi. They are media activated by the geographic position of a certain equipment or technological support through devices and geolocation resources. According to de Souza e Silva (2013), smartphones are capable of running applications that translate this location-awareness into useful services, such as navigation, locating the nearest gas station, locating a nearby friend, and calling a cab in the vicinity.

GPS is a Global Navigation Satellite System, a system for location or position determination – so called geopositioning. Van der Spek (2009) explain that "using a special receiver, a geoposition in space and time can be calculated based on the reception of satellite signals".

Lemos (2007: 1) explain that locative media is a set of information-communicational technologies and processes whose content is linked to a specific place, its meaning points to the final location or the moment of an action. Locative media is used to aggregate digital content to a locale and can be used for monitoring, mapping, annotating, building territories, and updating narratives and memories. This concept challenges traditional mobile communication and emphasize users´ disconnections from local spaces.

Sociability is an important factor to take into consideration when studying new ways of spatial appropriation in the city. As a result, locative social networks became an intrinsic component of communication in public spaces. This new time-space experience has simultaneities e multiplicity of events, closer to the user. When using locative networks media, users are able to read tips and comments about a specific location.

When we talk about spatial appropriation with social networks, digital information attached to locations has a double function: a. influencing users' mobility patterns through the city, and b. changing the character of locations. Tierney (2013), points the relationship between social media and everyday life in the physical world, however, is not merely one of communication. Online social space is actively constitutive of everyday life, and by extension, our everyday spatial environment.

An impact social network is Instagram, Brazil is the second in the ranking with 50 million users. For this survey we will use data from the Instagram. It is a social network that aims to share photos and videos, in fact, its applicability has generated relevant impacts in the urban space. Some features such as live videos, hashtag and location allow for greater interaction among users and consequently influence spatial appropriation in the city. And its perceived an increasing way of experiencing the city.

Space Coexistence: hybrid spaces?

When talking about virtual social networks the notions of space are inserted in space-time dimensions. Lefebvre (1991) proposes that space has three different approaches: material space (physically experienced and perceived), representations of space (conceptualized space, space of scientists, urbanists) and space represented (lived space, space of

sensations). Harvey (2015) points to other categories: absolute, relative and relational space. Absolute space is fixed, the space of all forms of cadastral mapping and engineering practices. Socially, it is the area of private property and other delimited territorial entities (such as states, administrative units, urban plans and urban grids). Space is relative in two senses: that there are multiple geometries that we can choose and that the spatial picture depends strictly on what is being relativized and by whom. By extension, the relational view of space holds that there are no such things as space or time outside the processes that define them. In relative space it is impossible to separate space and time:

The relational notion of space-time implies the idea of internal relations; external influences are internalized in processes or specific things through time. (...) An event or thing situated at a point in space cannot be understood in reference only to what exists only at that point. It depends on everything that happens around it, just as all those who enter a room to discuss bring with them a vast spectrum of experience data accumulated in their relation to the world. A wide variety of different influences that swirl over space in the past, present and future concentrate and freeze at a certain point (eg in a conference room) to define the nature of that point. (HARVEY, D. 2015)

For Filho (2017: 47), "more important than the distinctions, it would be an idea that space is not absolute, relative or relational the same, but turns into one or the other, according as". In this sense, spatial dynamics happen independently and at the same time integrated in the locative social networks, where the behavior of the users can interfere in the dynamics and performance of the physical space. The space in the virtual social network is produced in the relationship between users, information and objects in constant construction and associations.

Although, a shift in perception of space must be noticed; a hybrid space connected by virtual and physical elements. As a feature of this coexistence: the connection between people and places breaks the continuity of the geographical space. According to Netto (2014:166), it takes the form of networks of hypertexts and informational exchanges - and possibilities of interaction at levels never seen before. A network capable of connecting us extensively, all the time, beyond the imperative of presence. Santaella cites new "techno-social practices with the potential to generate forms of public participation that reconnect the physical dimensions of physical space with the participatory resources of the virtual public sphere" (SANTAELLA, 2008: 130).

This information can be applied in the present time with the reappropriation of the spaces by locative network media. Santaella (2010) points out that spatial-temporal technologies, as well as language, "produce neurological and sensory changes that significantly affect our perceptions and actions." When talking about hybrid coexistence some definitions should be highlighted about place and in space. Place could be understood, for example, as a newly built street, that is, the materiality of a road of an urban space. Space, however, is constituted as the practice and production of place, defined by appropriations and experiences.

Netto (2014: 169) says that the communication networks go beyond the temporal and spatial borders, the actors interact with absent actors by means of distance communication (by exchanging objects, accessing texts, hypertexts, or by mobile devices). Space becomes the mediator and the articulator in the production of a highly ephemeral form of social structure. In this sense the network happens in "another place", another possible environment. There is a space of topological connections between machines and minds integrated in information flows, we switch our attention between connected screens and our environments.

Case of Study
Paulista Avenue

The Paulista Avenue is one of the main roads in the city of São Paulo and is characterized by its urban dynamics that connects various neighborhoods and is located between South-Central zone, Central and West. It has an extension of 2800 meters, is considered one of the

main financial, cultural and entertainment centers of the city, stands out as an economic and tourist center. Due to its strategic dynamics is characterized by numerous public spaces in the same way and receives around 1.5 million people a day.

Its urban design is configured by several public spaces with different use and meaning. As a stage of political protests also becomes an extensive public space of intense coexistence. The choice of Avenida Paulista as a place of analysis was taken into account if its dynamic and power characteristic as exercise of space as an exercise of the right to the citizen. We analyze spaces such as the public space at São Paulo Art Museum (Masp), due to its catalytic space, the surroundings of the National complex building and main avenue itself. Another feature of the Paulista avenue is that on Sundays it becomes a large public space, because the roads are closed to car traffic. According to Zione & Sato (2015), the Avenida Paulista is the scene of social demonstrations and, likewise, is seen as a place of several parties and celebrations; is configured as a strategic spatiality in the city for the articulation of the various social actors.

São Paulo has a physically dispersed and fragmented structure of the city, according to Medrano (2015) its imprecise forms of social and cultural expression differentiated the largest metropolis in South America from more traditional conceptions of the city. There are "new codes" operating in São Paulo as result of the development of information and communication technologies and their new languages transmitted via software and hardware. For the author São Paulo became more open: "a place where new linguistic tools were accepted and able to evolve, leading to the emergence of its own forms of cultural expression".

The data collection began in February 2017 and concluded in March 2017. During data collection the following issues were observed: How does spatial appropriation take place? Is there a difference between the periods of the week and events? Does the use of applications like Instagram increase the urban potential?

We analyzed the posts and hashtags used in the search period. The relation of hashtags in comparison to other spaces of the city points to a constant urban multiplicity. In fact, a lively city in social media. Note a difference in use during weekdays, weekends, and events. In times of events, photos and hashtags triple compared to an ordinary weekday. A hashtag is type of a metadata tag used on social networks to categorize posts according to topics and photos.

The use of applications and social networks has increased the experience in urban space, in the sense that interferes and enhances user behavior. Information is in fact what connects people, whether through a photo, number of followers, texts and hashtags. From the SocioViz tool, we observe the following hashtags: #saopaulo (São Paulo city), #masp (São Paulo Museum) and #conjuntonacional (Conjunto Nacional Building). Each hashtag has distinct and interconnected characteristics, however there is a hierarchical relationship with regard to geographic positioning: macro scale (city of São Paulo), medium scale - location (Paulista Avenue) and micro scale - public space (Masp). (figure 1)

According to the relationships between hashtags used its possible to understand how people classify and understand spatial relations. This hashtag information creates an urban narrative and point to features of the spatial dynamics. In each network of connections, it is possible to analyze different urban dynamics and subcategories that are connected by different colors.

At Masp square, the forms of spatial appropriation are diverse. During the week it is characterized as a free space, at the end of weeks events happen, like fair, meeting point. At specific times, they are references to events and political manifestations. In fact, it is an active and constantly changing architectural landmark. Masp concentrates a large part of the photo references and hashtag of the Avenue as a whole. Due to its characteristic of a large meeting place, public space in essence becomes a nodal point and the architectural landmark in the landscape. On Instagram a number of 160,000 photos were observed through the hashtag #MASP and hashtag #avenidapaulista has 305,000 photos. The number of hashtags on twitter has a considerable difference compared to Instagram, the informational connections are restricted as figure 2 above.

When we look at the hashtag on Instagram there are more references and images related to twitter. The behavior of users also follows a hierarchical relationship (macro

to micro scale), in terms of the number of posts and images. A relation of demand and consumption is observed. The more activities and events, more images and information, thus more interaction between people. According to the number of posts and checkins on Paulista Avenue, noted points of permanency and passage. Masp, Conjunto Nacional Building (which concentrates numerous services and leisure), shopping malls and cultural centers stand out as places of permanence.

The map below (figure 3) shows the performance according to posts, images, information and hashtags in Paulista Avenue. The points in red color concentrate a greater number of interactions (photos, videos, hashtags), orange average interaction and yellow less interaction. Concentration points become architectural landmarks in the landscape and are responsible for spatial dynamics. It is noted that cultural events are decisive factor in the urban dynamics. When an event happens, information and shared data triple in quantity and the visibility of each place is strengthened.

The hybrid urban space goes beyond mere physical structure, it becomes a system of references whose data geolocational bring meanings and interactions between people. The substance of connectivity is information shared between users. Converted in bit, the data are transmitted by digital or mobile networks, translated into words, images and information whose meaning interferes in the form of spatial appropriation. The importance of the virtual social network allows to enhance the social role of urban space by imparting meanings in mediated and momentary experiences. Masp becomes a place of new practices and experiences, there is a demand and a significant increase in the awareness of people.

Conclusion

The connections between spatial meanings are produced by practice in urban space, referentiality produces potentials of connection with the meanings of practices produced in other physical places, distant from each other, but connected by the digital network. In this sense the hybrid space determined by virtual social networks have as characteristic the innumerable connections that change all the time. The meanings and references shared through photos and information are the substance of connectivity, meaning the unfolding of space production.

There is a reference potential contained in each picture and shared text, this practice unfolds into multiple places and spaces. Social networks can be understood as a space analogous to urban places of activity. The relationship with the street, where the space of the unpredictable, not programmed, approaches with virtual spatial relations. During the research we observe another point, the constant vigilance that these virtual social networks have promoted, a space of speech and sharing of information, it becomes a public space of constant exhibition.

There is a correlation between spaces and experiences, between virtual (network spaces, cyberspace) and real space: a hybrid (virtual and real) space-time experience. The relationship with the virtual relies on the sense of random simulation of information, but it is a mere sensation, since in fact the data and information are increasingly manipulated. However, the number of hashtags, trending topics and views become the way to validate the information potential.

In this way, it´s possible to stablish three key issues: the meaning and connection, corporeality of the act and the place as acting subject. The information is what connects and makes sense in social networks, whether through photos, texts and data. The user is who determines the act, through its mobile presence on social media networks. The place brings new forms of spatial appropriation, dimensions of use and meaning. Indeed, new questions are observed and point to future studies: Does this hybrid experience reduces the way of experiencing the real space (public space, city, places)? We reached a point that the demand and popularity of urban spaces through social networks contribute to recovery and positive environmental image. How to balance this demand between real space and consumption? Future studies are extremely important in view of the physical-spatial transformations in an era completely digital. The continuity of studies on the subject becomes fundamental to understanding the city. Despite the importance of impact on

social networks, *how much is a hashtag or like worth?* Another important point is that hybrid space is accessible only to those who have technology, access or are part of the networks they share.

Figure 1. São Paulo Hashtag on twitter, font: SocioViz tool (2017).

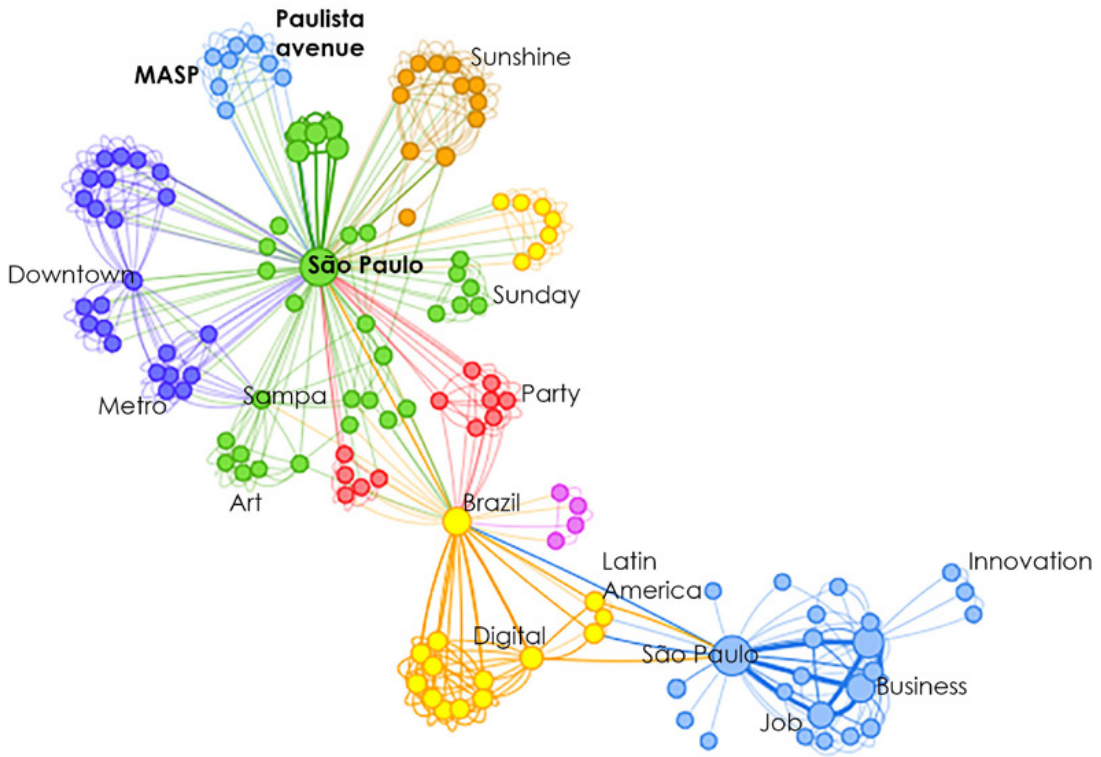


Figure 2. Masp hashtag on Twitter, font: SocioViz tool (2017**).**

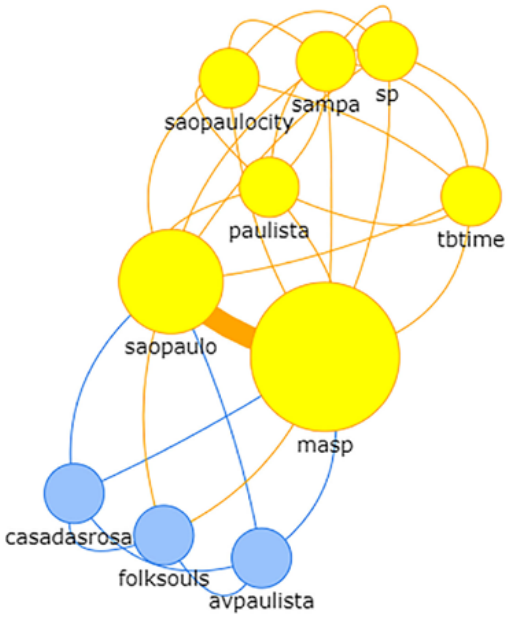
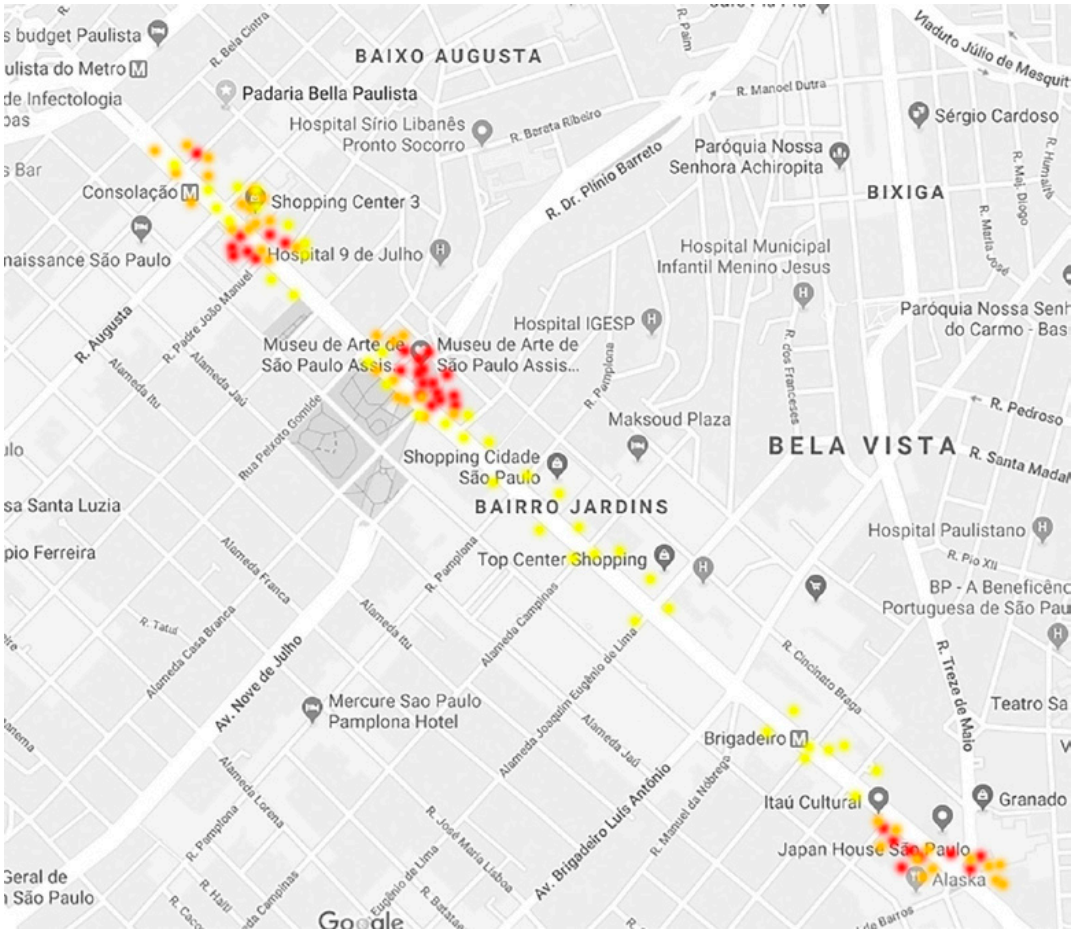


Figure 3. Map location – Spatial Appropriation, font: Google Maps (2017).



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Historicizing spontaneous city. Michel Ecochard and the «habitat pour le plus grand nombre» in Morocco

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In 1953 Michel Ecochard presents at IX CIAM the "Habitat pour le plus grand nombre" grid, based on CIAM grids to investigate morphologies and settlement process of Moroccan spontaneous cities. Explicit indication of these as "sources" of design expresses a double shift for Modern design. The first one is clearly perceptible in the present of Ecochard's project proposal: dealing with traditional urban space, organized according to "internal" principles and characterized by an informal and minute status, Modern architects move from an universalist design model to the declination of a contextualized method. They capture urban history, they understand its characters and they encode Mediterranean spontaneity formula applying Athens Charter principles. Thus, experimented design introjects the self-organized urban structure, based on the principle of minimum resistance, in the formulation of a planned hetero-organization.

The second shift can only be understood decades later. Took over by the population, Ecochard urban fabrics have been spontaneously adapted, leaving a sustainable legacy to Morocco (J.-L. Cohen, 1992): an evolutionary urban form based on a rooted path, and a typo-morphological paradigm. Through the transformation, Ecochard gives rise to a building typology and to an urban morphology, codified and replicated to manage urban expansion in the following years. The short present of Ecochard's action in Morocco (1948-1956) reverberates in the compression between his past and his future. In the solid roots that refers, with functionalist lucidity, to the intuitive structure of the Mediterranean space, and in new urban forms occurring thereafter in both planned action and informal city.

Introduction

Michel Ecochard arrives in Morocco in 1946, appointed by the *Résident Générale* Erik Labonne as head of protectorate urban policies. The scenario he dealt with has been described by himself as dramatic (Ecochard, 1955a): a country in demographic explosion and a colonial urban policy having not been able to give adequate responses. Cities designed by Henri Prost in first colonial period are forbidden to local population, while attracting a wave of internal migration for economic reasons. This puts a strain on historic towns and make spontaneous urbanisation proliferate. On one hand, the reaction take form in densification of historical medinas; on the other, it drives clandestine habitat development.

Spontaneous dynamics faced by Ecochard propose a double challenge, both practical and cultural. European architects belonging to Modern thought must find a quick, economic and effective solution to the habitat problem and, above all, they dealt with a population still marked by strong rural attitudes. The functionalist approach, involved in this crisis, conceived an innovative methodology which goes down in history as "*Habitat pour le plus grand nombre*".

Decades later, it is possible to take stock of this experience, tracing frictions and synergies in the relationship between heteronomous planning and self-organized development. The goal is to understand Ecochard innovative legacy to international design culture, and to urban development of Morocco, including the invention of new architectural typologies and urban morphologies.

Methodology

Morphological reading of Moroccan urban landscape and analysis of typological variation allow to reconstruct the forming processes of nowadays widespread phenomena.

A topical moment is typifying action carried out by the *Service de l'Urbanisme* directed by Michel Ecochard. The visual grid "*Habitat pour le plus grand nombre*" presented at CIAM IX in 1953 as well as Ecochard writings thus constitute the primary sources of such action. These documentary bases allow to retrace this path and to place it within Moroccan city evolution.

Literature, documentation on historical cities, and analysis of Ecochard projects 60 years later, together with normative sources and planning acts led to a comparative balance of morphological-typological innovation and to the formulation of critical conclusions about the cultural impact of Ecochard experience in Morocco.

Forming process

1. « Habitat pour le plus grand nombre »

When the results of the *Service de l'Urbanisme* action leaded by Ecochard in Morocco were presented to CIAM IX in 1953, they have been formalized methodological and design innovations from the first field test of European Modern theories. The visual grids conceived by the CIAM for the comparison of modern projects (Le Corbusier, 1948) feed on unexpected contents: they were investigating spontaneous settlements forming processes, whilst framed in the logical structure of Athens Charter.

Ecochard was not new to the cultural context of the Modern. Rather, he had been educated to lecorbusierian thought, and he came to Morocco determined to apply the principles of 1933 Charter: the challenge of growth, bringing urban population from about 500.000 inhabitants in 1921 to over 1.800.000 in 1947 (Ecochard, 1950), required a simple conceptual tool, which could offer clear responses (Ecochard, 1955a), although not yet experimented on the ground.

The relations between Modern culture and Moroccan practices are frequent and nourished by profitable exchanges. Since 1947 Ecochard had an epistolary report with Siegfrid Geidion, keeping him updated on the progress of the experiments (Cohen, 1992), and he was invited for an individual contribution to 1949 CIAM in Bergamo (Cohen, Eleb, 1998). Furthermore, the link with European cultural framework were strengthen by Georges Candilis and Vladimir Bodiansky. The two architects involved in the construction of the Cité Radieuse in Marseille joined the action of the *Service*, constituting in 1951 the ATBAT-Afrique group based in Casablanca.

The interaction between Ecochard and Candilis led to constitution of GAMMA, *Group d'Architectes Modernes MArocaines* that firstly signed Rabat-Salé plan in 1951 (Cohen, Eleb, 1998). It receives different – even contrasting – approaches, which "*Habitat pour le plus grand nombre*" grid represent a synthesis.

1.1. A multidisciplinary approach

Presented at Aix-en-Provence together with Le Corbusier's "*Mahieddine*" grid on Alger and Allison & Peter Smithson "*Urban Re-identification*" grid, GAMMA grid constitutes the only experience having been realized.

The visual exhibition presents not just a project, but an entire methodological system. This is composed by analysis, context knowledge, re-elaboration and design to conclude with the realizations implemented on Moroccan terrain. It is a structured tool, working on an interdisciplinary team, thus inaugurating a way to manage complexity through multiple skills. Ecochard design ideas are mainly based on sociologists Robert Montagne and André Adam researches, assisted by Pierre Mas (Cohen, Eleb, 1998), as well as on demographic data given by the protectorate administration: hence, design process integrates a substratum of cultural awareness in the definition of planning strategies.

The conceptual structure of the grid is divided into five progressive phases. *Introduction et bidonville* and *Planification and urbanisme* concerning conceptual tools of analysis and design; *ordre sans construction*, *la concentration horizontale* and *la concentration verticale* presenting realized solutions.

Introduction et Bidonville, edited by Pierre Mas, presents the context and the urban problem to be tackled. The spontaneous city, in both its consolidated form, the medina, and in its ephemeral one, the slum, testifies population needs and immediate responses, as adopted in dwellings typologies. Traditional housing types look for shade and compactness, basic requirements for a "cold country where the sun is hot" – according to the phrase attributed to Marshal Lyautey. Similarly, it arises awareness of the tensions between collective and individual sphere. In Mediterranean towns as well as in Atlas casbahs, the socio-cultural dimension is almost directly reflected in spatial organization: "*for a centuries-old tradition, the Muslim creates an intimate inner life, completely separated from the outside, through a strong family intimacy, but at the same time a strong sense of collectiveness. The social structure, tribal, religious, and climate needs have given rise to a collective expression: the casbahs of the Sahara: these fortified collective citadels reflect the tendency to live close to each other but respecting family intimacy*" (Architecture d'Aujourd'hui, n. 50-51, 1953, supplement).

The importance accorded to the context directly reverberates in the second section of the grid, *Planification et Urbanisme*, edited by Ecochard himself, that constitutes the core of the whole process. Ecochard brings out political wills of his planning action: the main objective of applying Athens Charter principles, while, at the same time, the goal of taking into account inhabitants historical habitudes – "*les habitudes seculaires des habitants*" (Ecochard, 1955b).

Ecochard explain the problem and the strategies to deal with it. At first, on a quantitative point of view: demographic analysis provides growth trends, highlighting the need to pass from about 3000 dwellings realized per year to more than 35,000 (Ecochard, 1950). This to accommodate urbanism rhythm and to provide a home to the growing urban proletariat. He further demonstrates the unfairness of access to the official city: neighbourhoods destined to Moroccan population reach density of 1000 inhabitants per hectare in Casablanca (Ecochard, 1955a), while in Rabat Muslim population, 60% of the total, occupies about a sixth of the urbanized territory (Mauret, 1954). Ecochard gives himself the goal of 260000 new dwellings before 1960, and he investigates the financial means at the disposal of public administration. Practical requirements of the project are finally outlined here, shaping up a mixed financing: public action should take charge of infrastructures and minimum accommodation, while population financial engagement will provide to the growth of the city.

On the other hand, what is most interesting on a disciplinary point of view, there is the qualitative analysis of the context. In *Planification* panels, and further in *Urbanisme* panels, the strategic approach to the project is set out: the study of minimum unit, the settlement principles of medinas, the new organization of urban space, are related to the categories of the Athens

Charter. Modern main functions shape the three strategic axes of the project: living and circulate, which provides an infrastructural frame lead to the neighbourhood pedestrian paths; work and living, achieved by a modern territorial zoning; living and recreating, which shows the preparatory studies of the proposed urban form.

1.2. The design of an evolutionary system

Problems faced by the "*habitat pour le plus grand nombre*" make the different European cultural approaches reverberate in Morocco. Architects of the *Service de l'Urbanisme*, were divided about design solutions to be adopted, about how to lead Moroccan dwellings towards Modern models.

Ecochard, moving by more practical than theoretical reasons, defends the line of a stronger adherence to traditional ways, in the sense of a modern reinterpretation in typologies, forms and techniques. The large part of the population to be lodged has, in fact, still rooted rural habits, and it would hardly accept to switch towards high-rise collective housing. Moreover, the financial resources available would allow to build just a few blocks, not solving the problem as a whole. So that, since the earliest sketches for Rabat-Salé, he was oriented towards cheaper solutions (Ecochard, 1948), involving both cultural and practical reasons in his invention, an adapted horizontal density. On the other hand, Candilis and the ATBAT-Afrique group, closer to lororbusierian positions, defend the need to propose high-rise oriented buildings. However, unity of purpose made easier a unitary action and the constitution of a common Group within the CIAM.

The common ground has been the conception of an evolutionary system, to achieve different housing typologies in successive steps.

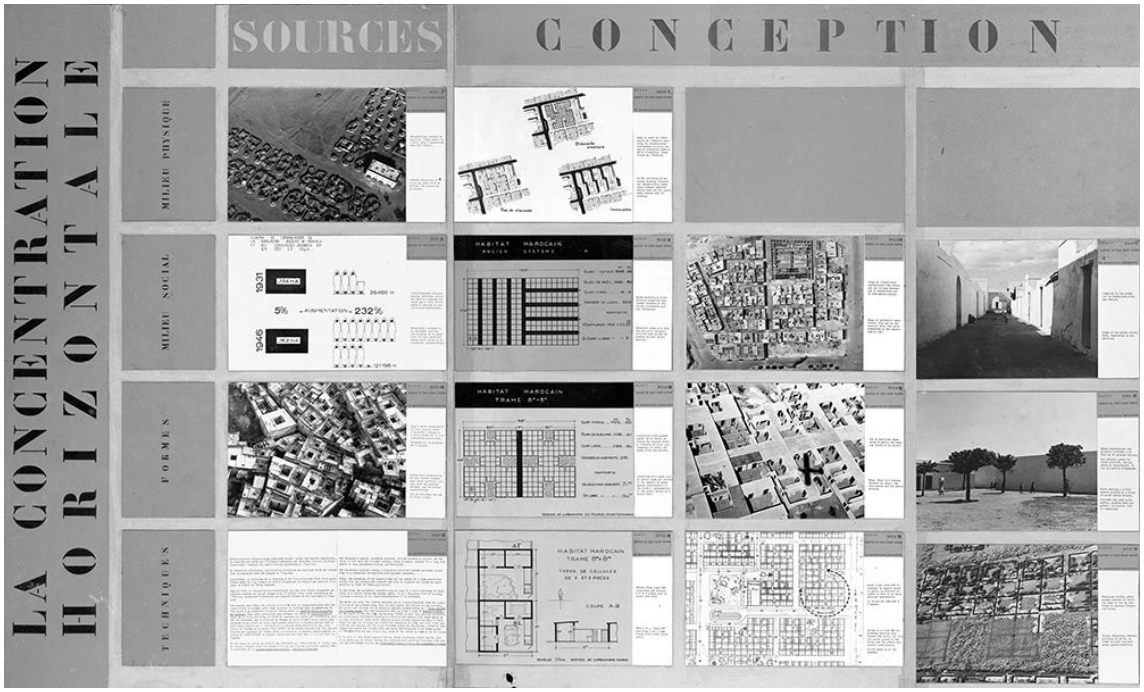
These have been presented in the further three sections of the visual grid: the first one, *ordre sans construction*, is a territorial infrastructure in regular plots, providing services, on which inhabitants are free to install; the other two, *la concentration horizontale* (figure 1) et *la concentration verticale* present consecutives steps of architectural and urban construction.

The design invention of Ecochard, *la concentration horizontale*, is a low rise high density urban fabric having been the most widely tested and implemented. It is the juxtaposition of base cells, organized in lots 8x8 meters, structured by pedestrian paths derived from the spatial organization of the medina. Housing is organized in units, provided by the facilities prescribed by Athens Charter.

The low-rise density is punctuated by high-rise housing blocks conceived by ATBAT-Afrique as a superposition of Ecochard patio houses. Vertical blocks mark the horizontal city and testify the goal to be achieved: the horizontal plots are to be considered provisional, and they should have been replaced by Modern blocks, once better financial conditions and inhabitants wishes would be ready for shifting to a modern (European) lifestyle.

The well-known Candilis and Bodiansky buildings in Casablanca – *Immeuble Nid d'Abeille* and *Immeuble Sémiramis* – are to be placed in this dialectic. While sharing the approach of contextual inspiration, the two positions differ for design interpretations. Closer to history and to the context Ecochard's one, more universalist Candilis position. In this regard, sociologist André Adam had to say that, in absence of traditional urban form, in Candilis suspended patio "*nowadays Moroccan woman is like a bird in a cage*" (Adam, 1971).

Figure 1. Group d'Architectres Modernes Marocaines, Grid *Habitat pour le plus grand nombre*, section *La concentration horizontale*, CIAM IX, Aix en Provence, 1953. Source: Photothèque, Ecole Nationale d'Architecture, Rabat.



2. Typifying ancient medinas

The invention of the *Cité Horizontale* is the field in which Modern project owes a stronger debt to spontaneous settlements. The investigations on traditional city reveal a morphogenetic and procedural affinity between clandestine settlements and historical medinas. It should not surprise us much, as these are the outcomes of the same self-organized processes, in similar climatic and cultural contexts. Medinas urban form results of a centuries-old adaptation of built environment to physical and social needs, whose hierarchy and spatial structure are both a necessity and a resource for inhabitants. So much to recreate those even outside the historical urban perimeter, in the self-construction of slums. In this phenomenon poor people express their right to the city, and they concretize their aspirations according to instinctive urban model (Navez-Bouchanine, 2002).

Ecochard seems having understood the character "in the making" of such cities, including the precise social meanings underlying the organization of space and the disposition of dwellings. The basis of his design solution is indeed declared in the *Urbanisme* panels, and even more explicitly in the horizontal concentration ones, edited by Claude Beraud and George Godefroy.

Without hesitation regarding the universalist approach, the Ecochard group directly cites the "sources" of their work, identifying in the continuity of urban evolution the key point of their proposal. Suddenly, the concept of house moves from "machine for living" to "habitat", stating the appropriation by the Modern of the cultural significance of the city (Eleb, 1999). Modern design method deals with traditional city, investigates its forms and its constitutive processes. Spontaneous intelligence and modern *logos* intertwine in a paradigm shift that move the universalist approach towards first culturally specific solutions (Avermaete, Karakayali, Von Osten, 2010).

Finally, Ecochard finds a synergy between culturally responsive inspiration and the principles of the Athens charter. A strictly typified, hygienic and functional model, to be applicable to the whole country, would be supported by the ordering principles of spontaneous habitat.

2.1. Housing typologies

Urban morphology and patio houses result from accurate analysis, aerial shots made by Ecochard himself, and progressive studies towards a minimal residential unit. Modern themes such as standardization and industrial construction are mixed with the typological invariance of the traditional court house, functional for protection of both intimacy and shadow.

Ecochard *habitat minimum* is then a patio house. Purchasing capacities suggest 8 x 8 m squares, "*allowing to build a three-room house with a courtyard, according to traditional principles*" and, by variation, some diversified types (Ecochard, 1955a, p 106). The 64 m^2 plot, delimited by a fence of 2.8m high, offers two or three rooms facing south, a bathroom and a kitchenette in the courtyard. Distribution is in the patio, and rooms must not exceed 3 meters in width, allowing to limit built surface and to utilize prefabricated concrete panels for both walls and roofs.

The construction is minimal and repeatable in series. Modern research emerges from the self-referentiality of language and conceives a device apt to solve problems rather than look for emotional spaces (Culley, 2011). Ecochard cell constitutes hence a first typological standardization of the traditional house. It is the zero degree, the archetype of Mediterranean residential architecture, made concrete for mass production, for *le plus grand nombre*.

2.2. Territorial organization

The concept of *habitat* arises in urban fabrics design. Far from being chaotic, the territorial organization of medinas propose a functional scheme to be played in the project.

With functionalist attitude, Ecochard explores the aggregative modalities. He hypothesizes a classical system of arrays, up to excluding it for spatial economy. The cluster distribution, around a central void, ensures greater territorial density, implies smaller infrastructures and allows a common neighbourhood space. Public spaces are hence not serial but hierarchic: primary streets connect metropolitan territory out of the fabric, according to Athens Charter, and lead to urban streets providing access. Here the system changes: small pedestrian streets – *ruelles* - lead to neighbourhood *placettes*, and these run to semi-private alleys, *impasses*, to enter houses. Variation of section and directions characterize this concatenation of voids, different and yet connected, whose differences determine uses and privacy gradient.

Public space hierarchy is perfectly consistent with the historical model of reference. The inner space of medinas provides for an intuitive progression of socio-cultural senses, from sharing to privacy. Most rectilinear alleys crossing the town are places of exchange and anonymity. Section variation signals the transition to residential sectors, where commercial activities thin out to give space to neighbourhood facilities. Directional shifts - the *chicanes* - emphasize changes of behaviour code. The public space becomes a neighbourhood space, selecting uses, attendance, and social control. Subsequent section or direction shifts lead to small common areas, linked to the patio space: home fireplace and in turn servant space of the dwelling.

Similarities in spatial progressions of the two fabrics are the clearest link between low-rise dwellings morphology and medinas, expressly declared by Ecochard in his works. However, the same "concentric" principle can be found in territorial organization.

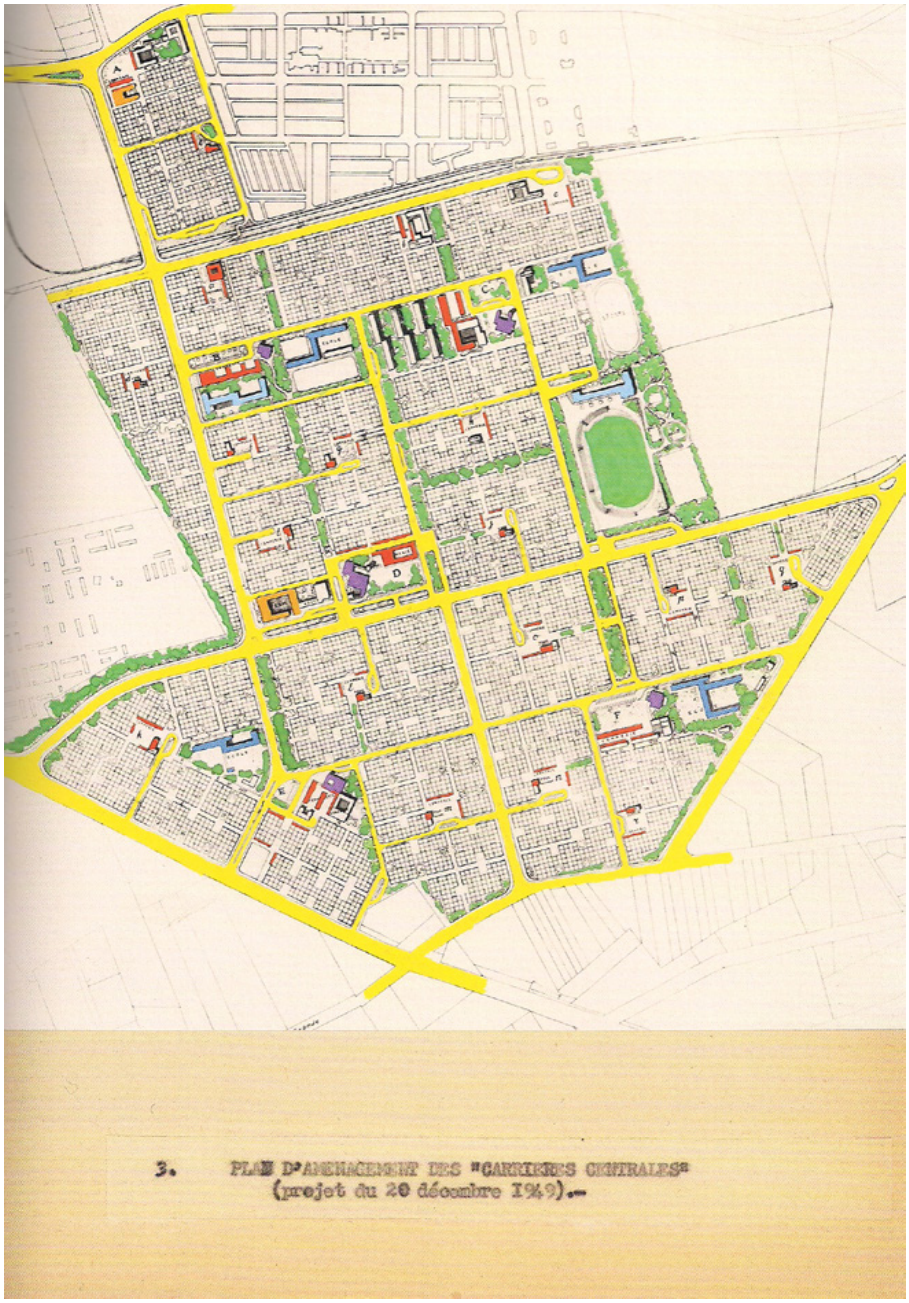
The *cité horizontale* is structured in neighbourhood units of 1500 inhabitants: living areas are aggregated around a place for proximity relationships. Five neighbourhood units form a district of 9000 inhabitants, structured on a centre for recreating activities, provided with the mosque, the hammam, the Koranic school, the market. "*Smaller, the district dies, larger it is no longer on the scale of man, who feels isolated*" (Ecochard, 1955a, p.199). As far as possible, the connection between the neighbourhood unit centre and the district centre must be pedestrian. Four up to five neighbourhoods form a satellite city, provided with industrial and working areas. Vehicular circulation is external, connecting sectors through natural landscape.

Let's go back to the medina: within the walls, the narrow and labyrinthine morphology refers to residential neighbourhoods. This lead to wider and straighter paths, with the mosque, the Koranic school and other facilities. The main souk is a crossing path that relates urban gates on different sides and leads, outside the walls, to agricultural or pastoral fields. Internal and external planning are in strict relation, living the historical ecosystem of the symbiosis between the medina

and its surroundings. The territory source of supply serves the commercial city, which in turn hosts the labour force of the camps (Radoine, 2011).

The geometrical and technological rationalization of these principles appears in the urban plan for the Carrieres Centrales in Casablanca (figure 2). Modern zoning in homogeneous areas is distributed according to traditional relational principles. In dense dwelling areas, made of patio residences, thick 8x8 texture refers to ancient morphologies. These are connected one to each other without losing morphological continuity. Horizontal fabrics, built on a human scale, are punctuated by knots, where the verticality of minarets is joined by the high-rise blocks erected as a model of the future transformation.

Figure 2. Service de l'Urbanisme, Masterplan for Carrieres Centrales in Casablanca, 1950. Source: Avermaete, T., Casciato, M. (2014), *Casablanca-Chandigarh: bilans d'une modernisation*, CCA - Canadian Centre of Architecture, Montreal p. 263.



3. Spontaneous evolution and a new typo-morphology codification

In the prevision of an infrastructure for housing development lies Ecochard intuition on in the making nature of Mediterranean city. *Habitat pour le plus grand nombre* is not a prefigurative project. It is a process in progress, which conceives some typed devices - the *bidonville ameliorée*, the horizontal fabric and the vertical blocks – to be implemented in a progressive way, according to changing of needs and means.

It happens, however, that reality overcomes imagination. Ecochard cities effectively played as infrastructures for change, having driven evolution towards new forms and types. In this sense the Ecochard intuition has been validated by history in the following 60 years. Nevertheless, the direction of evolution has been continually perfected after Moroccan independence, basing on the interactions between contextual conditions and responsiveness of public and private actors.

Evolutionary habitat has been adopted as strategy by the new independent state for decades (Belquih and Fadloullah, 1986), whilst having been adapted several times in types and methods of realization. Adaptation has been driven by action-reaction dynamics between housing crisis and spontaneous response, ready to supply the shortcomings of the official response.

Initially, Ecochard system was applied unchanged. In 1957 two financing formulas, *lots évolutifs* and l*ots économiques*, provided assistance to build an 8x8 base cell. Financial difficulties leaded to a first typology variation: the *Trames Sanitaires Ameliorées*, since 1963, reduced the size of the lots to 48m^2. At the same time, the 1965-1967 three-year plan extends the Ecochard plan of Yacoub el Mansour in Rabat, keeping the cell unchanged but altering the territorial design, renouncing to the neighbourhood morphology: the absence of neighbourhood facilities marks in fact most of the realizations.

Nevertheless, until the mid-1960s Ecochard system was kept constant, and 8x8 cells were the most applied type (Belquih and Fadloullah, 1986).

Shifts occur in response to crises. The growing demographic pressure, to which public action cannot cope, triggers two distinct but converging processes: the transformation of housing typology and the emergence of a new morphological type. On the one hand demographic pressure inducts inhabitants to spontaneous superelevations. On the other, clandestine dwellings appeared, following the same pattern of the official city.

The first phenomenon is the most striking, and it leads within a decade to the complete metamorphosis of Ecochard fabrics (figure 3). Progressively a new room is built in the patio, hence the house is elevated on the same plot, leaving just a small void instead for ground floor ventilation. The spontaneous dynamics has strengthened in the early seventies: in 1971 the state stopped considering the 8x8 fabrics ad temporary, pushing towards land normalization.

Figure 3. Spontaneous adaptation of Ecochard's Cité Yacoub el Mansour, Rabat. Source: Photothèque, Ecole Nationale d'Architecture, Rabat.

The typological variation takes different forms according to purpose. In case of response to a family requirement, the single-family units have been elevated up to two levels, maintaining their unity and their residential function. Another variation occurs in response to the lack of activities,

with a speculative intent: superelevation, in this case, lead commercial or artisan shops on ground floor, to reconstruct proximity facilities neglected by public works. Furthermore, lower levels are rented to different families, shifting to a collective housing.

The transition is complete. Horizontal Ecochard fabrics spontaneously become townhouses, and finally small collective housing. This causes some problems, such as over densification – from 50 houses per hectare according to Ecochard plan, up to over 100 – and infrastructure inadequacy. That's why spontaneous variation begun to be provided for in official planning.

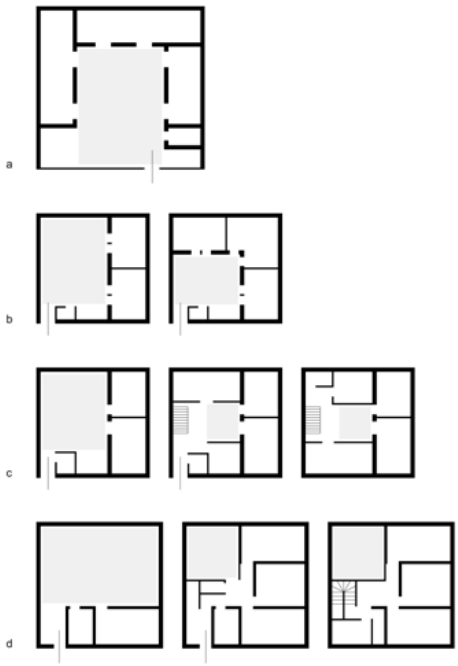
New dwellings were being codified through official acts towards a new type, nowadays known in Morocco as *Maison Moderne Marocaine* – although this name has never appeared in official sources.

The decree n. 2-64-445 of December 1964, regulating for the first time social housing, requires dwellings performances and dimensions deduced from the new spontaneous type. These requirements are the basis for design of standard plants provided by the State for assisted construction. Superelevation was expected at the beginning, offering to inhabitants the typological scheme to be followed.

The first urban plan for independent Morocco capital the *Schéma Directeur d'Aménagement Urban* of Rabat-Salé discussed in 1971 and published in 1973, incorporates strategies of evolutionary habitat, accepting superelevation and providing further formulas (Chaline, 1989). Such typology became the design tool of "integrated projects". Plans designing urban fabrics including different economic standards, according to the size of the lots. A morphologically compact urban design juxtaposes lots between 64 and 144 m^2, for which type-plants are provided to the owner for construction. Official planning has finally introduced a tool based on spontaneous adaptation (figure 4).

It is therefore no coincidence the morpho-typological coherence that can be observed in many districts of the Moroccan cities. The dense scan of the fabric - with dimensions between 8 and 12 meters - and the juxtaposition of comparable typologies are the constants linking together the original Ecochard *cité*, now completely raised, most of post-independence urban extensions, up to the clandestine dwellings. The self-organized genesis of this process returns to its origins, to de fully-spontaneous urban production.

Figure 4. Plans comparison : a. historic medina house, Rabat; b. Ecochard patio house, 1948; c. Spontaneous adaptations; d. Type plans, Rabat, 1973 .



Conclusion

The short present of Ecochard action in Morocco (1946-1952) reverberates in the compression between his past and his future. His Moroccan projects reflect a process result of random relations between design, local culture and spontaneous actions. Originated by self-organized city, they typed with functionalist lucidity the intuitive structure of the Mediterranean space, to be in their turn adapted and subsequently codified in a new typology and in a new urban form. *Habitat pour le plus grand nombre* represents, hence, a link in the chain of in the making Moroccan and Mediterranean cities.

The consistency of this process can be found in some trends that still inform contemporary Moroccan architecture and cities: sense of urbanity, compression of urban space, scale, tight rhythm of fabrics and architectures. Persistent phenomena of a self-organized evolutionary process interpreted first, and then guided by the introduction of a hetero-organized force. Thus, Ecochard proposes a method, a way to deal with spontaneous city. Therein it's possible to draw noteworthy lessons to face challenges of slums and objectives of nowadays city.

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The characters of French planning in the Republic of Congo during the colonization

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At the end of the 19th century, the colonization of Sub-Saharan Africa by european superpowers let us know the inner part of the continent, hitherto still unknown due to the difficulties it presented to those who wanted to venture out. After the Geografical Conference held in Brussels at the request of King Leopold II of Belgium in 1876, whose purpose was, nominally, to organize philantropic and scientific missions to Central Africa, and to discover what the area hid, the Kingdom of Belgium began de facto a politics that would lead, eventuallly, to the creation of the Congo Free State, a colonial possession of the King himself. Central Africa was part of those areas still unexplored; the French, Belgian, German, British, launched expeditions with the aim of conquering parts of Africa still not subject to foreign control: thus they began a hunt for conquering new lands. The explorers conquered territories and planted flags of their own nation so they move soon from the conquest to territorial planning.

The civilization process that occurred in the colonial era gave birth to many african cities; We will deal in particular with the French colonization in the Congo and its legacy. French colonists, after the conquest of the Congolese lands, begin a general territorial planning and founded Congo main cities. We will see how this planning had to adapt to the place specificity: soil economy, land characteristics, urban morphology in general, have been the main factors that have affected the planning of Congolese territory, and this has produced different results according to different regions.

Until the XIX century, while all other continents had been discovered, Africa was still largely unknown, between the XIV and the XVII century, only african coastline were explored by the europeans, excluding north Africa, that were known since antiquity. During those years Africa had just commercial relations with the rest of the world: gold, ivory, salt, other raw materials and slaves were traded at cosstal cities, where european had their commercial outposts. Foreign people involved in the trade where arabian, french, spanish, english and portuguese, being the last ines the first to come and explore the continent. The white man remains at the coastline and did not venture into the inland mainly because of the hard condition he found: the equatorial climate, bad and unknown deseases, complex earth morphology, curbed his advance into the west african inland; religious missionaries were the first people to venture out, seeking to convert african indigenous people to the christian faith, and the first to draw the most ancient geographical maps of that unkonwn area. It was not until the end of the XIX century that the european superpowers became interested in exploring and exploiting the natural resources of the continent: an important conference, held in Bruxelles by the will of Leopold II, King of Belgium, gathered all the major european countries (Spain, England, France, Belgium) to talk on the subject, putting philantropic intent as an excuse for their real interests; They talk about a move towards civilization, urbanization and progress for african people, but it was, actually, an international agreement for a coordinated colonization. After the 1876 Bruxelles conference, King Leopold II, who was passionate aout geography, founded the International African Association, which the aim was to organize expeditions to West Africa, and one of the most wanted area was the Malebo region in the Congo bassin. The french arrived at the Gabon coast and founded Libreville, which later became an important spot to start expedion into the inland; their leading explorer was the french-italian Pietro savorgnon De Brazza, who headed the expedition through river valleys and forests, placing new french settlements in their path. When he arrived at the Congo river, at the village of Mbe, he met King Makoko, the most important indigenous king in the area, and signed an agreement with him: the french had the permission to take over those lands, starting the french domination of the area, and then strove to reach, as soon as possible, the Malebo region, trying to prevent the belgian expedition to cross the Congo river and come to the other shore . Henry Stanley, an english explorer leading the belgian expedition, when arrived at the later called "Stanley pool" , found out that De Brazza had menaged to overcame him. The two explorer established to settlements, on two sides of the river: on the right side De Brazza founded Brazzaville, that will later become the capital city of the Republic of Congo (Congo-Brazzaville), and on the left side Stanley founded Kinshasa, called at first Leopoldville, that will later become the capital city of Democratic Republic of Congo (Congo-Kinshasa). The border between Belgian Congo and the French Congo was the river for most of its length, but in the final part, where the river is not navigable, the belgian border crossed the river up to the see. The Malebo area was important because it is the terminal point of the viable part of the river Congo: boats can easily navigate from Bangui (the capital city of Central African Republic) to Brazzaville-Kinshasa; this caused a reduction of importance of Libreville, founded ca. 20 years before. In the 1910 the AEF (Equatorial French Africa) was founded, comprising the actual countries of Central African Republic, Tchad, Gabon and Congo and Brazzaville was established as the capital city; this effected the creation of the city, planned to become an important center.

We must first analyze some aspects of the French Congo territory, that have addressed the choices of the French colonizers. As they did in other African States, the French studied the whole territory through surveys generally performed by the genius, they created maps that indicated the names of the settled tribes, regions names, geological maps, but also detected the orography of the land. The study of the Congolese territory brought out some characteristics that are practically seen as opportunities for the French. From some maps realized at the time one can easily notice a higher demographic presence in the Southern part of the State. In addition to a higher population density, South Congo is also rich in raw materials, its soil has better characteristics. These factors of territorial morphology will lead the French to structure the lower part of the Congo in terms of infrastructure construction. The French certainly started from the connection of the most important spots among them, for this reasons the extra-urban roads that are called "Route Nationale" were created: one to

connect Brazzaville to Pointe-Noire (RN1), a newly founded city that worked as the main port on the ocean, and the other to connect with the northern part of the country (RN2). In 1914, due to the need for a connection that could facilitate Brazzaville to the Ocean and vice versa, studies and hypotheses for the construction of a railway began. The C.F.C.O. (Chemin de Fer Congo Ocean) will then be built around the 1930s. The Brazzaville - Pointe-Noire axis will become a corridor of fundamental importance in the economy of the Congo, the railway became the backbone of the Congolese economy then administered by the French. Together with this railway some towns were created, which were previously small villages, and with the arrival of the train they were transformed into small towns that developped around the new station; among these we can find Mindouli, Louété, Madingou and Dolisie. These new settlements in some cases are the result of the merging of some villages that are grouped together.

In addition to the aforementioned Brazzaville and Libreville, French Equatorial Africa had also other major cities such as N'djamena in Chad, Bangui in the Central African Republic. The city of Pointe-Noire, which for reasons explained above was particularly importantfor the French, was created only around 1926, basically together with the railway C.F.C.O. The French strategy that led to the development of this cities was the gathering of previous indigenous village, with the addition of a new center, built in european "style", where was situated administrative buildings and service buildings. Around the '20s, there were military fortifications in cities like Libreville and Brazzaville; these fortifications are documented by some designs made by those in charge of the military genius that worked with the AEF government; some of these projects illustrating the inclusion in the Liberville and Brazzaville urban fabric, are kept now in the archives of the French colonies overseas in Aix-en-Provence in France. In the case of Brazzaville, the fortification provides for the construction of a military camp called Tchad, in the central area of the city. We need to explain how this colonial cities of the AEF are structured, starting from their creation up to the '60s, when this countries gained indipendence. Colonial cities have a somewhat peculiar plant: they are divided in two urban areas: the colonial center, a commando with the main public functions: administrative buildings like the municipality, the army's general staff, the ministries, the embassies of the great metropolises , institutional buildings, schools, services, ... The center of these colonial cities is nothing but the pole of greatest attraction, it is equipped and adapted to facilitate the life of the settlers who came from Europe to worked there, but also to allow a normal life for their families; the other area there are the outlying areas that were originally referred to as "villages indigènes", residential neighborhoods for indigenous peoples. These residential areas are designed outside the center exclusively to provide accommodation for indigenous residents. It would seem that in some cases these residential neighborhoods are planned in place of the previous indigenous villages that existed before the start of the urbanizing operations conducted by the French, but we can not say

with certainty. Brazzaville is the city of the administrative power of the AEF, so it will know a fairly rapid development between 1927 and 1955, but it has adapted to this since 1910. The city does not escape the pattern of colonial cities described above, indeed, in this case, this type of urban structure is even more strong. The first city was born right next to the river Congo, in the early plans (1927), and we really notice the separation of the different urban areas. Brazzaville center, certainly due to the not very flat terrain (there is a ditch) presents a slightly irregular fabric, the main streets outline quite large lots, in which the colonial buildings are inserted , with all the functions mentioned above. Residential neighborhoods for natives were initially the Bacongo village, located southwest of the center and Poto-Poto village, located on the north side of the city. These residential neighborhoods for indigenous people are lacking in services and have only minimal infrastructure. These two districts are characterized by a very regular plan grid, and this was possible because they were built on two flat areas (*plateau*).

The city of Pointe-Noire, which is the other terminal of the Congo Ocean railway, was founded a little later than Brazzaville as mentioned before, but it developed quickly enough to make it possible to run goods and raw materials along the transport corridor. The city plan started from the port on the ocean coast, then it extended to the mainland. Here too, as for the case of Brazzaville, the center is the part reserved to services and administrative

buildings, but for the first version of the plan, until the '20 of the XX century, not being capital like Brazzaville, Pointe -Noire is just a small city gathered around its seaport, providing for an only residential district for indigenous people, situated in an area called Mvoumvou, which was the name of the ethnic group that comes from the a big family called Vili, who has always occupied this part of Congolese territory. At a demographic level, Pointe-Noire is the second city of the Congo, which was still called Moyen Congo in this period, and lately the name changed, between the '58 and the '60s, only at the independence of the state, which will take place in 1960 .

As we have already seen, these two cities of the Lower Congo follow the pattern of the colonial cities. At least in their first versions, the main differences are only linked to the greater population density of Brazzaville, but also from the role they had for the country under French domination. The urbanization of Congo began with the French planning, and has given the current arrangement of the original part of both cities. In some knots of the colonial center one can easily recognize a pattern, in the urban fabric, which seems to remember the Haussman's system of oblique axes , especially in the central area of Pointe-Noire. The growth of the two cities has generated a very regular residential fabric outside the center, as we can see, for example, in the city of Brazzaville with the Plateau and Ouenzé districts.

We can say that every single detail has been programmed for the urban scale. Cities have continued to grow, from the first city born along to water, and the population increase, in a fairly short time, has contributed to the city's extension to the suburbs. In Brazzaville newer residential districts are born both in its northern part (Plateau des 15 ans, Batignoles), and in its southern part (Makélékélé going towards the river Djoué et Mfilou, which is located close to the railway station that has the same name). Around the Mfilou railway station the city continued to grow even after the country's independence.

The architecture of the city can be divided into two groups, one that includes residential constructions and one that includes special buildings architecture. In the book "Produire et gérer the habitat à Brazzaville" by Maurizio Tiepolo, some dynamics related to the acquisition of land for

construction are explained. The same book also tells us of the residential building of Brazzaville, which can be divided into two sub-groups: the construction of residential neighborhoods for

indigenous people and the one for european settlers. It can be said that the buildings of modern white residential neighborhoods are provided with urban floors, and are divided of two different types . They are mostly single-family houses with different number of bedrooms (they have a two or three bedrooms). Residential areas originally planned for the natives depends a lot on the individual owner: usually they build single-family houses according to the economic possibilities available. Often the walls are built from a semi-perforated block of concrete coated with plaster on both sides. The roof is often simple, ends with an aluminum sheet supported by wooden uprights. Special buildings, on the other hand, are almost always built with a rationalist Mediterranean style. We have defined many European-style buildings as colonial, in which elements inserted are made with local materials.

Central Africa colonization has given way to a real process of urbanizations; we have seen how the French territorial planning structured the South Congo, with the construction of the railway and other main infrastructeres, with the urbanization of the areas close to railway stations. The connections between the various cities were useful to the French for a better territorial administration, but they were also the elements that have facilitated life for the natives. The low Congo has continued to grow both at economic level and at demographic level, it has passed from a population of about 600,000 at the beginning of the colonization era, to a population that reaches about 1,200,000 inhabitants a few years later.

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A paradigm of the modification. About a Vittorio Gregotti's project

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Keywords: *Modification, Settlement process, Difference, Type, Measure*

The paper, through a critical reading, deals with the Vittorio Gregotti's project for the Ex Area Saffa in Venice. Studying the project as a paradigm of modification, this is a pretext to reflect on a modality of intervention in a particular existing settlement system, characterized by the unresolved overlap of two urban fabrics and by a heterogeneous and fragmented typological presence.

I think that Gregotti's project works on two concepts: that of difference and that of contamination. I consider that these concepts are the link between a morphological idea and a typological solution within a modifying method and they are useful for defining a settlement process.

Moreover, I think given that the measure is considered as the regulating principle of rationalization and mediation between context and project - it should be considered an essential instrument for the critical reading of the project as well. For this reason, through some redesigns, I would like to break the project up into its different parts and different reading levels: on the one hand, I focus on the relationship between the pre-existing settlement structure and the project to investigate the methods of reconnection, consolidation and completion; on the other one, on the relationships between type, form and space to understand the role of the context, and its advices, in design choices.

By means of a critical analysis, my paper deals with Vittorio Gregotti's project about the Ex Area Saffa in Venezia. I chose this project because it can be considered like *paradigm of modification*, I mean like an (also speculative) example of a double critical action, on one hand of comparison with the pre-existing conditions and on the other hand of measuring - not only quantitative and physical - in the project, in order to transform the existing reality into a new one.

So, the analysis of this project is a pretext to reflect upon a possible way of intervention on a particular existing settlement system characterized by the unsolved overlapping of different urban fabrics and by a typological heterogeneous and fragmented presence; this is a double analysis because, on one hand, it includes the morphological idea and, on the other hand, the typological solutions (two moments separating only for the temporary abstraction) and it is linked by concepts of specificity, difference and variation.

It's equally necessary explaining: why Venice and why a project of the eighties? In Venice, until the second half of the eighties, some of decisions taken more than an earlier decade have an impact on. Because of the inundation of November 4, 1966, in the 1973 Venice gets the first Special Law, according to which 'Venice and its lagoon's safeguard is considered like a national interest problem'[1], not only by the State and the categories involved more directly by the Law, but also by the architectonic culture that – through the promotion of different comparisons between various cultural positions – wants to start a series of experiments 'so that the architectonic culture concentrates on not yet resolved questions about ways, methods and limits of possible interventions into the old town, inciting the reopening of a discussion about the meanings of conservation and reuse policies' (Aymonino, Pastor, 1980).

However, thought Manfredo Tafuri's justified attack on Iuav, during the academic year 1991-1992 in which he attacks against a foolish government fossilizing and selling Venice to the tourism (Menegatti, 2012), in the projects of the eighties in Venice, it is possible to recognize some important and precursory examples of testing of the old town. Moreover ,the fact that the Ex Area Saffa has been the demonstration of really different positions opening to a series of operative ways, is peculiar: those same positions and ways testify the ideological fragmentation, the new *Order excluding the Law* (Cacciari, 1984), that apparently seems to have complete vocations of the Modern.

There are two ways: one of them refers to Francesco Dal Co's words about *10 immagini per Venezia* (it is the title of an exhibition following the formulation of a workshop of 1978 for West Cannaregio; the designers are: Raimund Abraham, Carlo Aymonino, Peter Eisenman, John Heiduk, Bernard Hoesli, Rafael Moneo, Valeriano Pastor, Gianugo Polesello e Giuseppina Marcialis, Aldo Rossi e Luciano Semerani; the exhibition has been promoted in 1980 by the University Architecture Institute of Venice with the collaboration of the Department of Culture and Fine Arts of the City of Venice and, moreover, the mounting by Gregotti). This way consists in the possibility (and in the duty as well) of an attempt to reopen a discussion about meanings and conservation and reuse policies through a process cutting off from reality and reappropriating the instruments that belong to the planning discipline. Dal Co deals with the theme of safeguard referring to a 'process of delegitimization' that the project suffers by the reality which 'often takes part into the architectonic projects to freeze nerve centres and to block possible reactions', to suppose the 'decrease into the finction' (Dal Co, 1980). This attitude seems to resist and oppose to the development of the venetian situation that has transformed a state of emergency into another opportunity of bureaucratization and disciplinary exclusion. On the other hand, we can consider some projects (like that made by Giancarlo De Carlo at Mazzorbo, by Vittorio Gregotti at the Ex Area Saffa and by Gino Valle at Giudecca) compensating for that alienation attitude, which resists into some of the ten projects described by Dal Co, through specific complementary condition: that of belonging. And this way focuses on 'the question of morphology and typology' (Menegatti, 2012). It concerns a morphology defined, in the specific case of Venice, by the fundamental relations

1 "(…) La Repubblica garantisce la salvaguardia dell'ambiente paesistico, storico, archeologico ed artistico della città di Venezia e della sua laguna, ne tutela l'equilibrio idraulico, ne preserva l'ambiente dall'inquinamento atmosferico e delle acque e ne assicura la vitalità socioeconomica nel quadro dello sviluppo generale e dello assetto territoriale della Regione. Al perseguimento delle predette finalità concorrono, ciascuno nell'ambito delle proprie competenze, lo Stato, la Regione e gli Enti locali". Art. 1 della Legge del 16 aprile 1973, n. 171.

between emerged lends, built lands and waters where, like Giuseppe Samonà in 1970, the organisistic relation between nature – architecture and its own denial as well coexist.

It's also important to say something about the Area Saffa that is situated on the biggest of the three islands which define the system of West Cannaregio and they are linked only by the side of Rio di Cannaregio, in the North – East. The area is situated into a complex system, nowadays, defined both by Santa Lucia Station, in the South – West in Venice, by the Lista di Spagna in the South – East in which there is business and tourism, and by the front of the Ex Slaughterhouse, on the next island in the North – West, where there is the residential fabric of San Giobbe's.

Since fifteenth century, the West Cannaregio Area (from Canal Regio) seemed being divided in two by the conventual unit of San Giobbe's. The front of the channel was already shaped and the buildings were organized in the area following agronomic rules. Since then, this morphological shape defines an 'unfinished urbanization' with a thick rural character (Concina, 1980). Interventions of formal retraining happened between the seventeenth and eighteenth century, especially for the Lista di Spagna (Savorgnan Palace and Labia Palace). In the meantime, the charitable residences increased, like as Borghetto and the Ospedale delle Vecchie at San Giobbe's, the Ospedale della Croce in Fondamenta del Macello, Moro's houses, Leonardo Pesaro's houses and those of Gonella's. The Slaughterhouse, that belongs to the nineteenth century and is the seat of the Economy Cà Foscari Univeristy and the building of the railway begun in 1860, won a series of functions and took part in the transformation of the area, from rural to a modern suburb. Although the placement of the Fondamenta from San Geremia to the lagoon, the physical layout of the area is still resistant and that is shown both by the majority of big empty spaces (like botanical garden) and by undefined and not built areas.

In the early of twentieth century, in the area of Chiovere di San Giobbe, the first centers of council houses have been realized for Venice. Instead, since the second half of nineteenth century, various industrial buildings and refineries; in particular, a factory of matches that gave the name to the area Saffa, working until fifties. In the eighties that area became residential and since then it is the place of collision between the fabric fixed on the Lista di Spagna and that is stopped towards to the Fondamenta Savorgnan, on the Rio di Cannaregio.

About the project

The presence of a certain heterogeneity and a typological scrappiness allows Gregotti to think about the 'systematic reconnection of settlement structures' (Gregotti, 1983).

On the one hand, the objective finds fulfillment in the "consolidation – completion of the existing settlement structure (…) bringing the simple and casual juxtaposition of different functions in the reality to a completed architectonic solution'. On the other hand, it is a question to look for an instrument that measures and controls planning principles of the reciprocal 'dimensioning of open spaces and of ways both into the new project and into the moments of connection to that exists' (Gregotti, 1983).

This study leads Gregotti to some changes regarding, especially, the building that separates Campo Lungo from Campo Verde. The project is usually published into a version not similar to the realization: Campo Lungo should be a kind of regular rectangle that, probably, follows guidelines by Napoleonic cadastre; instead, Campo Verde should be a kind of more compressed triangle. On the contrary, the reality of a situation shows two similar triangular spaces but occupied in a different way. Campo Verde is blocked, unworkable and solves some difference in height and functional problems as well. Campo Lungo is the crux that gets togheter the fundamental assets of the intervention.

The building, at first shown like a single fragment, is divided in more parts; one of them follows the bend of Rio della Crea combining with the water, and the other one is put on the orthogonal axis belonging to the south – west building. This building limits thrusts made by the Lista di Spagna and it is composed of three broken lines linked by exceptional solutions for two-story housing and 'sottoporteghi', that have different specificities.

Instead, the building with the extended court takes its own prominence by Palazzo Testa to which it is linked towards Rio di Cannaregio, it is separated by a small garden and has a

head with four floors including ground floor. The opposite head with the same height defines Campo Lungo and at the ground floor it contains some shops, like the opposite front of the S-building, and the central entrance of the path that crosses the court and the entrances for the two stairs with a double ramp in a longitudinal way, showing a head divided into four parts and that has some different variations. The big building with the extended court is the point of combination between 'the extern and blocked system basing on the Lista di Spagna' and 'the diagonal system on Fondamenta di Cannaregio' (Gregotti, 1983). The second C-building goes on with the way and creates Campo del Camin, rotating slightly and opening, to meet penetrations of the open system. The two buildings form a part of the perimeter of Campo Lungo and they should have been connected in the head by a building unit that should have been 'exclusive element (…) to mediate the relation of types with extended court' (Gregotti, 1983).

They express totally Gregotti's idea about the completion of what exists and the concept of modification like critical action on the reality. It means that they want to bring 'the simple and casual juxtaposition of different functions in the reality to a completed architectonic solution' (Gregotti 1983)

I need to repeat these words because I think they carry the sense of a modification architecture: on one hand, there is a clear acceptance of cyclic incompleteness of what exists compared to a specific and proper contemporaneousness and so the need to modify it, having the possibility to choose what can be wiped out or not and that is topical or not; on the other hand, architecture is considered like a condition going beyond its practical function to get to a formal function. Siegfried Giedion writes: 'there can be no doubt that the aim of that symposium on the form for the human environment was to look beyond utilitarian and functional values. We must take into account that there are aesthetic values and spiritual values. Our position is therefore closely related to aesthetic values. We do not believe that aesthetic values can be added or subtracted from the outside. Authentic aesthetic values are inseparable from the object. They radiate from the object, as from the flowers or from the foods exhale the perfumes. And as elusive fragrances they determine our sensitive or emotional reactions' (Giedion 1956). So, the form is considered like an instrument (not an aim) used for expressing a value or, better, a meaning that is autonomous and heteronomous at the same time. Also, it is in the same form but modifies pre-existent settlement characters and values too, using the *measure* like a regulating and rationalizing principle against every randomness of form.

The buildings with a court make this. In particular way, the building with extended court (that with open court is already a variation) begins from some measures suggested by the context like a pretext to create a strict order of internal proportions. It is possible to see four squares making the core and two heads forming both the beginning and the end. In turn every square could be divided into four parts: horizontally by the longitudinal way that passes into all the block and, vertically, by an axis that identifies the elementary system and clears the distributive principle, that is of a line building.

The sottoportego, that is one of the obvious mention to the elements of the city of Venice, marks the rhythm and the presence of these perpendicular axis, permeates the court (linking the inside to the outside) and allows to reach to the stairs, different between two buildings with a court. From the sottoportego is possible to enter on the ground floor into the living area of two residences (A-type) that has a private garden towards the court. At the external half of the court, on the first floor there is a sleeping area of the A-type residence that is accessible through a stair parallel to that of the building. The other half part, towards the inside of the court, has a sleeping area of the B-type residence. The entrance into this residence is from the landing on the first floor, but it is necessary to climb on the second floor, through an stair inside the residence that imitates the lower one, typical of the B-type residence, to arrive into the living area. At this point, the connective vertical system rotates of ninety degrees and, through an other inner stair but transversal to the whole building, it allows to enter to another architectural item (component) of the Venetian buildings, the altana, typical of the only B-type building.

The S-building has similar features. Every two residences, the sottoportego links the external calle to the internal fields. This allows to arrange residences that, in the middle, are simpler

(six for every floor, with three spans for each one and closed into three masses) and they are accessible through an only flight of stairs that needs a bigger thickness of the building on the second floor. The part on Campo Lungo is more interesting: it is organized according to cantilever volumes on the second floor which are pushed out by the only flight of stairs that brings to the entrance of the two residences on the second floor, crossing from the central landing of the two residences on the first floor. Here the ground floor has some commercial functions. Taking care over the attack to the pre-existence hits, with a little variation, characterizes this part of the building. Like as, especially, the way in which Gregotti solves the rotation of the building: with a duplex accessible from the ground floor in an independent way, raised to the first and second floor and supported by abstractly white columns that come out of the ground, almost to remind as a constructional as a landscape condition that belongs both to a local, like the Venetian one, and a disciplinary language, like the Modern one. In the head the third part deals with the height of a pre-existent council house, raising a floor more that holds the second level of a duplex residence.

In conclusion, the ephemeral and unfinished existent morphological configuration represents the phenomenon that should be modified under a continuity idea which includes settlement, collective and disciplinary values. Depending on a regulating rationalization principle of the measure that organizes the relations with the symbolic importance given to the open spaces, the morphological configuration of the project, strictly connected to that existing, has the main role compared to the typological deformation to which is subordinate. Gregotti's aim is to gain the representation and the development of 'the idea of an architecture that can feel and go into the singular solutions in connection with the conditions of the context' (Gregotti 1983). And these specifies become the link between morphological idea and typological solution.

Moreover, the attentions for the relations between inside and outside, for the horizontal and vertical accessibility, for the articulation of the buildings in correlated to the contextual conditions and for the role of reunification of figurative solutions given to some details (into the paper Gregotti refers to the finishes in white cement of the passing porches and of the walls, to the presence of the roof terraces and to the modularity of the windows), organize 'the system of variations concentrated in specific points and they are an integral part of other regulative principles of the project' (Gregotti 1983). Simultaneously the control and the settlement and architectonic dimensioning, and in presence of the measure of the relations that exist between morphological aspects and typological deformation, 'are the values on which the concept is based on working through the idea of a structural mention but not stylistic that refuses the idea of a place linked to the notion of style and folklore with the problem of its constitution through some structural elements: the system of the measures and the analysis of values and foundations of its constitution' (Gregotti 1983).

Figure 1. Drawing of the plan of two of the three islands in the Cannaregio Ovest area. Above: the area with the published version of the project; below: the realized project in relation to the main axes of existing fabrics. Author's drawing

Figure 2. Distribution diagrams of the S-building. Top left: the structure of the different levels of the first version of the project; on the right: distribution diagram of the realized project; below: detail of the building on Campo Lungo, commercial on the ground floor, the variation of the apartment at the head and the exceptional solution of the accommodations on the corner. Author's drawing

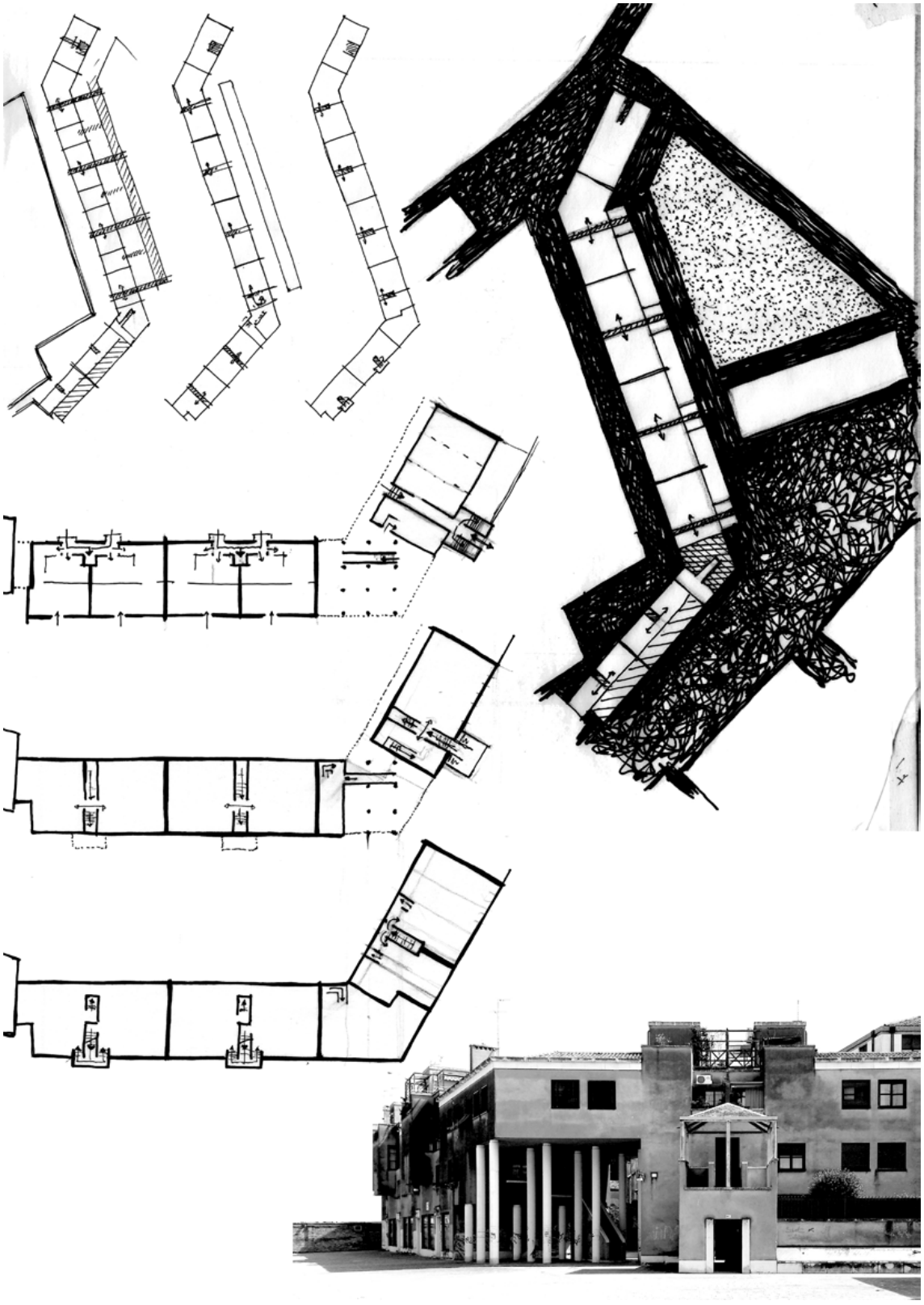

Figure 3. Study sketches on the court building. Author's photo and drawing

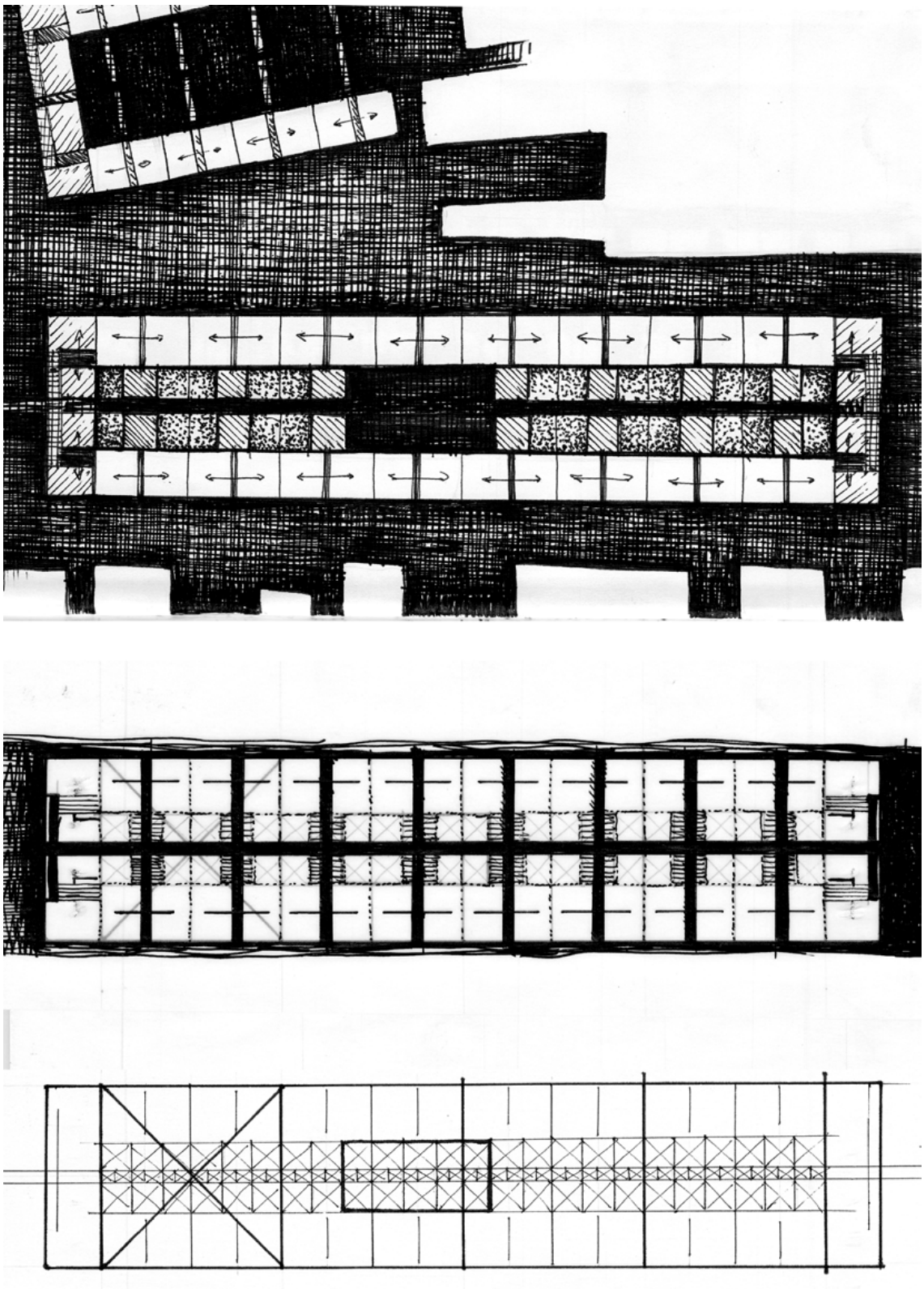

Figure 4. Axonometric exploded view of the elementary cell repeating itself in the court buildings. Photos of the courts and of a sottoportego. Author's photos and drawing

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Urban Open Spaces and the relation with Urban Development in Tirana City

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With intensive expanding and transforming urban spaces, the city of Tirana is experiencing continual rapid growth. Having plenty of open space before '90 and nowadays the reality is different, when population and living pressures are increasing, the urban developments have created a dynamic environment with different strategies and actors. Central Area are the primarily related to economic activity, where people live, work, leisure activities and natural elements are important on life quality.

This paper aims is to investigate the urban morphology of Tirana City by analyzing surfaces cover and the important Terminology for Urban Open Space. We use social, perceptual attributes, contrast of green and two central categories function and catchment hierarchy.

The main goals of the paper is to recognize the areas that can be typical examples to examine the effect of urban open spaces for understanding and evaluating the relation with the urban development.

The intetion is to build a framework for analyzing urban open spaces and to determine the rate of the impact in those areas¬ and how these dynamics works influence urban space in Tirana Context.

These findings can provide comparative knowledge and helps to study the relationship between the characteristics of urban development regarding physical and the socio-economic, political, ecological functions of open spaces.

Introduction

In today's world more than half of the population lives in urban areas. According to the World Bank more than 80% of global GDP is generated in cities, urbanization can contribute to sustainable growth if managed well by increasing productivity, allowing innovation and new ideas to emerge. Now days, in most of developed cities, socio-economic and environmental changes are seen as incentives for ideas to regenerate and improve the quality of the life and to mitigate the economic effects. Different expert and actors of the planification process are moving rapidly to make plans for the growth and needs of basic services that expanding populations requires. They also encourage investments that create a healthy development, social and friendly with the environment and more attention has been paid to research into the assessment of open spaces, green areas and their components as well as their impact on the environment. (World Bank)

Both natural and man-made open urban spaces are part of the city's landscape as part of its structural and functional part. According to their characteristics, they affect the city's metabolism, *quality of life in different ways, (Burke and Ewan, 1999); by providing psychological (Chiesura, 2004) and recreational (Antrop, 2000) services.* In this sense all the important aspects of where and how people develop their lives, economic activities, work process, recreational activities and natural elements create a relationship with the process of urban development. Consequently, each of them is affected as a reflection of their needs. On the basis of *Thompson's (2002) analysis, they are considered as places to celebrate different cultures, linked to natural life and that conserve a memory.* Therefore, it's important to identifying factors due to the influence and level of change they have on the relationship created by the environment developed with multiple dynamics. *In spite of their benefits, these areas are affected by rapid urbanization (Wasilewski and Krukowski, 2004).* They can help guide and encourage more sustainable solutions and strategies for a quality and healthy life, a friendly and environmentally friendly society with positive impacts on urban development.

Open space significance

Today Tirana represents the capital of the country but also the main city in the territory because of the different aspects of population density, economic capital and activities, recently after reforming the borders it and the larger surface. Acting as a metropolis for the diverse content of its components, which has been achieved through the intensive expansion and transformation of urban spaces. By population growth, due to immigration from the other area of the country and from rural to urban areas, about one-third of the country population carries out their daily activities in Tirana. Another aspect is from the changes in the economic and social structure of the nation. The rapid urbanization has had a significant effect on the spatial configuration of the city that is reflected in most of the territory as a chaotic pattern, created by the various layers of development periods and without a clarity of development over the last two decades. The phenomenon of this uncontrolled development with an influence in the transformation of urban structures both cause and effect the open spaces. Frequent but short-lived urban plans and often without the power to control them, reflect an unstable situation. The inherited open spaces have changed over time and show us as a different reality today than before the radical changes in politics and the economic aspect. Causes that have led the city of Tirana to continue to experience stress as a result of population growth and life pressure.

With its rapid growth and the creation of very dynamic environments, made it important for the urban development process today to seek the coordination and involvement of a variety of different actors and strategies. Often represented as single-character spaces with multiple orientations and a lack of consistency in operation. In previous researches there is no clear evidence of who were the characteristics that influenced the development of the city, which affected its space and use. Often in their absence or reflection in a large city like Tirana, have led to defined the formation of some urban

areas with malfunction or until their complete elimination of open space as a result of uncontrolled development. Unfortunately, the current situation shows that the ability to assess different parts of the city by measuring the impact of changes occurring in open spaces from the element of urban and economic development is not fully recognized so far by decision makers and plans of Tirana.

Today importance of Tirana`s Open space

This paper aims to investigate the effect and relation of the development in Tirana city, by the urban morphology as well as the changes that have been on the urban open space and their various typologies. Specifically, the objective is to recognize the areas types of urban open spaces through the revealing all important aspects that affects the dynamics process of the urban development. This leads us to understand and evaluate the relation between urban open space characteristics and urban development form and to signify a better and more careful actions in decision making.

The urban open spaces located in the center of the city have a formation that allows for a widespread use of users who make it more heavily influenced by socio-economic relations. They are influenced by their functional and qualitative characteristics, which give positive and negative results during their development process in the urban environment. These factors reflect their impact on the resident's life and activate them in decision-making for the transformation and development of their environments. This is why these spaces have an important role in the sustainability of the city's development.

Our research derives from a hypothesis that the transformation of open urban spaces and their characteristics have an important role that reflects the way of urban development and their relationship. We want to highlight the effect and impact that these characteristics have in the sustainability and oriented of development for a better quality of life. Therefore, their (transformations) and orientations are viewed as an element that can be examined and evaluated through indicators. Building a clear framework to monitor the trend and analyze the values, where it can determine the impact scale and dynamic scenarios that have positive and sustainable effects on the development of these areas. We also expect that these findings can provide comparative knowledge and helps to study the relationship between urban open spaces and the development and to contribute in sustainable development.

Highlighting the influences of the open space changes

Finding Tirana city as good case study, to examine the open space changes by types or typologies and analyzing surfaces cover transformation over the years. Where the Central Area are the primarily related to the changes from factors and the various important elements. During the history the center of the city has suffered important transformations during different periods, such as Eastern, Western, and Eastern, leaving its influence also in the way of urban space development. Replacements of the main city structure from Ottoman and Italian times during the years of the totalitarian regime to establish a declaration of the actual status. Almost the largest population growth reached during the period 1990-2000 round 200%, as a result from the transition of communist regime to liberalization of the country's market and economy, as well as opening up with all other foreign cultures. The city where had a great expansion, where the old and central part underwent a densification and modification of the previous structures. The development after the 90s to the present is characterized by different elements /typologies, but in the most important one we emphasize the economic one that has the greatest role in the urban form. Most of the areas in the area are composed of institutional workers or residential areas, but over time this has changed rapidly from small to large activities undergoing significant changes. As a result of the rapid growth the situation shows that has not been kept under control. By analyzing the changes that have taken place in those areas, we can make question from who is not been eliminated or who has traces of them. How the city has perceived this change and how the past

of open space has changed. Where and how the economy and welfare growth can have impacted, disrupting the quality of life as a result of the adverse effects in these areas. Sometimes the cause of changes is physical made from the new buildings and sometimes changing his character or way of use. In both cases of the changing process the economic and social needs are the general reasons, it's that are easily visible in the relationship between the ground floor of the premises and the surrounding spaces.

Today the municipalities aim to promote quality of life in the high density of Tirana`s, with new plans for advertising and promotion of new parks, green corridors and outdoor recreational areas. However, their efforts may face some difficulty by the excessive number of impermeable surfaces, from a lack management, or their non-compliance with needs, and the failure of previous projects nothere are many areas like those that are being developed from separate properties that require a good connection and the less of transformations and changes of use, all of which have the potential to be developed in a sustainable manner to meet the needs of the future. The changes are daily and fast, and overall development is growing. This means that in a short time decision are made and intervened in a large number, which affects and directly affects free spaces. As during the formation and the change of the open urban space, the actors that are most involved in this process are politicians, a wide range of technical professionals, the municipality, a wide range of technical professionals, peoples who live in the area or manly exercise their activity. By improving the way of their development and the function, can contribute to the attributes of the public spaces as well as the urban environment. To make them better, vivid, cheerful and pleasant, functional, or unpleasant or unsafe. Also, the development of a good and effective product depends on the collaboration of many components and actors together. Where weaknesses in the process are during decision making or how the development is done and how often an area change.

Data Collection and Analyses

This research is related to urban open spaces in order to identify the important characteristics and elements that change them and their sustainability during the urban development process. Through the use of spatial analyses, we were able to trace the types of open space by the field investigations and other supplementary materials, examining the material and creating a geographic information coverage. Through investigation we can also create an estimate of the level of change that exists in these spaces. Observation and behavioral mapping will be as a combined technique for studying the relationship of environmental behavior, a method used and brought to bear for decades (for example, Ittelson et al, 1970). The analysis will be mainly based on the methods of GIS, brings to us result in usage-based spatial articulation of places, representing shapes, sizes, densities and intensities of places' occupancies. Confronting these results with the important terminology of Urban Open Space, according to history, economy, ecology and social aspect, we can gain insight into the impact and effects of change. The research area is been selected from the criteria based on the type of function, historic evolution in the urban morphology, and the mode of urban development. Data's will be categorized into main periods, before 1990, 1990-2000 and post 2000 government.

The analysis of changes will be in different examples and ways, as physical condition and social-economical context. By determine the changes; typology, local and theoretical characteristics distingue in central categories function and catchment hierarchy. Different materials of aerial photographs, cartographic maps from 1980, 1993 to those of orthoimages in 2007 and 2015 [2018]. They were of 1:25,000 scale, up to 20 to 8cm resolution orthoimage. Some auxiliary data also helped in analyzing city plans, photographs, and historical documents. Aerials were, first, georeferenced by using already rectified orthoimage. RMS error was 0.47 and 0.32 for 1980 and 2007, respectively. Second, they were registered to UTM (Zone 34N). Analysis was done in ArcGIS environment (Esri, Redlands, CA.).

Fourteen different urban open space categories were defined: Natural, natural drainage, agricultural, open lands, vacant, military, transportation, industry,

archeological, park, canal, public, school and sport. The polygons for each type were created by on screen digitization and their related features were entered manually to the attribute table. This procedure is pursued for each study period. In the attribute table of each year exists columns pertaining to type, the area and perimeter of each polygon. Also, a set of attributes-percentage of permeable surfaces, ownership, access rights and management-are inserted to the attribute table. Ownership, access rights and management attributes are important to understand the institutional structure and the type of use. Percentage of permeable surfaces is used as an indicator of ecological integrity (Forman, 1997; Schueler, 1994).

In content of the investigated context, includes the physical features of "open space" as well as the relationship with urban development. In the following description of the context they are divided into two main points, in the physical expression of urban morphology, by accessing the forms and the size of spaces, buildings function and structures, which are clearly evidenced in the city center.

First is in the city scale, where mixed periods of development are recorded. Second is in smaller scale to defined the area like the city center, where the changes over the years are clearly seen, as well as the identification of the categories in an open urban space. After there is the possibility to define the way of the changes and determine the impact rate of the economical and urban development. At the end of the section we can give a picture of the predicted indicators, the specifications and the interlinkages of which we will consider during the development process as well as their influence on sustainability.

Urban Open Space and urban development

The intention is to build a framework for analyzing urban open spaces and to determine the rate of the impact in those areas and how these dynamics works influence urban space in Tirana Context

In the focus of our research we will define the open space as an unbuild area, natural area or not, between or around them buildings, depending on the recent urbanization of the area. Some of the spaces have an impact on the quality of life of users as they are part of the city's landscape. We are oriented to those spaces that have a closer or interchangeable interaction with the transformation during the developments. Our study exam the open spaces in the city centers with the largest composition and density around the world. Where the demands for quality of life are the highest, directly affecting the largest number of residents.

To identify and highlight the key impacts, what they are and where they and after to determine how they affect the sustainability and orientation of city life. We attempted to analyze through time-space analyzes of demographic elements; economic, social; and needs and abilities. From the official data we understand that daily flows are great for the city and especially for the center of Tirana as it is still a polycentric city. Inlet and outlet flow in Tirana district according to INSTAT 2011: (daily inflow) = 3.851; (daily flow rate flux) = 3422; (daily entry-exit ratio) = - 571. Also, according to INSTAT analysis on the type of housing in Albania

The largest percentage is of the single-family buildings with about 70%, followed by those with 15 apartments with 16% and those with more than 15 apartments with 12.4%, while others are only 0.7%. And most of the dwellings are family owned and only 6.3% are rented. Albania has had one the minimum growth rate of gross domestic product in 2013 (1.00) and the maximum growth in 2015-2016 (2.22-3.35), whereas the impact of construction in 2014 till 2016 has a constant result to 8.9%.

Through evaluated area as a potential for commercial development due to current lack, which in relation to open spaces show us sensitive areas for future developments. Whereas in terms of influences from the social elements, as individually or not, we can see that most part of the population are located in the most dens area where the smaller remains area often suffer the temporary functional change but in time – space analyses seems to be the ones that have been most eliminated, from the residential building's

needs. In a comparison of the relationship between the economic elements and those of the physical changes of the open spaces that preceded 1990 until today we note that the previous lack of these developments has rapidly gained its influence in the territory.

Discussion and Conclusion

From these findings we can provide comparative knowledge and helps to study the relationship between the characteristics of urban development regarding physical and the socio-economic, political, ecological functions of open spaces in Tirana city. Urban open spaces are key ingredients in the cities' sustainability. Today these open spaces have gradually change from influences that commercial activities and buildings have introduce on them their character and power, ensuring consequences in the whole public.

The open urban areas are in the main interests of the national and local agenda, because their design and perception are affected from the socio-economic policies, governmental and municipal planning that shape the urbanization process. By using a classification, we will be able to analyse the prevailing situation and identify what can be better if we make predictions of our physical and social needs. Through these types of analysis will lead to providing knowledge of the relationship between the development elements, regarding physical and the socio-economic dimension of urban open space in Tirana. As shown in this study, another very powerful and essential tool spatial analyses is the use of GIS technology. We could have negotiated changes or finding new vision to view the relationship, together with the help of data knowledge for the final decisions. Based on the results we realized the importance and geographic advantages that GIS and gravitational model give us, as a different situation as Spatial Dimension / Policy-Making Dimension / Different Models in Developing the Town Structure / The Socio-Economic Dimension / The Demographic Dimension. Finally, with the creation of the framework where is examined the urban interventions with the significant geographic and competitive advantage, we will have a decreased chance of a new inefficient changes as well as the knowledge gained, can leads us to the future needs and sensitive areas.

Otherwise, the continual increase at a significant level of the elements that centralized everything that surrounds them according to their needs, will generate nothing else but a lack of livelihoods in the urban environment of Tirana. The way a developed city and a developing city look like they trigger a population reaction that is largely demonstrated by open urban space. A fast growth has the ability to bring about problems that need immediate and rapid solutions.

Figure 1a. Graphic of Tirana`s population growth, INSTAT 2011(Mico,2012); **1b.** Tirana extension from 1990 to today (Huta 2011).

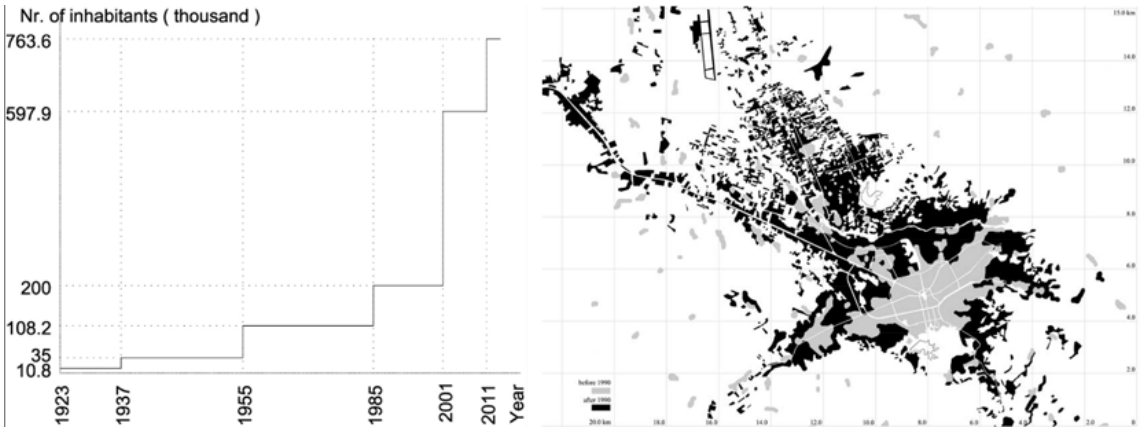


Figure 2. Map of public use spaces (Municipality of Tirana).

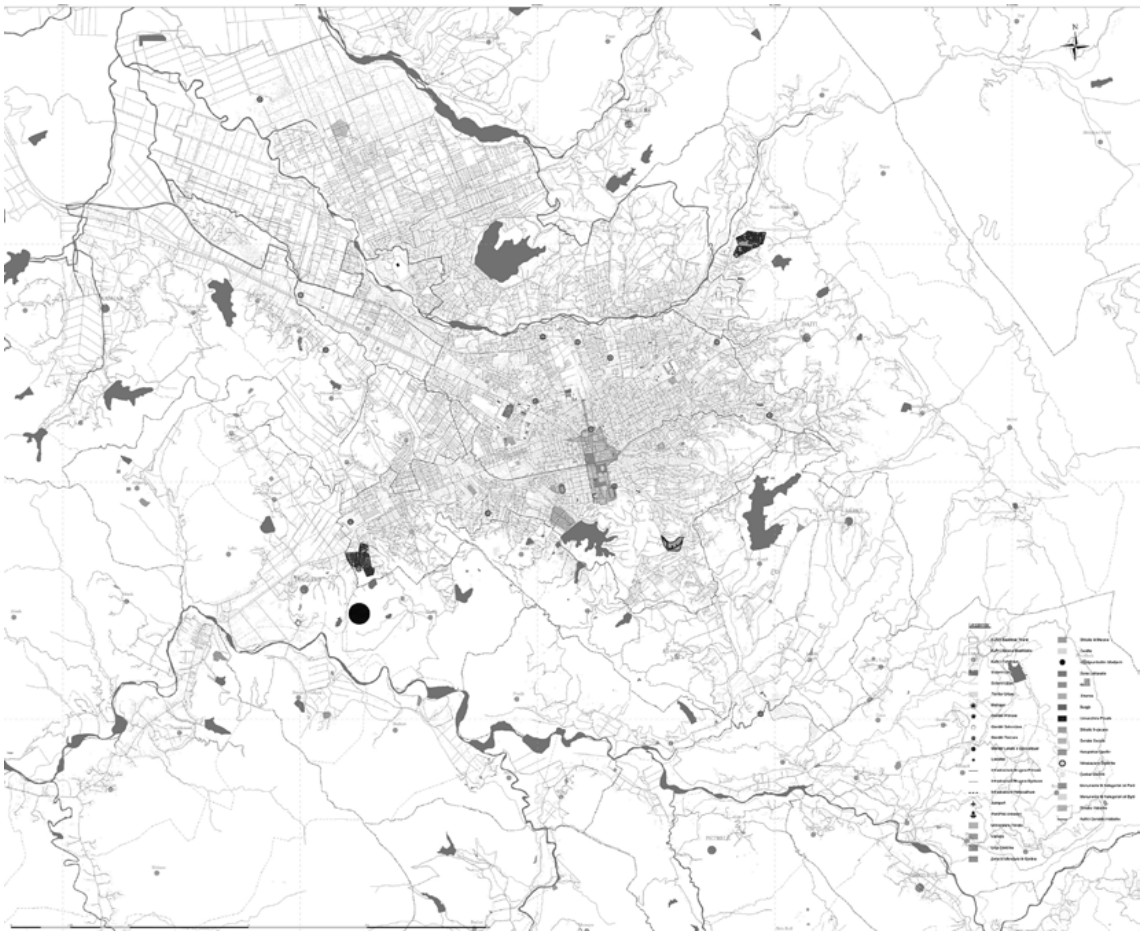


Figure 3a. Open spaces in Tirana central area: 1990; 2007; 2018; **3b.** Open space categories, changing rate 1990-2018 by categories.

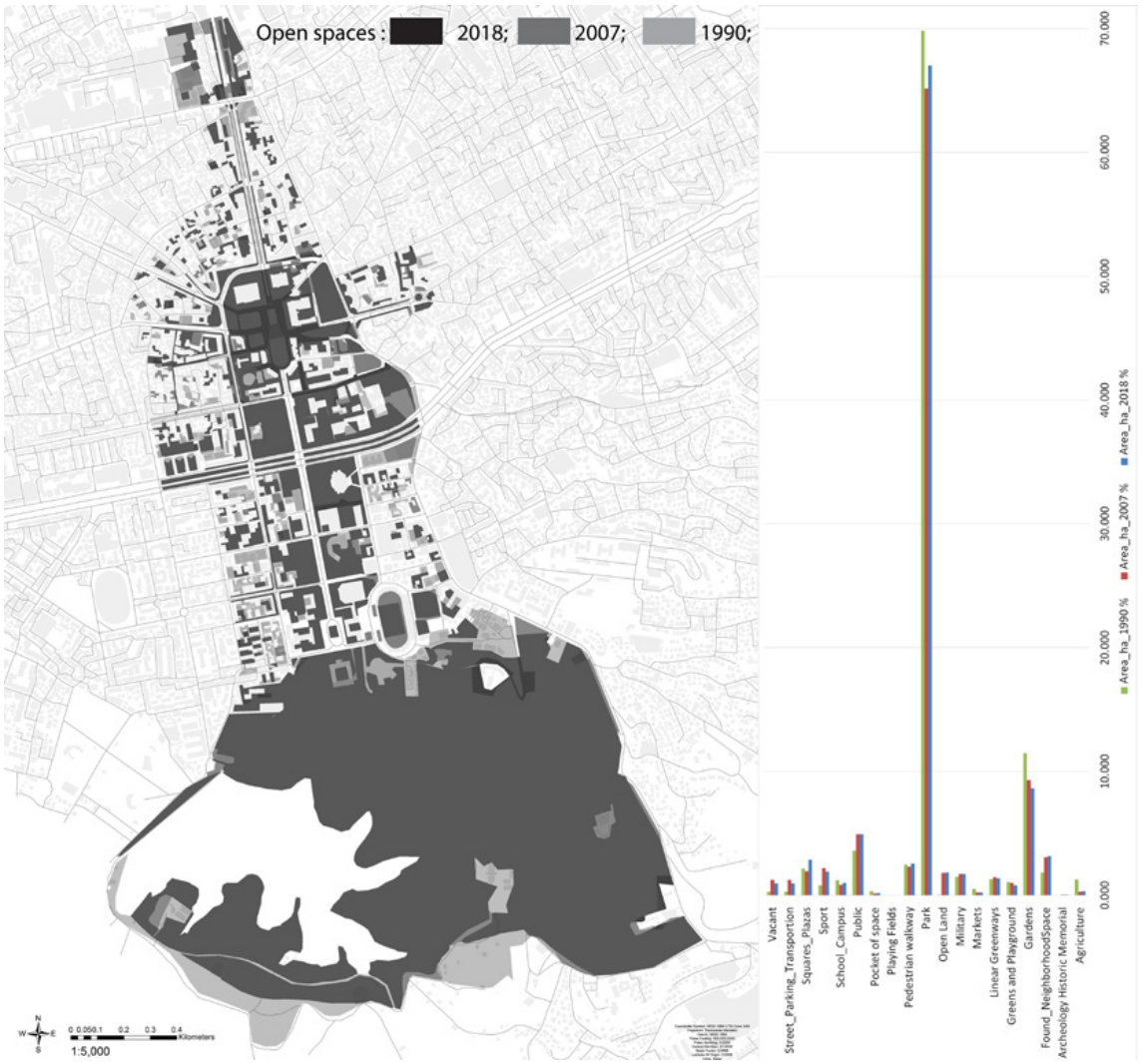
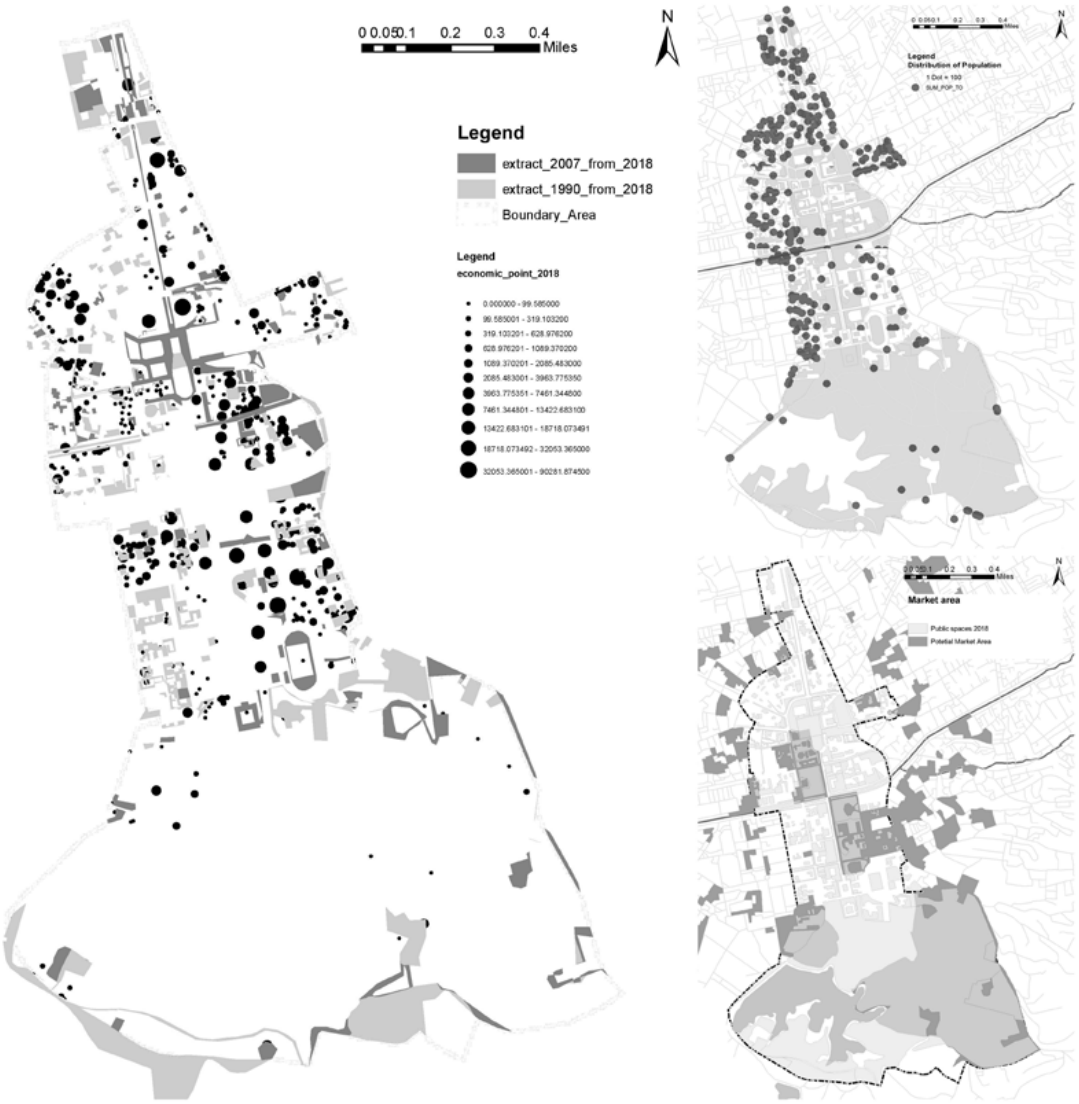


Figure 4a,b. Economical and social facilities; Population Distribution, and Potential market area.



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Commercial Spaces retrofit for City Regeneration: The Case Study of Nikolai-Quartier in Hamburg

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In history the role of cities has always been measured by the complex interweaving of the economic aspect (Weber), of material culture (Braudel), of territoriality and of its polarizations at the global scale (Wallerstein), and, more recently, of the collective syndromes of a society whose behaviours are strongly conditioned by the logic of consumption (Baumann). If trade can be recognized as a strategical factor for economic growth of the territory, a generalised criticality appears in terms of expansion and maintenance of the current assets, with consequent negative repercussions on the entire residential fabric. In particular, there is a continuous decrease and loss of status of the commercial presence in the historical centers and in the cities outskirts.

From the point of view of urban regeneration the issue of commerce must therefore be relaunched, contrasting the phenomena of de-materialization and disempowerment of the commercial experience of inhabitants and users. It is a reactive action that requires an in-depth understanding of contemporary phenomena and especially the innovative formulas that make general growth of those commercial units possible as well as sustainable in the urban body, according to a range of characterisations linked to the different parts through which the city is structured.

The polycentric context of Emilia Romagna, under the different typologies of diffused and concentrated cities, can be an ideal sample of experimental application through which to verify the development of a methodology able to connect financial-economic, marketing and social urban life aspects with those of the forms and space suitable to support the new regenerative processes.

Introduction

Since the end of the Nineties, communities and local administrations have witnessed the first dynamics of crisis and failure affecting the main modern places of consumption, such as shopping centers and large sales structures. These realities, which began to suffer from the strong space competition existing in the retail sector, since the last decade have faced increasing competition with the most recent formats and sales opportunities.

The saturation of the commercial offer, the advent of e-commerce and the change in consumption habits therefore force us to rethink the large commercial spaces and the surrounding settlements.

What in the United States has already been named "the apocalypse of retail" could however turn into an opportunity for a re-launch. Faced with a steady growth of online and a now chronic decline in demand in physical stores, it is necessary to rethink the idea of the city, reviving the suburbs arose around the large commercial areas through structural and targeted interventions carried out by a strong collaboration between the public and the private sectors.

This paper tries to approach the dynamics of the commercial sector as significant factor in the transformation of the urban territories: in this scenario the public-private partnership become an essential apparatus to re-enter the interventions in support of this type of activity within the policies of urban promotion and regeneration so that sales points could still contribute in an essential way to the vitality and safety of the urban environment, restoring its attractiveness as a public space alternative to the consolidated historical city. The case study of the Business improvement districts (BID) of Hamburg, as one of the best European contemporary practice of multiple intervention of management system between municipality, property and business owners, is here analyzed and proposed as a real tool to improve the socio-economic standards and services of the existing urban and commercial sectors and promote their revitalization.

There are many causes that lead to the crisis and the eventual dis-mission of a shopping mall. Generally it is a combination of them, which act simultaneously in a negative way over a longer or shorter period of time, under a global framework that finds its reasons in the contemporary society's evolution.

The economic crisis of the commercial sector of 2008 is the main background of this situation, which has not contributed positively to the worrying phenomenon of the shopping mall crisis. The analyst Jim Sullivan said in an article for the Wall Street Journal of 2009, that the worrying slowdown spending per citizen would have led much of the shopping mall to a slow and inexorable decline. In fact, in 12 months sales declined by 7% only in the United States, affecting the already mall crisis. This is because large corporations were the bearers of incurable debts, as was the example of General Growth Properties, owner of 200 mall in April 2009, and which filed for bankruptcy because it was unable to finance debts for millions of dollars.

The saturation of the commercial offer is included within the causes of the shopping malls crisis since most of the commercial spaces are no longer isolated between the residential and natural fabric, but around them there are big boxes and strip malls with a wide and different commercial offer of medium-large distribution. The smaller formats near the mall do not constitute a real competition to the mall itself, but rather a completion of the offer, the real competitors are instead other types comparable in size and sales per square meter that have been built in a short distance, often in better positions of easier access by interfering with the catchment area. Moreover In some contexts, most of users may have lost interest in shopping centers that arise in their communities, carrying out their purchases in new sales formats or in the latest generation of mall.

Finally, to the already considerable number of factors of crisis, the global e-commerce spectrum plays an important role as a contrasting factor to direct sales. In fact, online commerce has opened a new frontier, creating changes in the dynamics of traditional retail. There are many advantages that consumers can choose more and more online purchases, also due to marketing strategies that make it increasingly efficient, simple and often cheaper.

The consequences for the phenomena of crisis are considerable if one examines the

impact that an underused shopping center has both on the territory and on the society of the urban context. Perceived in some cases as a void, it could become a discontinuity between the infrastructural connections potentially influencing the degradation of the surrounding areas and losing the economic and social attractiveness that once characterized it.

In general, a set of recurring factors can be recognized, attributable to the poor quality of many operations in which the financial and territorial speculation component has rewarded localization or commercial planning inconsistencies. The aspect of this dynamic which is more interesting to us is its effect in terms of physical storage: most of the commercial volumes, atopic containers and unrelated to the context in which they are located, emerge today as single-purpose, compact and self-referential platforms, which they often find difficult to accept operations of functional reconversion and morphological recovery. However, the mono-functional typology of the enclosed mall, for almost a decade, continues to be re-proposed with few variations.

Methodology

At the base of the re-launching-strategic lines is the will to direct the urban development according to a model of compact city that is able to manage the expansion within a metropolitan regional scenario through both a multi-purpose use of the territory and the promotion of urban densification strategies.

The strategies proposed here encompass some guidelines drawn up on different scales. In times of internal demand crises, "complementary" functions can thus become the backbone of the new shopping centers becoming elements of greater commercial appeal with a reduction in investment risk, while "anti-sprawl" strategies attempt to establish a link with the territory, in terms of accessibility, recovery and management.

The changing needs of the consumer society is another guide to change. So, we deduce the need of the commercial typology to be always evolving: it is then necessary to rethink the commercial format in line with the revision phase of the current model in response to new purchasing trends, adapting to the new needs of the consumers, and, offering something new, always able to keep them in constant excitement.

Many of these shopping centers are physically and economically mature places for major renovations. Some of them are no longer suitable for commercial distribution on a regional scale, but many are well endowed with the characteristics of a site with potential mixed uses that try to integrate multiple functions at the same time such as trade with dwellings for residents with differentiated incomes, offices, services and public spaces oriented to mobility served by public transport.

The inclusion of new functions recalls an important concept: that of "fungibility" which, in the new real estate market, resides in the urban and physical aptitude of a building to assume different uses over time and therefore to place itself on different markets.

The hypothesis of creating a poly-functional platform on the one hand represents a choice of apparent necessity but requires some strategic and planning measures, such as the selection of functions, which must correspond to potentialities already expressed in the territory, and be possibly integrated with each other; flexibility in the planimetric configuration in the space and guaranteeing it even over time; cost-effectiveness and management, also through sustainable solutions both from an sustainable solutions point of view and in construction techniques;

and finally an architectural concept able to correspond to the conditions expressed above and at the same time to give quality to the space that must become a pleasant and welcoming place to spend, for example, part of one's free time.

The new integrated functions (residential, civic, cultural and educational) find specific advantages in the proximity to the sales activities for the cost of space, the size of the surfaces, the location, accessibility and the presence of additional services already present in the structure. These functions and the numerous success stories highlight the advantages of multi-functional systems that have arisen following the crisis of commercial activity alone and make us reflect on the actual limitations of the mono-functional structures that are still re-proposed and replicated.

Ex: Surrey Central City, Vancouver (Canada)

To bring the place in crisis back to the center of the commercial dynamics of the area we must take into consideration also some redevelopment operations: while maintaining the commercial function prevalently, they involve radical changes of the existing structure with precise modifications, partial demolitions or extensions. These redevelopment interventions provide consumers with a more modern shopping experience with substantial changes in the type, distribution and relationship with the context of the building in crisis and, in the best cases, redefine the urban fabric between the mall and the surrounding areas , reducing or canceling the perception of the sales area as a fragment of a city fallen from above.

Ex: Rundhurst Village, Chicago (USA)

Looking at the situation from a wider urban point of view, the commercial structures, which have helped the spread of automotive culture in last decades, are now reaching the end of a cycle, and offer a unique opportunity to reverse the trend of urban sprawl, creating real neighborhoods inserted between widespread suburbs and the consolidated city.

These spaces therefore have the characteristics and dimensions that can contain projects of a sufficient scale to offer real benefits for the community.

To make it possible, it is essential that the project of revitalization of the commercial space does not remain an isolated intervention but is inserted within broader urban projects with the aim of promoting a future vision not only in response to the problem of the crisis and of the eventual dismissal, but predisposing the context to accept a new urban model in its condition of suburbanity.

In parallel it is also important to gradually start a transformation process by preparing the context to accommodate the "over time" change. A phased transformation, in fact, takes into account the potential of the first settlements to incentivize and encourage subsequent developments in the area, at the same time strengthening existing ones and influencing the attractiveness of further investments.

The observation of cases of revitalization has shown that private funding is more addressed to solutions considered "safe", with a certain profit and in short times. These solutions are usually of a functional type, in spatial organization and in the building typology, aiming for maximum efficiency with reduced costs. In these cases, the involvement of the public actor becomes fundamental as it introduces a guarantor of principles that take into account not only the design vision within the urban planning instruments, but also the definition of a real management agenda. The role of the public actor becomes, than, that of promoter and coordinator, ensuring an interview with its representatives, private actors and citizens themselves.

From a management point of view, to rethink the artificial shopping centre format as elements no longer detached from the urban context but as an integrated / integral part of the urban fabric morphology it is necessary to develop new policies and to operate with shapes of private - public partnership led according to the well-known City Centre Management model.

Application Case Study

In general, the City Centre Management (CCM) is aimed to propose an action strategy taking multiple objectives into account through programs supplemented for the socioeconomic revitalization of the city center according to different intervention fields – from the commerce to the tourism and culture – that allow to satisfy the interests of different stakeholders. This in order to encourage new investment types to be applied in a process of redefining their identity through spaces in which to develop new economic activities with a view to integrated territory management. In consideration of the link between «actuator subject-financial resources-objective to pursue», Medway et al. (2007) have been identified four types of public-private partnerships with a view to the CCM including the Building Urban District (BID). At the basis of participatory processes it is possible to identify 6 common steps useful for the revitalization of the territory from a commercial point of view. They concern the: 1. Strategy and vision: identification of the subjects and urban context characteristics; 2. Management structure: establishment of a steering group that establishes the roles of the

partners and the strategies to be followed; 3. Business Plan: definition of the CCM initiative based on the shared strategy and activities evaluation; 4. Action Plan: specification of projects, timing, funding and subjects involved; 5. Fundings: research the subjects involved (public and private institutions, commercial enterprises, individual; commerce entrepreneurs, tourism, food & beverage and handicrafts, organizations for the initiative financing); 6. Monitoring: monitoring of the initiative results through extra financial key indicators.

The identification of these 6 action-common to the base of each partnership initiatives identified above allows the use of evaluation instruments based on multicriteria logics useful to an integrated territory development. The choice of the most appropriate evaluation technique depends on the specific evaluation problem to be solved, which may concern, for example, issues related to define the best merchandising mix of the shopping center, to strategic planning carried out according to the urban context where the shopping centers places, to the economic-financial convenience evaluation of the individual investment related to new shopping centers and to the possibility of choosing among more investment alternatives which is more convenient to carry out from an economic-financial point of view. The use of valuation tools based on multi-criteria logics is useful when, in the development of new shopping center initiatives, both public and private entities are involved, through partnerships, in which aspects of distribution fairness must be considered between maximization of the community welfare and adequate entrepreneurial profit.

Facing this background, Business improvement districts (BID) can be considered one of the best practice of real tool of public-private partnership offering a multiple intervention of management system between municipality, property and business owners and aiming at the revitalization of urban and commercial spaces. It represents financed business organizations whose purpose is to improve the socio-economic standards and services of a well-defined area, predominantly commercial, present within both urban and suburban centers. This multiple intervention of management system allows to work closely with the chosen local partners and to realize all the improvements that companies want for the area of interest. Many projects are focused on innovative solutions, which raise the level of efficiency of the economic system, so as to produce an effective saving of resources for businesses and for commercial activities.

The choice of an integrated management system such as the BID allows to highlight a series of benefits that can be found in its application. Among these there is the possibility of directly deciding the types of services for which the area under intervention is intended and direct assistance in relations with the City Council, the Police and the public actors in general.

The economic benefits are determined by the increase of pedestrian flows and customers in the area subject to intervention, of people employed resulting in job creation, of the efficiency of the economic system with a reduction in costs for companies through the establishment of a business network with neighboring areas. Social benefits can also be defined thanks to a reduction in the crime rate that allows the conversion of the entire urban area, which is associated with a renewed and possible promotion of the commercial site in a coordinated and continuous way.

The financing of the activities and services offered by BID takes place through the levying of a special tax, in terms of percentage of the taxable value on the real estate property occupied by the economic-commercial enterprises active in the urban area of reference.

The process of setting up a Business Improvement District identifies a series of phases, whose application takes place in a sequential order. First of all, it is necessary to demonstrate the need to establish a BID through a qualitative and quantitative feasibility study. In this phase, it is fundamental to know how to grasp the interest of the private sector, and to establish a partnership between the public and private ones. Before starting the work it is useful to delineate the potential boundaries of the area to estimate the income deriving from the intervention (on the basis of different tax rates) and if it is convenient to elaborate a "general vision" of the district that is expected to be reached with the main stakeholders. Once the projects are examined and evaluated, it is necessary to analyze in detail all the problems present in the urban area of intervention, highlighting the critical issues and how the proposals made in the design phase are able to improve the situation, concluding a draft BID Proposal. Once the actors involved have been selected, it is essential to elaborate

a Business Database containing a list of general information and above all an income declaration of each company participating in the realization of the work. The proposal, if approved, passes to the final phase and the approval of the local authority is formalized. Once the vote is positive, the companies involved in the construction of the work will have to pay the realization tax which will then be the task of the local authority to transfer to the resources of the steering committee that will proceed with the launching of the initiative.

The city of Hamburg, in Germany, has proved to be a forerunner in the promotion and adoption of the BID plan since, as early as 2005 (since January 1), it established a "Law on the strengthening of retail districts". Specifically, since it is a federal state, Hamburg has approved a decree to implement and promote the use of BID which is predetermined, as it is temporary organizations.

The case study we decide to analyze is located inside the Nikolai-Quartier in Hamburg, the largest European district for business improvement in the city center, with a project volume of 9.3 million euros. It is, in fact, the largest BID in Germany, located within the City area 10 near the Town Hall, between the Chamber of Commerce at the Rödingsmarkt and the Alter Wall at Willy-Brandt Straße. Thanks to the BID plan currently in force (August 2014 - July 2019), this district has promoted a program of revitalization interventions as a pole of attraction for the entire city. These measures include a redesign of public spaces in order to increase visitors' attendance, with a new urban traffic management and an improvement of the lines of public transport to facilitate access to the neighborhood.(Figure 1)

The new complex of shops and offices has been financed and implemented by Art-Invest Real Estate, an investment and development company of real estate projects. The company has invested a total of 250 million euros in the site, which already in 900 represented the most lively commercial artery in the city. For this, it was decided to recreate a new commercial pole that extended on the existing boulevard for 150 meters, including a pedestrian bridge over the Alsterfleet canal (Figure 2), exclusive office spaces, new shopping areas, restaurants and an underground car park hosting 220 vehicles. The general complex also includes the nearby Bucerius Kunst Forum (museum of about 200,000 visitors a year), relocated, according to the project, in the center of the new complex, implemented by increasing its dimensions (from 2,500 m² to 3,400 m²) and developing the new polo on four floors in order to meet the need of the plan "Tradition, art and quality" required by the BID. It is therefore clear that the main strategy has been to bring together within the complex more functions in which the management of the BID district turns out to be of enormous help as It acts as an information interface between residents, landowners and contractors.

The project of reconversion and new construction of the historic building complex was launched for the 2013 International Competition and was won by the Gerkan architecture studio, Marg & Partners (gmp). The project involved the construction of five adjoining buildings located right next to the political center of the City of Hamburg (the city hall), in particular, the "new" Alter Wall, still under construction, will be a representation of tradition and innovation in the historic center of Hamburg. With the new portico from Großer Burstah to Neuer Wall, the pedestrian bridge over the Alsterfleet, the shops and restaurants along the avenue, it has been possible to give new life to the neighborhood, a mix of art and commerce in the city center. The complex consists of thirteen levels of which: three for retail (10,000 m2), six for offices (18,000 m2), four for underground parking (220 seats) and an art museum (about 3,000 m2).(Figure 3) During the construction of the Alter Wall all the natural stone facades of the historic buildings have been preserved, moreover, the new river front facades have been realized with the same natural stone and have been studied to resume the rhythm and horizontal lines of the existing buildings neighbors. Finally, a monumental atrium with a 90-meter-long glazed roof and extended over six floors, floods the office spaces. During the implementation phase, the commercial spaces are being rented, while the completion of the entire work was scheduled for the second half of 2018, allowing the Alter Wall complex to receive LEED certification (Leadership in Energy and Environmental Design) in full compliance with the regulations on the subject of Sustainable Architecture required by the European Community.

Conclusion

It would be out of place to replicate solutions adopted abroad in historically different institutional contexts and in conditions of greater decisional verticality. Hence the awareness that in an economic and social context such as the Italian one, only solutions that have a strong impulse and support from bottom up can really allow the creation of collective subjects able to manage a process of promotion and enhancement of an area urban.

As in all sectors of contemporary society the considerable speed with which new modes of consumption influence the use of space must ensure that the commercial type, which has always been a social destination, a meeting place and a reference point in suburban communities, is always in continuous evolution and transformation in response to new needs. Only a multidimensional approach that works at different scales and with different disciplines will be able to outline the best method of intervention according to the different variables present in each context and specific case.

Figure 1.

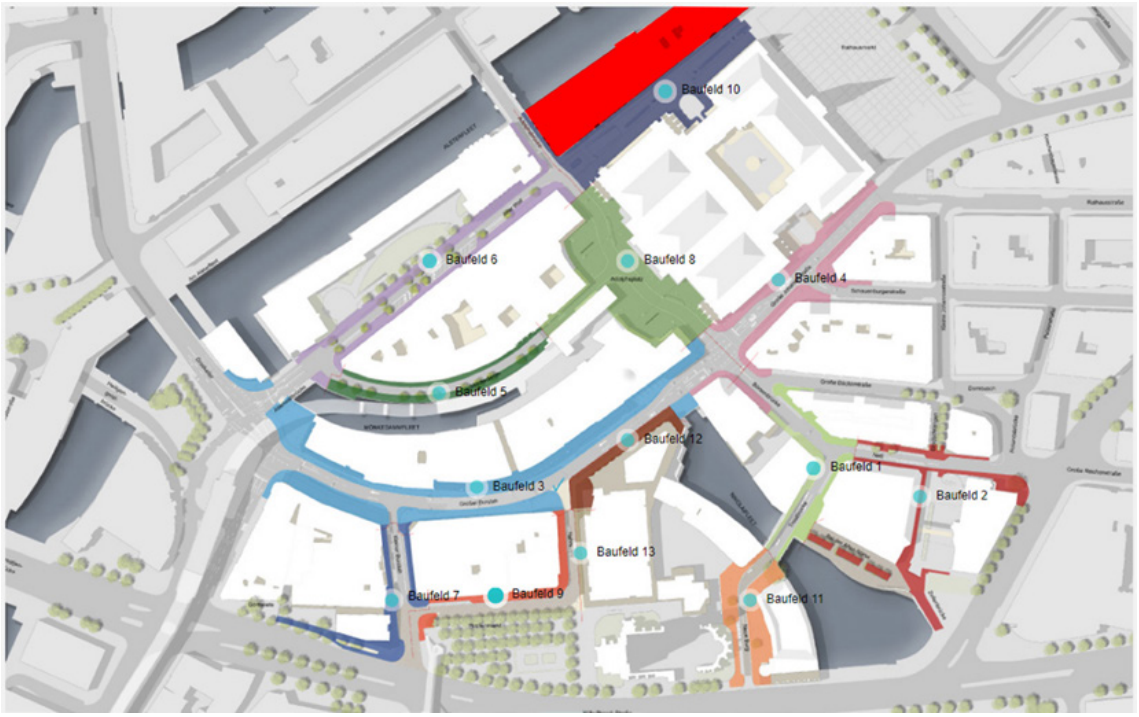


Figure 2.

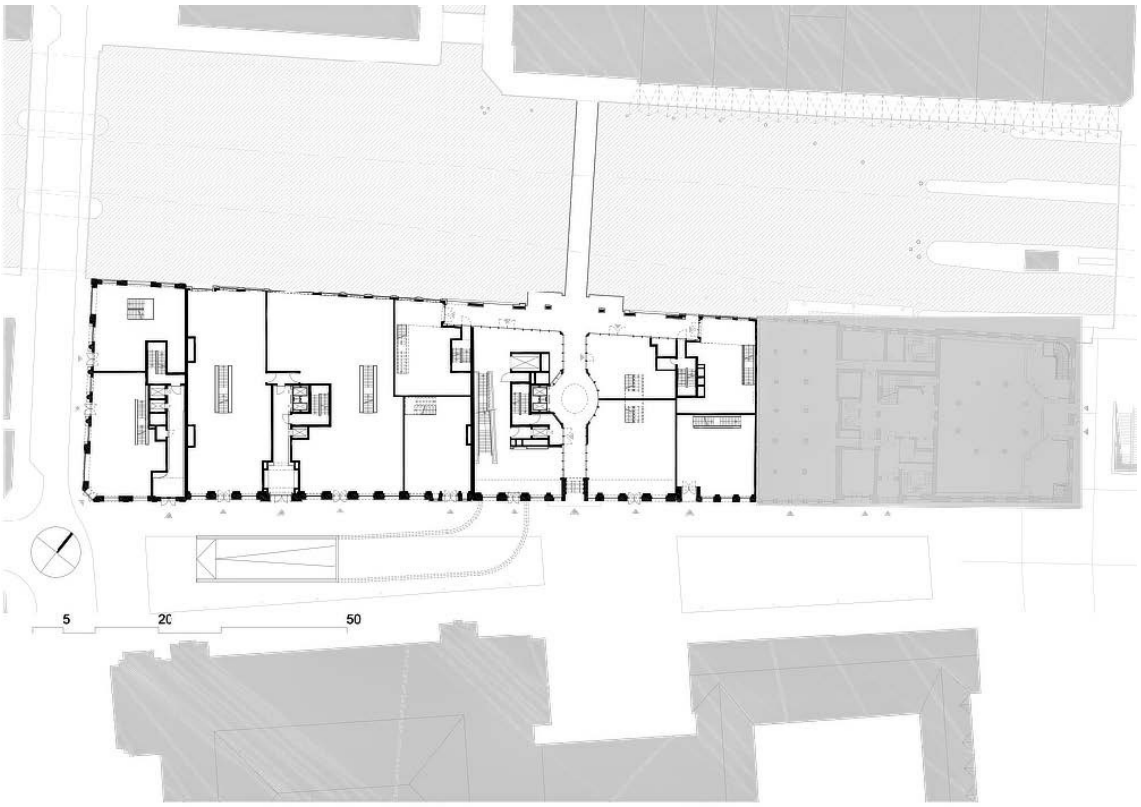
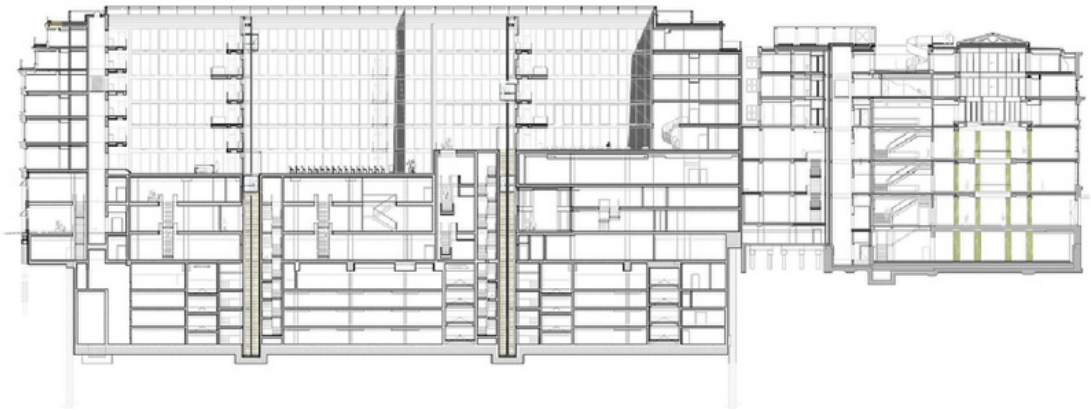


Figure 3.



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Understanding the Transformation of Urban patterns in Korça through Morphological Analyses

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The city is a demonstration of natural, socio-economic and political conditions. Depending on this, cities go through transformations that are influenced by above mentioned factors. An appropriate approach that helps to understand these transformations can be conducted through morphological analyses for different urban fabrics. In this context, this study tries to understand different urban typologies and their transformation in the city of Korça, Albania. The main components such as street, plot and building patterns are analyzed for understanding the characteristics of the spatial composition in different neighborhoods. The analyses are conducted in different scales and layers by using site observations; existing maps and processing this information by using CAD programs and GIS application. The main purpose is to understand the spatial compositions and the social dynamics that they produce.

Korça is a city that posses a rich and diverse urban fabric developed in different periods under various socio-economic and political conditions. Particularly the urban typologies can be categorized in four main periods: Ottoman period (1450-1912); 1912-1945; Communism era (1945-1990); and pro-Communist period (1990-). The morphological analyses in this study try to understand the urban pattern of these different periods; their differences and transformations.

Introduction

Urban historians have studied the city in a historical frame by trying to understand its origin, changes through time, and the facts that formed the city. The archeologist Gordon Childe focuses on first settlements in the purpose of finding the factors that caused the emergence of the city concept (Childe, 1950). Besides this, both Kostof and Mumford aim to explore the sociological and cultural reasons that formed different urban patterns during the history (Kostof, 1991; Mumford, 1989).

The terms like; "urban morphology", "urban pattern", "urban form", "urban fabric" or "urban structure", are generally used to describe the physical, man-made environment of the city. Scholars have studied the urban form in different contexts. Some of them are concentrated on the physical features of urban pattern while, some others try to understand its meanings by searching the socio-cultural factors and other indicators that form it. Among many theories that deal with spatial organization of the city, Lynch emphasizes three of them: "the planning theory", "the functional theory", and "the normative theory. The first tries to explain how the urban form should be; the second focuses more on its functional aspects; and the last seeks to find the relation between human values and the physical form of the settlement (1984).

Urban morphology is the discipline that deals with the study of urban form. Although, mostly it concerns with physical dimension of the settlements, also, it explores the results of social and economical forces that shape the city. According to Whiteland, the emergence of urban morphology as a new scientific field which analyzes the physical form of cities goes back to the first part of twentieth century (1986).

It is important to stress the fact that the urban form should not be seen only as physical entity but also, the socio-cultural and the process of its development must be taken into consideration. Although, the urban fabric is generally explained as the "physical environment" this is not enough because beside this there is the "living organism" that must be explored. "We must see any place as a social, biological, and physical whole, if we want to understand it completely" (Lynch, 1984). A broad knowledge about the society structures, cultures and their historical development in different regions provides a better understanding of their built environment. The study of urban form does not see the settlement only as an artifact but it tries to explore the dynamic socio-economic factors that form it (Kostof, 1991; Moudon, 1997).

Urban morphology should be seen as "the study of the city as human habitat" (Moudon, 1997). It is very important to analyze the urban pattern in a broad context, by taking into consideration different factors because there is a very strong relation and corporation between them in the process of molding the urban fabric. The physical environment; people living there; and the processes that shape it are main issues in the study of urban form (Larkham and Jones, 1991). In order to make a better description of the dynamism in city and the relationship between various components, many scholars use the term "urban morphogenesis" in their research (Moudon,1997).

There are many different approaches in morphological studies but Moudan summarizes them in three main categories by considering the urban form components, scale and chronology (1997). Firstly, the basic elements of urban form are defined as buildings, plots and streets. Secondly, she identifies four main scales for morphological analyses; 'building-plot'; 'street-block'; the city and the region. Finally, transformations and changes in cities are very significant facts that should be taken into consideration in the process of morphological analyses. (Moudan,1997).

M.R.G Conzen, one the pioneer scholars in this discipline, considers urban morphology as a study of the structure and form of settlements. His first studies have a historical approach by exploring the transformations and changes in traditional urban fabric (Carmona, 2001). Conzen makes a very clear and simple definition of urban form by emphasizing the importance of three components; the buildings, the plots and the streets (Conzen, 1960). The city plan is defined by the form of the streets, plot pattern and buildings footprints. Meanwhile, the building fabric defines two other crucial aspects such as land use and the third dimension of the city (Moudon, 1997; Whitehand, 2001; Kostof,1991).

Jason (1990) goes in the same line with Conzen`s approach by listing three morphological components as the basic elements of the city structure. First is the plan of the streets, which display past and present methods of transportation. A second component is building form, which is more susceptible to gradual change through time. The functions of the streets and buildings constitute a third element in city morphology. The Italian architect Saverio Muratori has a different approach by considering the buildings and their functions as the basic unit of the urban pattern. He points out that there are the different typologies of buildings those that constitute the urban morphology (Cataldi et al., 2002; Moudon, 1997).

On the other hand, Rob Krier who made important studies to understand the historical layers of the cities through morphological analyses, emphasizes the role of streets and squares as main elements of traditional settlements (Krier, 1979). Beside physical analyses, he tried to understand also the dimensions of sociology, culture and psychology in the process of shaping the urban space (Rossi, 1982).

Generally, there is a tendency to see the urban form as a finished and completed medium but the city is not a static place and it is never completed. The city is a shaping process rather than a finished milieu because it changes both with the development of the society. The urban form can be understood better by studying the processes that shape it (Argan 1983; Kostof 1991;Larkham, 2002).

In this context, this study aims to have a similar approach in understanding the urban form and its transformation through morphological analyses in different periods. The study area is the city of Korça which is one of the oldest cities in Albania and is a place where the traces of different historical periods can be seen. The history of the city can be divided in four main periods that brought different architectural styles and formed their characteristic urban patterns. These periods are: Ottoman era (1431-1912), period of two World Wars (1912-1944), Communism era (1945-1990) and Post-Communist Period (After 1990). All of these periods had different economic, socio- cultural and technological conditions and as result different architectural and urban forms were developed. The morphological analyses are conducted in different sites that represent the above-mentioned periods.

Methodology

This study tries to understand the characteristics of urban space in the city of Korca through a historical approach. It defines four main historical periods that are identified through literature research and which are very visible in the urban structure the nowadays city. These periods are: Ottoman era (1431-1912), period between two World Wars (1912-1944), Communism era (1945-1990) and Post-Communist Period (After 1990). The morphological analyses are conducted in different zones that represent these various periods. Regarding the morphological analyses they consist of exploring three basic components of urban form; the street pattern; plot pattern and building fabric. Beside physical analyses; the research tries also to identify other social dynamics that have shaped or are shaped by these urban fabrics. The data used for the analyses are high resolution orthophotos and existing maps that are processed using different software such as; AutoCAD, GIS, photoshop and Illustrator.

Morphological analyses

This part of the research consists of morphological analyses of different periods in the city of Korca. The study follows a historical chronology by starting with the ottoman period; continuing with the era between two World Wars (1912-1944); then the communist city; and finally explaining the developments after pluralism (post 1990). Each of the sections consist firstly of a short general description of that period which is followed by more detailed morphological analyses that represent the historical zones.

Ottoman urban fabric

The emergence of Korca as an urban center started after the Ottoman invasion in the 15. century. The first initiatives for starting the urban development were taken by Iliaz Bey, a

high Albanian official in ottoman state, who built a mosque, an imaret and a school and started to build the bazaar in late 15. century. Those were very important steps in the context of economic and cultural life and in the urbanization of the area. The small Ottoman town started to expand and become an urban center for its hinterland. The early town consisted of three main districts; Varosh, Kasaba and the Bazaar. Varosh was the oldest part of the city and was the district where Christians lived. Kasaba was the Muslim's district and was located around the mosque and the bazaar. The urban area consisted of a typical Ottoman settlement with organic narrow streets and detached 1-2 story buildings with courtyards surrounded by walls. The agriculture land was outside the city. Though all the developments, Korça had a limited growth until the 19th century (Thomo, 1988). After the mid of 19th century the town started e new economic and cultural development which was reflected in the transformation of existing urban fabric and expansion of the city in new urban zones. Two zones are selected to illustrate two different urban configurations for early and late ottoman period.

Organic ottoman city

The firs study area consists of a zone near the city center which is the oldest neighborhood, developed in the early ottoman era. The area has an organic structure with low rise courtyard houses that are distributed along narrow irregular streets and form a compact settlement. The street pattern is shaped by narrow paths that are connected in small irregular rings forming very dynamic block arrangements (figure 2). At the intersection of the streets we see the formation of small organic plazas that act as pauses of linear movement and places for gathering. The orientation of the streets takes in consideration the climatic condition of the area. By being positioned in northwest-southeast direction they are exposed to the local summer winds and protected from winter winds. The parcel pattern, which is very crucial in shaping this urban fabric, consist of small size parcels with organic forms. These small ownership units, connected with narrow side with the street the most significant morphological elements in forming a compact settlement. The building fabric, located within these parcels demonstrate a mixed layout of detached, semi-detached and attached arrangements. The houses from 1 to three floors are generally oriented toward their own small courtyards. Beside the main unit of the house, we see some small service units located in the courtyard as separate volumes. From the spatial composition point of view, this make a gradual transition from the larger house volumes to smaller units and then to unbuilt spaces. In overall, this zone represent a typical Ottoman settlement developed in organic layout, spread horizontally but forming a compact neighborhood.

Grid ottoman pattern

In the mid of the 19th century - as the migration continued- the city spread out in new areas on the north-east and north direction. During this time, the Bazaar was as also reconstructed by having a grid street structure with new buildings constructed with more stable material such as iron, brick, stone etc. Also, it had e new organization of the commercial and handicraft functions. Though these changes, the bazaar was not sufficient to supply the needs of new economic and social organization. As a result, some new units with commercial functions and other services were located near the residential areas. Moreover, commercial, cultural and public functions started to locate in the buildings along the main boulevards. After all these developments, Korça had e new structure in the organization of urban life and urban structure but although these changes, there was a harmony between the old and the new pattern (Thomo, 1988).

The new residential areas developed in the north-east part of the city during this period, had a big difference compared to the old neighborhoods. For the first time we see the implementation of a grid street network and more regular plots (figure 3). The new areas were connected to Republika Boulevard which was opened at this time and was one of the main arteries of the city. Beside this, the typology of buildings, their location on the parcel, relation to the street, organization of courtyard and some architectural and decorative elements

passed through some changes to adapt to the conditions of that time. The wider streets, intersected in perpendicular angles, form small rings around rectangular residential blocks. Parcels are also in rectangular shapes and larger in size. As a result, the building fabric is also developed in larger volumes and is elaborated with new architectural elements. Instead of solid walls along the streets, there is a higher presence of transparent rails and more decorative elements. These transformations were a reflection of economic developments and changes in the lifestyle of the city.

Korça between 1912-1944

In 1912, Albania was declared as an independent state and was separated from Ottoman Empire. During this period until the end of First World War Albania did not have a stable state and development because it was always threatened by the invasion of foreign neighbor countries. During the period until the Second World War, Albania had a development in different fields like industry, infrastructure, urbanization etc. At this time the state was very dependent to the western countries (especially Italy). The influence of western architecture can be seen clearly in urban plans and buildings that were designed in this time (Miho, 2003).

Korça did not have a dramatic change in this period but some new developments and processes took place in terms of urban planning and architecture. The city continued to spread out in the north part with the same orthogonal street scheme (figure 4). Some new changes were made in the arrangement of buildings such as: new organizations within the parcel; changes on the architectural styles and elements; the use of more decorative elements; and the use of more transparent courtyard bordering elements (railings). The influence of western architects can be seen in some public and residential buildings designed in neoclassical and eclectic styles. The land use compositions had also some new transformations by increasing the buildings with both commercial (ground floor) and residential functions. Also, new buildings with public, commercial, cultural and administrative functions were developed along the main boulevards. These new land use developments increased the importance of the main boulevards on the socio-economic and cultural life of the city (Miho, 2003; Thomo, 1988).

The period of communism

After the end of the Second World War (1944), the communist regime, under the leadership of Enver Hoxha, took the government of Albania. Enver Hoxha had the absolute authority to rule the country until his death in 1985. The new government made very radical reforms by establishing new rules that transformed the economic system totally. All properties, industries, banks and other commercial entities were nationalized and managed by the central state. During this period, Albania had one of the most dictatorial communist regimes in the world. The relationships with other countries were very limited and the country was governed under a total isolation (Nase, 2007).

During the communist period, Korça had a large extension of urban areas. The city developed to the vacant zones on the north, west and south. Also, a ring road that divided the city from the agricultural land was constructed at this time. New residential, industrial, commercial, educational and administrative uses were developed in the extended urban areas. The residential areas were developed mostly on the south and west part, while the industries were located on the periphery of the city (LAMP, 2010).

Administrative, cultural, commercial and other public functions were developed mainly along the wide boulevards, in many cases by demolishing the old buildings. Although migration to cities was very limited and controlled by the government the population had a growth, so new residential apartment blocks with 4-5 floors were constructed during this period. These new urban zones were constructed in a pure modernist approach forming very monotonous urban blocks (figure 5). The streets are designed in grid system, wider enough to accommodate the vehicular traffic. Instead of private courtyard house, multifamily apartment buildings with huge open spaces around, are developed in new residential areas. The new urban fabric was very different from the traditional pattern which formed

a dynamic, compact human scale urban environment. The standard and oversimplified architecture of apartment blocks and the large opens spaces around them shaped totally a new urban space.

The period of post-communism

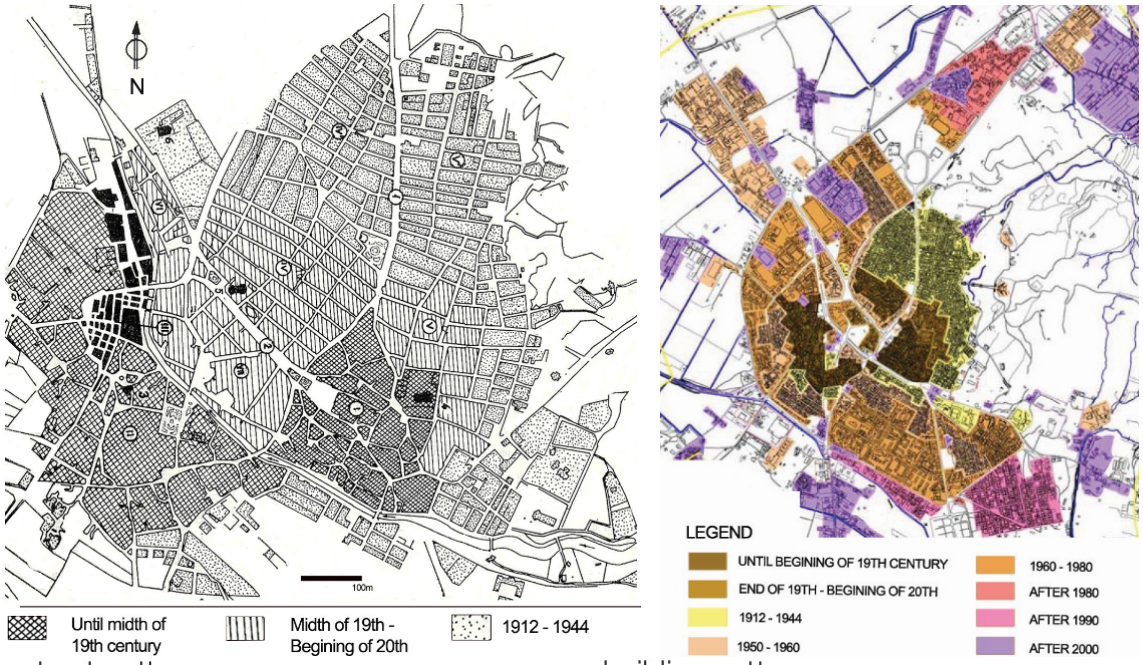
In 1990, the Communist regime was collapsed and a new multiparty democracy was established in Albania. The establishment of the new government system and liberal economy brought a lot of changes in economic, cultural and social life in the country. After this moment, Albania faced a massive migration from rural zones to urban areas. As a result, a fast urbanization process began in almost all cities in Albania but unfortunately it was not developed in a planned way. Generally, three different building types can be seen in this period; high rise apartment blocks (8-9 storeys) inside and in periphery of the cities, 1-3 storey informal houses in suburban areas and formal single houses developed according to a plan. Korca had a similar development although it had a limited urbanization process (LAMP, 2010). The new development occurred mainly in periphery of the city. New residential areas were expanded in former agricultural land or vacant areas. The new zones consist of low rise, single family houses or high-rise apartment buildings. Both of these typologies lack the character of an organized urban space by having problems of infrastructure and open public spaces.

Conclusion

The study of urban form is a complex task that requires a lot of information and a comprehensive approach that considers a lot of components and relationships. Many scholars suggest that the urban morphology should be studied in a historical approach to understand the transformations and factors shaping the urban pattern. Moreover, researches show that the study of cities should not consider just its physical aspect but also should try to integrate the sociological and cultural dimensions that shape it. In this context, this article tries to understand the characteristic of different urban zones in the city of Korca by making morphological analyses of various historical layers. Firstly, it analyzes the pattern of traditional neighborhoods developed during the ottoman period (15th century- beginning of 20th century).

These old neighborhoods have a compact structure organized in an organic layout which form a very rich and dynamic urban environment. Later, the study describes the transformation of urban pattern and the formation of new urban fabric in the first modernization attempts of the city (1912-1944). During this period, we see the development of a regular grid stricture with rectangular residential blocks and the influences of western architecture. Beside this, the communist era which brought drastic changes in cities and their configuration is explored in the case of Korca through morphological analyses. Finally, the paper concludes with some pattern analyses of the post 1990 developments that occurred in the periphery of the city.

Figure 1. Historical urban development in Korca (left until 1944, right until 2010); **2.** (down) Organic urban pattern of early Ottoman period.



street pattern

building pattern

parcel pattern

aerial image

Figure 3. Grid urban pattern, late Ottoman period; **4.** Regular urban pattern, 1912-1944.

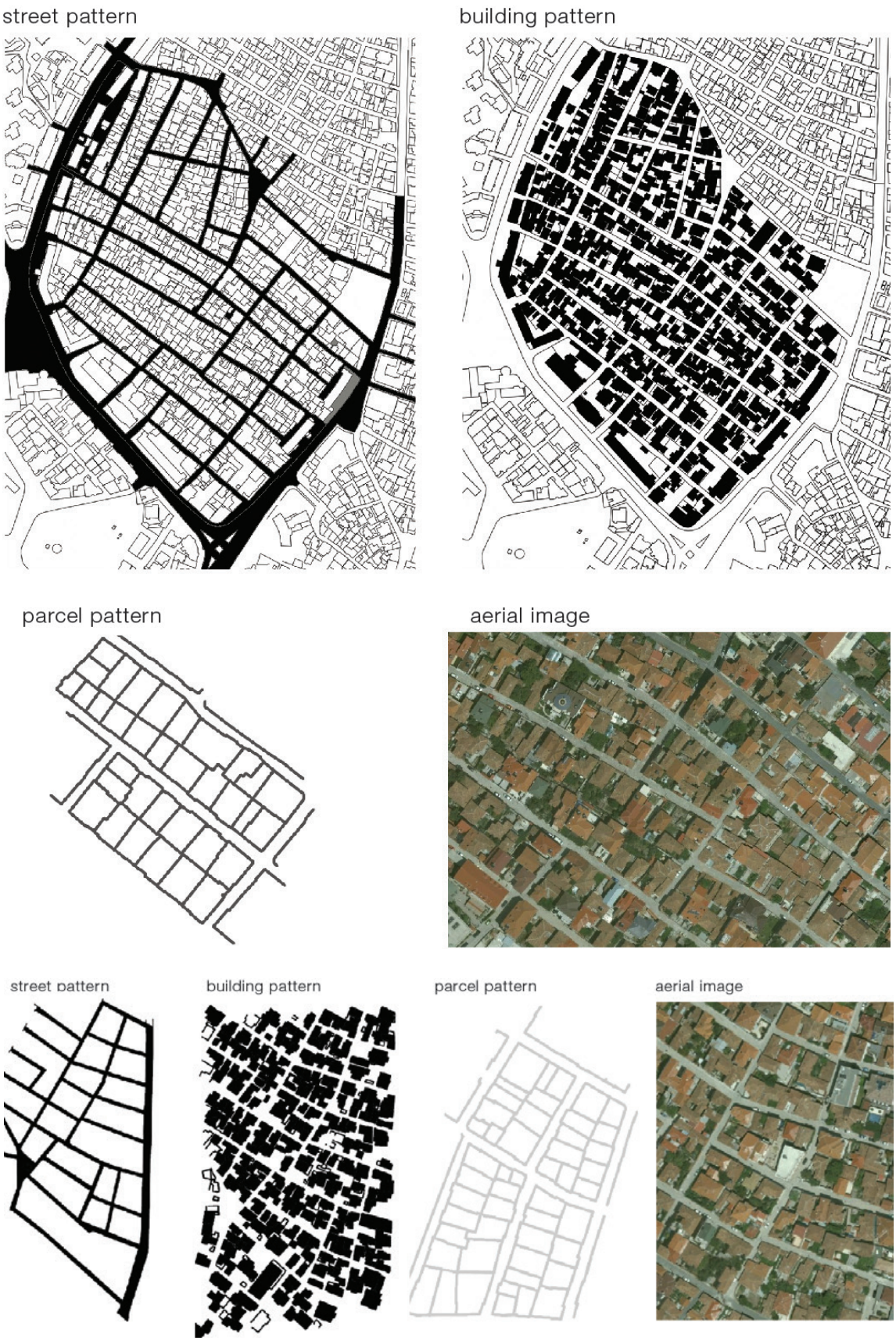


Figure 5. Morphological analyses of residential apartment block during Communim, 1945-1990; **6.** Urban pattern of low rise residential zones in the priphery of Korca, post 1990.

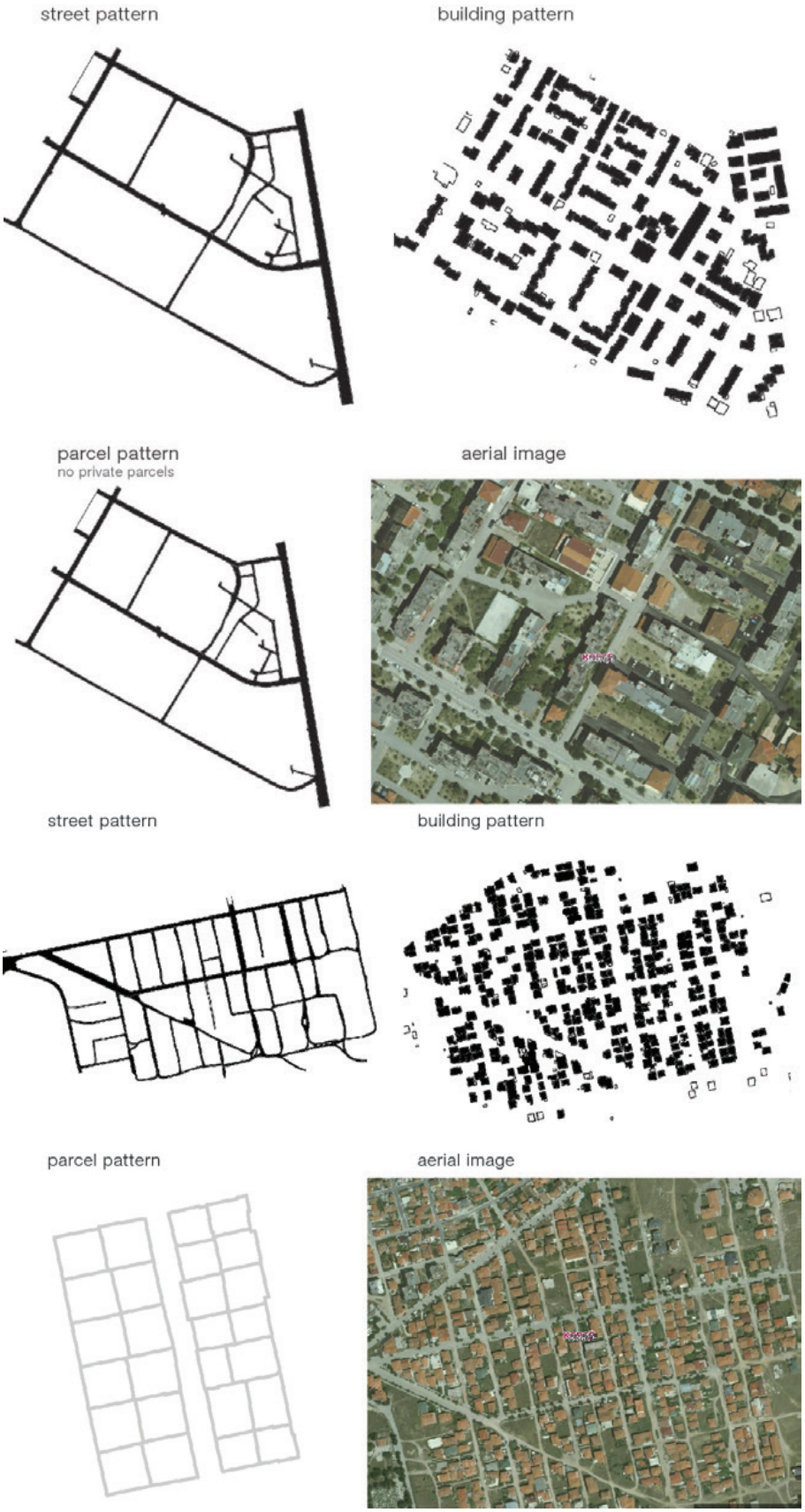
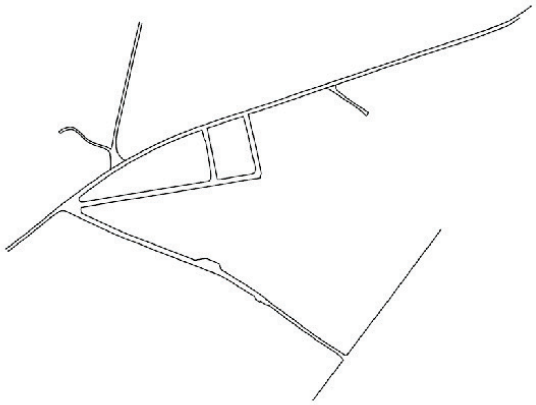


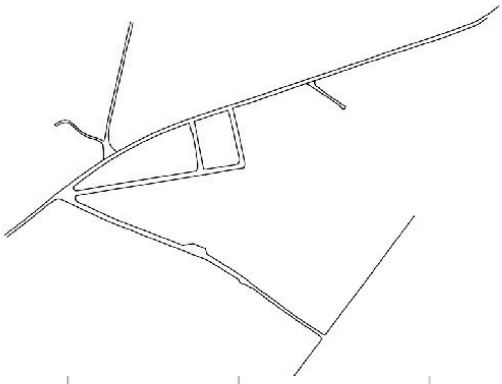
Figure 7a. Urban pattern of high-rise apartmentblock in the priphery of Korca, post 1990; **7b**. (down) Comparison of different urban patterns in Korca.

street pattern



building pattern

parcel pattern
no private parcels



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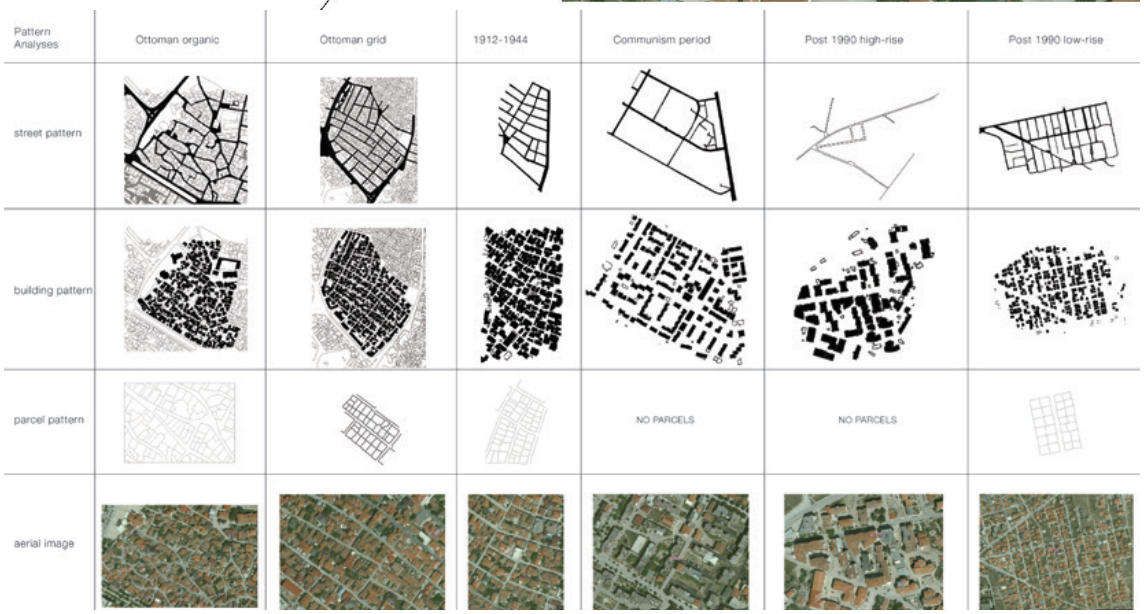

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Reading the Chinese Contemporary City through a morphological approach

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This paper presents the results of a doctoral research that investigates the persistence in contemporary Chinese planning of some connection with Chinese urban planning history and defined a lexicon of urban classic characters that still recur in the modern planning models.

In the field of urban studies, it discusses the problem of theory and history of planning from an alternative perspective of contemporaneity. Specifically focusing on Chinese cities, the paper explores the possibilities and the limits of drawing the Chinese case study through the typo-morphological method, strongly rooted Italian school, envisioning the potential relaunch of an abandoned and criticized approach by applying it to the Chinese contemporary urban case.

Applying the methodological approach borrowed from the Italian school of Astengo, Caniggia, Muratori, and Rossi, this work compares several cases from the early Imperial to the contemporary era studies (e.g. Nanjing, Beijing, Shenzhen, and Pujiang), focusing of the morphology of urban forms and seeking for permanent traces and analogical reiteration of similar structural elements. The aim is to demonstrate that it's possible to successfully apply methods in new ways that can, firstly, reinforce their scientific role and, secondly, reveal alternatives in driving urban research and recognizing cultural diversities. Therefore, this paper outlines that the typo-morphological method, firstly applied to the Italian and European pre-modern and modern cities, has a great potential in the understanding of a wider range of urban contexts that need to be properly investigated.

Introduction

This paper briefly presents and comments the results produced in the framework of the author's doctoral thesis (Bona, 2018) questioning which are the elements defining the structure and aesthetic of the urban plan in the post-Imperial China, from the early republican period to the recent 2010s, and what is historical context behind the cultural issues behind the formal outcomes of selected case studies.

Especially from the Eighties when China's Open Door Policy drove the country to the booming economy, the urban plan – conceived as a structure that defines the spatial layout of architecture – became an unprecedented instrument to shape and control the growing urbanization. Since then, architectural projects deal with areas located on *tabulae rasae* or in places destined to be demolished and reconstructed shortly thereafter. This inhibits the establishment of a true dialogue between elements of urban space and the design disciplines involved in the making of the built environment. So far as the design of the city is independent of the architectural project, *vice versa* the absence of a consolidated context is an alienating condition that weakens the design process. Indeed, the architectural project has become extraneous to the logic of construction of the city and is subjected to quantitative and functional programs; moreover, it has become incapable to interact with the multiple scales of elements composing the city. As a consequence of the lack of consistency between form type and context, architecture is solved in the façade, evading links between plan, elevation and function on which the morphology of the historical city is built.

The codified model of pre-modern cities, built on the principles of the '*magic square*' (Schinz, 1996), seems to recur today as in the past. So far, the apparent denial of historical roots, in favour of global Western models, omits the sporadic presence of elements of the classical tradition in the project of the contemporary Chinese city. These elements remain as regulative principles of urban space and claim a link of continuity between formal applications and symbolic values; however, different logics, leaps of scale and a centralized planning machine in the hands of the state rarely offer opportunities for reflecting and giving a theoretical impulse to address the discipline of urban design. For this reason, those elements of continuity seem more linked to occasionally illuminated operations or spontaneous actions, which find their references in the existent, rather than being the result of a shared and consolidated will.

In this complex framework and still legible despite the scarce historical permanence of the *forma urbis*, we could argue that the urban plan has kept its role dominant role in shaping the built environment at the fast pace of Chinese continuous political and economic changes from the fall of the Empire (1911) until nowadays (Li, 2014). In facts, as long as the cities represent the palimpsest of the common identity of the nation and its straightforwardness, urban plans have been the testing ground for addressing the symbols of politics and the manifestations of economic power by the physical transcription of such instances into formal elements of the space, in accordance with the world of manifestations specific of the Confucian culture of the East-Asian countries (Rowe, 2005; Li, 2015).

Methodology

From a planning perspective that brings together the complex multiplicity of instances from architecture, planning history and human geography, the research presented in this paper proves the existence of invariants in the Chinese city and in its urban facts across the centuries and up recent days. The method applied for this purpose is based on the morphological interpretation of the cities from a historical perspective. Specifically focusing on Chinese cities, this paper explores the possibilities and the limits of drawing the Chinese case study through a typo-morphological approach, envisioning the potential re-launch of an abandoned and criticized methodology by applying it to the Chinese contemporary urban case.

The analysis required the collection of the original documentation (e.g. maps, master plans, descriptions, etc.) of several case studies from their foundation up today. In a second phase, a selected series of case studies were redrawn, at the same scale and by using the

same criteria in terms of contents and graphic. These redrawn maps synthesize the elements of the urban structure and allow to compare the different stage of development of each city in their diachronic evolution, with no exclusion of the unbuilt planning proposals. Indeed, the confrontation picks out similarities and correspondences under various aspects (e.g. structural, dimensional, formal and visual) that do not end in the physical description of urban data but refer to a vocabulary more than ever symbolic and rooted in the Chinese urban culture.

The analysis of the urban development of the case studies and some of their unbuilt planning proposals was conducted by applying the comparative typo-morphological method at two scales. At the urban macro-scale, so to consider each city selected among the case studies as one object with its own logic; so far, the intention is to investigate the plan for understanding the theoretical instances and 'typological figures' composing the main elements of the urban structure, bent in different formal outcomes from case to case. At an intermediate urban scale: in a selected number of cases (e.g. Beijing, Nanjing, Shenzhen) the analysis focused on the core along the axis of symmetry, for describing a specific urban element of analogy from both planning and architectural perspectives.

About the case studies

The case studies selected cover three stages of the Chinese planning history: the Imperial age (-1911), the early post-Imperial age (1912-1977) and the contemporary time (1978-).

The first series collected a certain number of classical cities from the Imperial period, including capital cities and local major cities whose plans can be referred to the cosmological model of Confucian tradition (Tzu, 1964; Confucius, 1979): Wangcheng Tu (scheme), Chang'an, Kaifeng, Beijing, Nanjing, Wuhan, Guangzhou. Each of them was analysed and redrawn referring to their highest point of development in ancient time.

Two of these cities were analysed deeply because of their further development during the early post-Imperial age. Specifically, Nanjing was analysed in seven drawings, mapping the urban development in 1912, 1927, 1941, and 1974, and the three planning proposals of the 'Capital Plan' (1929) by Henry Murphy and the winner by Wong Yook Yee and S. Howard Jee and Nanking Planning Committee. Beijing was redrawn in another series of seven maps, narrating the urban development in 1911, 1940, 1959, 1974, and the unbuilt planning proposals by the Japanese (1937), Liang Si Cheng and the M.G. Barannikov (1953). The modern development of Nanjing and Beijing is a bridging stage of the planning history of China that picks up two occasions of re-founding the national capitals of the newly born first and second Republic.

The last series refer to the contemporary period of the post-Maoist 'New-Era' and Shenzhen was considered as like as a 'modern capital' because of its role in representing the early capitalist mood of open China. About Shenzhen, two maps were drawn as in 1978 and 2010 and an in-depth analysis was done about its Futian CBD project (1996). To conclude, other two minor cities were chosen, Pujiang and Kilamba; these new towns well represents to examples of the fast pace urbanization of the 2000s. In general term, the modern cases demonstrate the tendency to reinvent the classical urban elements in new languages; then, the *forma urbis* of the contemporary case studies significantly show the attempt to translate the local planning culture handed down by the classical models.

Methodological framework and literature

The historicising interpretation of contemporary town planning is a new perspective for the Chinese case. The literature tends to describe it as western-oriented and regardless of its own past and, as a matter of fact, the interest of academia was limited. Most scholars focus on specific issues from a technical perspective oriented to problem-solving (e.g. regeneration, heritage preservation, climatic change, environmental sustainability, etc.) or consider the discourse from a generic historical perspective that doesn't try to argue the connections between current planning culture and its historical background. Besides, media focused on the socio-economic aspects related to the foundation of contemporary urban settlements mostly enlightening the dystopian issues characterizing them (e.g. copy-cut architecture,

ghost cities, speculations, social disparities, etc.).

Applying the methodological approach borrowed from the 'Italian school' is an opportunity for focusing on the morphology of Chinese urban forms and seeking for permanent traces and analogical reiteration of similar structural elements. Indeed, this paper outlines that the typo-morphological method, firstly applied to the Italian and European pre-modern and modern cities, has a great potential in the understanding of a wider range of urban contexts that need to be properly investigated.

Therefore, the aim is to demonstrate the possibility to successfully apply methods in new ways that can, firstly, reinforce their scientific role and, secondly, reveal alternatives in driving urban research and recognizing cultural diversities. If compared with the literature and research produced around the topic of this paper, the typo-morphological perspective has been applied in a limited number of cases to the Chinese context.

On one side, the typological method was first developed by Gianfranco Caniggia, who applied it to Como and several other cases demonstrating the general rules behind the evolution of urban fabrics in the medieval time and determining the evolution process of historical architectural types (Caniggia, 1981). Then, Saverio Muratori applied for studying the evolution of Venice and Rome (Muratori, 1960, 1963), discovering the logic behind the urban development and the typological evolution of their architecture. Later, Aldo Rossi's work on the "analogous city" (Rossi, 1966) was an attempt to move the typological research to the urban scale, considering some urban elements as typological in force of their form, function, and symbolism. This method was mostly abandoned because judged ineffective in the analysis of the contemporary cities because of the loss of relationship between old and new types and forms.

On the other side, in the same decades, the morphological approach developed by Anglo-German school of urban morphology found some applications as an analytic tool for urban heritage regeneration. The geographer Michael R.G. Conzen was the main scholar who foresaw the possibility to analyse the geography of settlements by focusing on the ground plan of a town or a part of it, determining a scalar logic underlying the hierarchical structure of the built environment (Conzen, 1969). His method was applied to Chinese context with a focus on urban scale regeneration (Gu and Whitehand, 2006; Gu, 2010; Whitehand et al., 2011).

Besides, in recent years the attempts to define hybrid typo-morphological method found some application in the study of specific urban phenomena characterizing contemporary urban China (e.g. informal urban villages, hyperdense neighbours, etc.); nevertheless, the focus of these application refers to small-scale parts of the built environment and lack of interest in understanding city plans at large scale and the structural logic underlying them (Gu, 2010; Chen and Thwaites, 2013).

Defining an atlas of persistent formal figures

The morphological reading has proved to be an effective method to face the study of the Chinese city demonstrating its potentiality to investigate both the pre-modern and modern city; foremost, the research brought to the definition of a first *abacus* of 'urban figures' collecting those elements of the Chinese urban form that reveal a conception of space in continuity with the past.

The first element of persistence is the dialogue between built and natural palimpsest. As long as the whole Taoist worlds is based on the balance of a binary system of things defining every dimension of the tangible and intangible world, the presence of orographic and hydrographic elements is constant and contributes to the formation of the human settlement and to the definition of the concept of *genius loci*. As prescribed by the cosmological tradition, the longitudinal axis that ideally supports the city extends beyond the urban compound to intercept the watercourses and the mountains. From the point of view of worship, these natural elements allow to preserve the balance between the dual components of the Tao and, from the practical point of view, maintain the city safe and healthy. So far, the natural elements contribute to the definition of the urban setting and to the construction of a territorial system of cities that respond to the geographical patterns of places and a localization

convenience. Moreover, this leads to the persistence of settlement figures such as the sequence 'water-settlement-mountains' that may change in the figurative result to the extent that they adapt to the most different combinations of contemporary architecture and urban design.

A second recursive element is the axis of urban symmetry. The modern plans of newly founded cities show that the monumental axis is one of the most frequent figures of reinterpretation of the cosmological urban model. As in the pre-modern age, the axis is a planning tool capable to set the urban structure of settlements and put into relation the practical issues of design with the spiritual symbology of religion and the celebratory issues of politics. Indeed, as in the most relevant urban projects from the past to the twentieth century, the axis preserves the formal characteristics of the physical urban layout based on rigour, symmetry, and a ration. At the same time, it embodies the values and uses proper of the institutions in place.

In the past, the triumphal road used to connect the southern gate of the imperial palace to corresponding one of the city walls, with a straight line along which stand a series of temples and altars marking the obligatory stages of solemn processions led by the emperor. Thus, the sacral character of the building paradoxically transforms it into the centre of the city a place inaccessible to the people - but very close to the divine. Likewise, in the contemporary city, that role has been taken over by public squares, cultural centres and CBDs that are, by agglomerations of non-ordinary and recognizable buildings, capable of making explicit the value of the urban space as political and cultural. In the twentieth century, the transfer of the power from the hands of the emperor to the KMT first and the CCP later has accompanied the translation of traditions into the present. In this process, the characters of the axis changed, the functions evolved and the instances of the modern city were added to the traditional celebratory values. In fact, the monumental axis was transformed into in an equipped linear urban space, reminiscent of the market street, characterised by a dense agglomeration of civic venues, government headquarters, and business centres attractive at the urban at mostly national scale. Furthermore, the urban axis seems to be so peculiar and versatile that it's used in the plans of major settlements as like as in the minor ones where the axis may lack any monumental echoes but keeps the connotation of a linear public space around which the primary viability flows and the main functions are attested (e.g. schools, libraries, civic centres, markets, sports facilities, etc.).

The third element of continuity is the structural grid. Produced in accordance with the cosmological precepts, the urban design is based on the symmetry and the succession of fixed elements transposed to all the scales of the constructed space – from the ideal city of Wangcheng Tu to the Forbidden City of Beijing, from the temple enclosure to the court-house. The classical cities examined reveal a monocentric structure which tends to remain introverted within the urban enclosure. The *extra-moenia* space is thus conceived as non-urban, not relevant to the rules, activities and society that inhabit *intra-moenia* (Boyd, 1962); in a certain sense, if heaven is the place of divinity, the city is the kingdom of men in which their capacity to mould the earthly world is maximized and the non-urban territory responds to the cosmic rules of nature (Gavinelli and Gibelli, 1976). Besides the type of city (e.g. capital, city-emporium, etc.), the comparative analysis suggests that the grid does not define only the proportion between the parts but precise dimensional ratios that recur, regulating the amplitude of the ordinary blocks as much as non-ordinary ones. The orientation of the settlements is the similarly North-South; the geometry of the settlements is slightly superimposable so that the rhythm of the grids shows that modules and dimensions repeat in identical or overturned or reduced sequences, however demonstrating their recursion.

The fourth element refers to forms of urban growth; in facts, planning history of China has shown two different attitudes towards expansion. On one hand, the 'urban graft' overwhelms the order of things by destroying the existent built fabrics and super-impress a new settlement; it is a practice that would imply a clear intention of creating a new palimpsest in contrast with the one of the past. On the other, the 'urban doubling' allow to build a new settlement by juxtaposition; it is a consolidated practice that can be observed in the most ancient Chinese cities, as in the nineteenth-century Nanjing and in the early twentieth-century. The will to not cancel the traces of established settlements tells us about a dual purpose: to

build on symbolically uncontaminated foundations and construct in a regime of rapidity and economy of efforts. In pragmatic terms, it may be cheaper to build on mackerel soils than 'demolish and build' where there is already a liveable and at most modifiable city. Nevertheless, the concept of *chāiqiān* (拆迁, trad. 'demolish and build') is at the base of great part of the contemporary urbanization which has been conducted through this kind of operations.

Conclusion

Despite the modern and internationalized appearance, the Chinese urban space refers to rules belonging to the culture of the past. In its intangible substance, it is joined by ties that go beyond the formal and material data of physical space and architecture. So far, the morphological lexicon of the Chinese city thus demonstrates the existence of invariants in the city and in the urban facts that characterize it going beyond the prevailing anti-historical and western-oriented perspective.

The case studies show that in the post-imperial city there is no lack of reference to the classics; indeed, through the re-elaboration of consolidated characteristics of urban design, the cultural tradition is renewed in the urban landscape, despite the languages and the mixture with the global present. In a certain sense, the city continues to be a direct expression of the instances of power and of the established mechanisms of symbolic palimpsests.

Certainly, today's city is different from that idea of 'total handwork' that belongs to the historical past of the Taoist tradition. Relations between the parts are increasingly complex and the relations between urban facts are increasingly weak. The proportions between public places and residential areas are different and tend to favour the latter, grown by transforming cities and suburbs into places that are apparently extroverted, not recognizable and indifferent to the context.

As supposed by the initial research hypothesis, the design of the classical settlements is a reference that recurs in the modern design of the city and its parts, in a continuous play of metaphorical re-elaboration and literal quotation. The ancient symbols that belong to the classical city, gathered around the longitudinal axis and the imperial palace (e.g. temples, macaws, etc.), are reinterpreted according to cutting-edge functional programs that are consistent with the values, references and current aspirations.

Whatever the underlying intention may be (e.g. to express nationalist ideals, a reactionary cultural supremacy or simply to rediscover one's own identity roots in history), modern urban projects have translated the elements of the classical urbis form according to cultural models and political meanings in vogue from time to time. These instances are still traceable in at least four elements found recursively:

- the presence of orographic and hydrographic elements that contribute to the choice of the site and the definition of the urban form;
- the monumental axis that longitudinally structures the urban layout, generating rigidly symmetrical shapes and making tensions appear between natural and artificial elements;
- the urban grid as an instrument for the rational definition of space built according to cellular paradigms;
- the grafting a new piece of the city to the previous one, according to a juxtaposition that redefines the existing urban structure without denying it.

There are, however, also elements of the classical urban form that have been overcome and do not find correspondence in the contemporary city or, if they find it, have been subverted by ways of use that have substantially changed their nature. For instance, the character of introversion that has historically determined the Chinese conception of physical space in the multiple declinations of the enclosure; even though today it is questioned by the mismatch between forms and uses of urban space; moreover, the public space is an element of the urban project introduced relatively recently that has transformed the urban landscape and introduced a new element of complexity in the structure of the Chinese cities. In this sense, the lexicon of the figures of the Chinese city cannot ignore the transformation and importation of new urban elements.

Figure 1. A comparative grid including the maps drawn of the selected case studies. From top left, per row: Wangcheng Tu, Chang'an, Beijing, Nanjing, Wuhan, Canton, Shenzhen, Pujiang e Kilamba. Drawings by the author, same scale

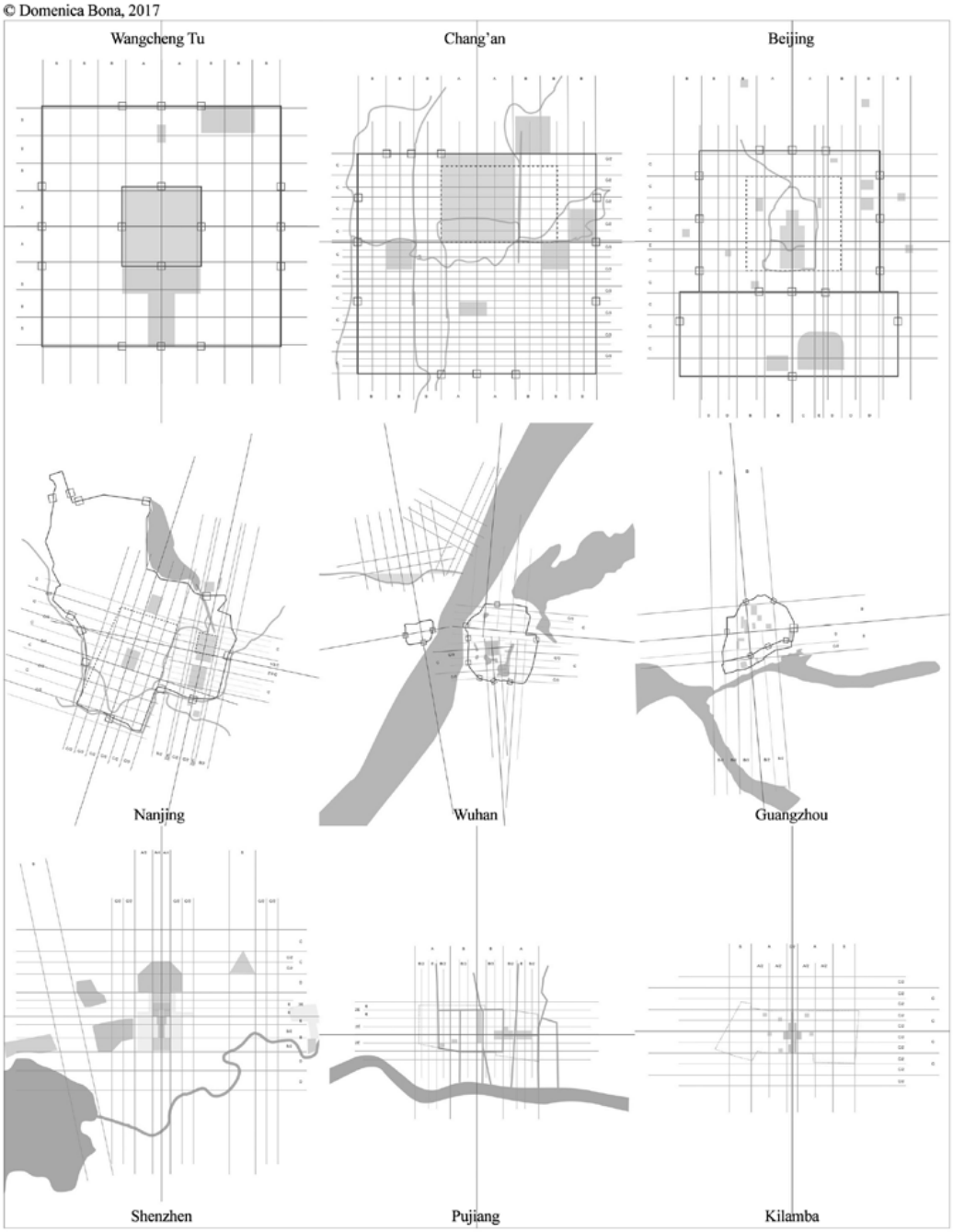


Figure 2. 'Abacus of urban figures', schemes of the four recurrent typological elements of the Chinese urban space. Drawings by the author

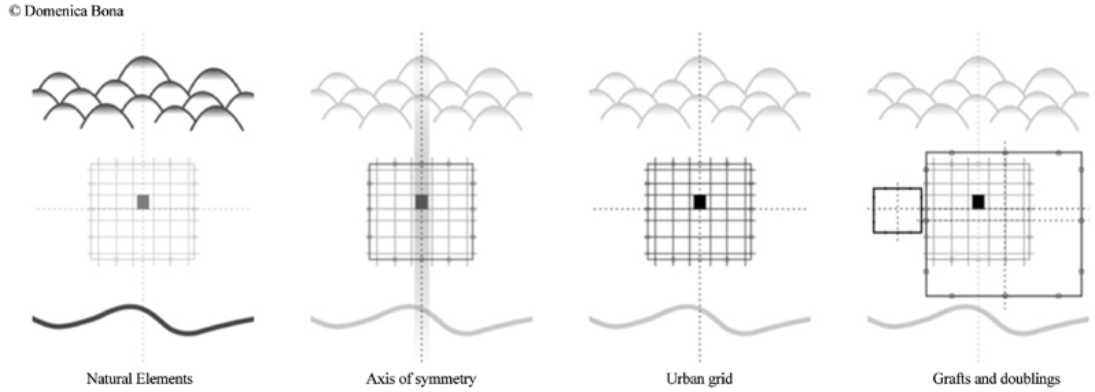
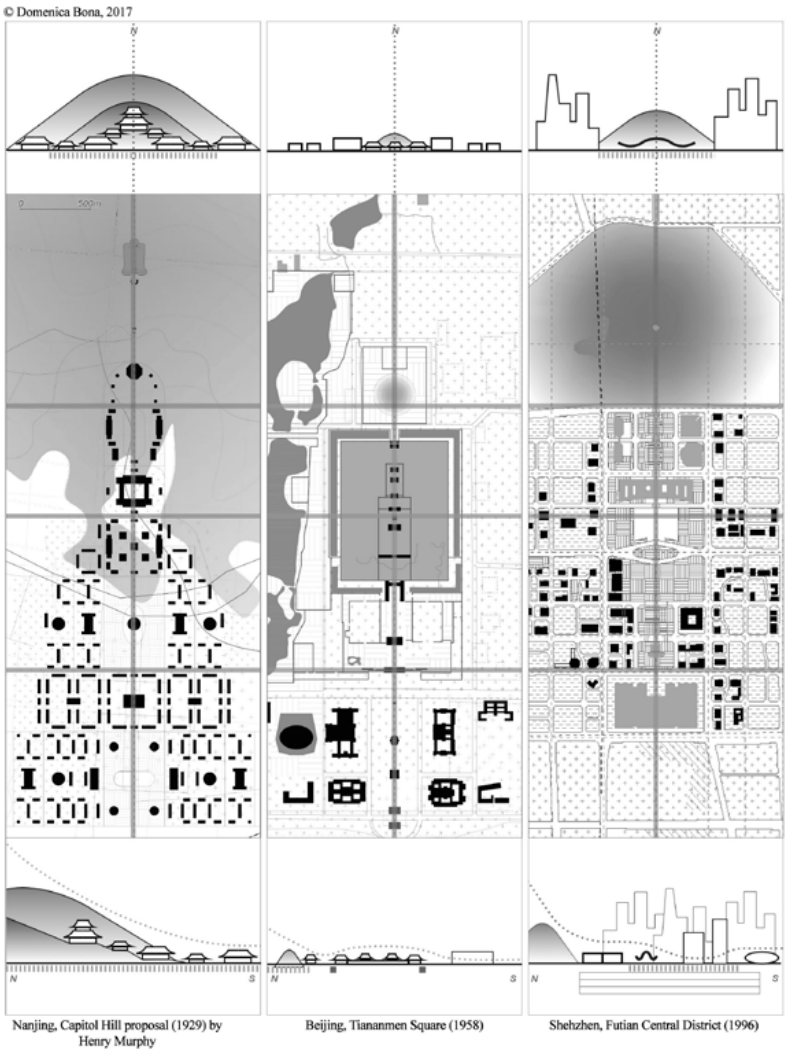


Figure 3. comparative redrawing of the plans and urban sections of three monumental axes from the selected case studies. From the left: Nanjing Capitol Hill by Henry Murphy (1929), Beijing Tiananmen Square (1958) and Shenzhen Futian Central District (1996). Drawings by the author, same scale



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Urban Transformation of Shkodër, Albania: A City On The Banks of Changing Rivers

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Keywords: *Street network, Arterial roads, Balkans, Ottoman, River morphology*

The paper discusses the urban morphology of Shkodër from two perspectives of changes in river morphology and the effect of socio-cultural forces on urban form. The city is uniquely located between three rivers and a lake shore and transformed fundamentally following the Turkish conquest. Given the availability of records, the study considers a historical span going back to the antiquity to examine the diversion of rivers over time, while it focuses on the Ottoman period, 1479-1913, to discuss the finer grain transformation of the urban fabric. On the one hand, the transformation of Shkodër from a medieval to an Ottoman city shares many similarities with other Balkan cities under Turkish rule. The historic core of the city underwent a gradual conversion of the urban fabric so that the Ottoman house type intertwined into the existing medieval street network. On the other hand, in a unique way, the displacement of the surrounding rivers had two important consequences. First, it interrupted and modified the system of existing arterial roads thus affecting the street pattern in the areas already developed. Second, it caused the erosion of large swaths of the historical core and the expansion of the city northward with a pure Ottoman urban fabric of hayat houses surrounded by gardens, large urban blocks, and a dendritic street pattern. Due to the lack of detailed cartographic records for the historic period under investigation, the study infers about the street network and urban fabric based on an extensive analysis of cadastral records, photographs, written memoirs of travelers, and the remaining historical buildings.

Introduction

Rivers were used as the first transportation routes, and urban history is rich with cases of cities that flourished on river banks. The spatial structure of cities is often affected by the morphological features of the rivers passing through them (Abshirini and Koch, 2016). Rivers are usually predictable as they follow the annual weather rhythm, thus settlements that grew along rivers either avoided flood areas or adopted drainage and dyke systems to cope with the floods. A sudden diversion of the entire river course is extraordinarily rare, and even rarer is the case of Shkodër, Albania, a city that was fundamentally shaped by the diversion of rivers through history. Three additional reasons distinguish the city as a formidable case for studying the relationship between riverine and urban morphologies in the Balkans. First, the city grew in a confined geographical space bound by three rivers and a lake. Second, geopolitical forces over the centuries shaped its locale as a cultural frontier at the edge of empires. Third, while most cities in the Balkans developed by Ottomanizing existing Byzantine cities, the new part of Shkodër expanded disjoint from the medieval core in agricultural land, thus making it a perfect example of a Turko-Balkan city to grow from scratch during the 18th and 19th centuries, in addition to the well-known case of Sarajevo (Pinon, 2008). This study discusses the transformation of urban form of Shkodër according to two principal elements of urban form: intercity roads, which attracted urban growth due to preferential attachment, and urban tissue, studied in evolution as affected by physiography and social forces over time.

Shkodër in northwestern Albania (Scodra, Scutari, Skadar, Iskodra, Iskenderiyye, Üsküdar) is located on the shores of Lake Shkodër about 23 km in aerial distance from the Adriatic coast. Despite being located inland, the city has the characteristics of the littoral as it was historically linked to the Adriatic by two river ports. In the context of the Mediterranean world, Albania is located at the divide between East and West. While the country was part of the Ottoman Empire for almost five centuries, the origins of such divide are to be traced much earlier to the drawing of the Theodosius Line, the partition between eastern and western parts of the Roman Empire in 395 AD, which met the Adriatic not far from Shkodër (figure 1). This geopolitical fault line and cultural frontier, which Braudel argues is "the most extraordinary division in the Mediterranean" (Braudel, 1972), has affected a frontier character for the city.

A Changing Hydrology Over Time

There are not many cities with the peculiar location of Shkodër confined among three rivers and a lake. Lake Shkodër, and rivers Bunë, Kir, Drinasë and Drin are brought together around the city by a unique undulation of landforms. The city is positioned at the only two narrow crossings through the mountain range (figure 2), controlling key routes between Northern Albania, Kosovo and Montenegro. Shkodër has grown from the original settlement in and around Rozafa fortress by expanding northeast in the wedge-shaped upper plain. The urban growth has been intrinsically linked to the changing location of rivers over time.

Bunë (Barbana, Bojana) is a river that originates from Lake Shkodër at the city's waterfront and drains into the Adriatic. It has undergone minor changes over time and is navigable for most of its length.

Drinasë (Drinassa) is a short fluvial segment which runs east-west near the fortress. At the present, it receives Kir to the right and Drin to the left before joining Bunë. Notwithstanding the dry bed shown in the 17th century maps (figure 3), the linguistic link between the toponyms "*Drin*" and "*Drinasë*" supports the thesis that in ancient times Drin used to pass through Drinasë to join Bunë at today's confluence point (figure 4). In addition, historical texts describe a major Roman bridge on Drinasë (Šufflay, 1924), while archaeological surveys indicate an ancient barrier wall that protected the main fortification wall from river currents (Hoxha, 2003).

Kir (Clausula, Clia, Chiri) is a mountainous river that flanks the city to the east before discharging into Drinasë. It has changed its course many times through the flat upper

plain where the present-day city is located (figure 4, figure 5). During antiquity, Kir flowed westward into the lake and in medieval times it was split, discharging both into the lake and into Drinasë. A distributary of Kir passed through the northeast axis of the present-day city, which is described in the Venetian Cadaster of 1416 as Bucem Canal and bordered the area of Kir Islands (Zamputi, 1977). Another distributary of Kir passed through the eastern sector of the upper plain crossing the main road to Drisht (Drivasto) and discharged into Drinasë. The eastern distributary became the main branch in 1760 (Dhora, 2005), while the western branch through Kiras neighborhood was strong enough to operate mills until 19th century (Armao, 1933). By the beginning of the 20th century, the shifting course of Kir in the upper plain left behind several canals, which were still visible in the 1923 and 1938 maps, but were covered later as part of the urban drainage system.

Drin (Oriundus, Drino) is the longest Balkan river to drain into the Adriatic Sea, and with regards to discharge, it ranks second in the Adriatic and in the top-ten in the Mediterranean (Ludwig et al., 2009; Wolf et al. 1999). A combination of concentrated rainfalls and a large basin area brings frequent floods of the lower plain (Skoulikidis et al., 2009; Ziu, 2002). In antiquity Drin discharged into Drinasë as in the present, given the dry river bed shown in the 17th century maps, while, according to Armao (1933), it discharged into Bunë close to Shirgj (San Sergio). Sometime during the Middle Ages, Drin turned south to reach the sea near Lezhë (Alessio) (figure 4). This course is narrated by Barleti in 1504 (Lacaj, 1982) and by Evliya Çelebi in 1662 (Dankoff and Elsie, 2000), and is recorded in all cartographic sources between 15th and 19th centuries (Bertelli, 1574; Coronelli, 1692). A northwest distributary of Drin reappeared in 1846 (Bushati, 1998) by breaching through irrigation canals and using the ancient dry riverbed to join Drinasë near the city (figure 4, figure 5). Since the extraordinary floods in 1858-1859, most water flowed through the northern distributary, profoundly altering the urban morphology of Shkodër.

Shkodër Before the Turkish Conquest

The location of Shkodër is predestined for a settlement (Šufflay, 1924). The city originated during the proto-urban Illyrian period in the 4th century BC on Rozafa hilltop (Korkuti and Petruso, 1993) and it continuously maintained the position of a key urban center in the region ever since. Based on the interpretation of ancient texts and archaeological findings, Kamsi (1976) concludes that the ancient city had two main parts: inside the citadel on the hilltop, a lower area located on the river terrace south of the citadel, and in the triangular plain at the confluence of Bunë and Drinasë (figure 5). The city continued to maintain its important role after falling to Rome in 168 BC as the center of the Roman province of Praevalitana (Hoxha, 2003). The road from Dyrrhachium to Narona and Salona, one of the major Roman roads in the Balkans, passed through Shkodër; another Roman road started just south of the city and led towards Ulpiana and Naissus in Balkan hinterland (ORBIS, 2017); and a third road along the left bank of Bunë connected the city to Ulqin (Dulcigno, Ulcinj) on the coast (Hoxha, 2003). The ruins of the Roman bridge on Drinasë, which were present as late as 1416 (Zamputi, 1977), indicate that the Roman road passed near the location of the present-day main road in the lower city. By the end of 4th century the lower city was fortified by walls that enclosed a smaller area than the earlier period (Hoxha, 2003); during the time of the restoration by Justinian I in the 6th century AD the lower city expanded eastwards along the right bank of Drinasë with densely packed housing quarters; and it was continuously occupied until the 12th century AD (Korkuti and Petruso, 1993; Zamputi, 1977).

By the late medieval era, the city had expanded into three suburbs outside the lower fortifications. They were located near the two bridge crossings: Sub-Scutari on the left bank of Bunë south of the medieval market (Kamsi, 1976; Šufflay, 1916), Kazenë (Casena) across Bunë, and the area south of Drinasë at the present-day Bahçallëk quarter. By the end of the 14th century, the city had shifted away from its original location near the confluence of Bunë and Drinasë further east and to a higher position in the foothills below the fortress (Kamsi, 1976) (figure 5). After Venice acquired the city in 1396, it was fortified as part of "limes", a string of outposts built along Balkan coast to withstand the Turkish

advance (Braudel, 1972).

As a port city, Shkodër lay where the network of land roads from Balkan hinterland met the network of waterways that linked the city to others ports in the Adriatic and beyond. Like most Mediterranean cities, the city belongs to the network system (Hohenberg and Lees, 1995) while the broken physiography of the region has given the city a context where the central place theory (Christaller, 1933) does not apply. The roads connecting the city to neighboring settlements provided the scaffold for the city's expansion through time. The roads are likely to have maintained their original location in areas that were not affected by the diversion of rivers over time. While lacking a cartographic representation, the Venetian cadastral registry of 1416 gives some account of the main roads in the city through the description of boundaries of lots and arable land. Drinasë Road (*Via del Drinase)* was located south of the citadel along the right bank of Drinasë and extended towards Ajasëm quarter. This road no longer exists due to erosion and silt deposits that pursued the diversion of Drin in 1858 (Šufflay, 1924).

The 1416 Venetian registry unambiguously describes only two roads in the upper plain (Zamputi, 1977). The first road, Slavic Road (Via Schiavanescha), connected the city with the region around Montenegro and appears to coincide with the ancient Roman road towards Doclea and Salona. Slavic Road started near the center of the Bazaar and continued northwest to cross a distributary of Kir near the lakeshore, where the stone bridge apex is still visible today. This stretch of the road was later disrupted by the deviation of Kir and the rising level of the lake (Dhora, 2005). An alternative detour from the Bazaar towards Montenegro emerged by negotiating the changing course of Kir, either along the Ndocej-Kiras artery or further east toward Rus quarter.

The second road, Tatar Road (Via Tartaresca), describes the medieval road from Shkodër to Drisht (Drivasto) and further towards Balkan hinterland, which most likely survives today as Skanderbeg Road. The extended direction of Skanderbeg Road provides the shortest path to Drisht, assuming a position of Kir further to the west and discharging into the lake. Thus the most plausible interpretation of the 1416 cadastral records is that Kir discharged into the lake along Kiras quarter; Tatar Road ran along the left bank of Kir; Kir Islands were located between the two main western branches of Kir, one running along Kir-Ndocej Road and one running behind Prefecture Building, and under Dervish Beg Bridge; while Swine Bridge enabled the crossing of Tatar Road either over a branch of Kir or possibly Bucem Canal. The The Venetian cadaster does not specify additional roads in the upper plain, which suggests that the other arteries emerged later due to changes brought by the diversion of Kir. The upper plain is perfectly flat, hence the deviation of the main arteries from near-straight lines were caused by waterways obstacles.

Sometime after 1416, Kir changed course due south and started to discharge into Drinasë thus interrupting Tatar Road near the present-day location of Catholic Cemetery. Dukagjin Road has a gentle crescent course that suggests it likely emerged as an alternative route to Drisht along the right bank of Kir after the original upper segment of Tatar Road was eroded by Kir. Similarly, Ndocej-Kiras Road includes several directional changes and is composed of shorter segments, which suggests it emerged as an alternative to the Slavic Road after the dislocation of the western branch of Kir.

Less than a century of Venetian reign in Shkodër contributed new buildings and fortifications without affecting the street network, which resulted unaltered from medieval times, unlike several Balkan coastal towns like Lefkada, Corfu, Dubrovnik, and Korčula, where an earlier and longer Venetian influence left a legacy of fishbone street patterns with elongated blocks (Shpuza, 2007; Shpuza, 2014). Due to the lack of records and extensive archaeological studies, we can only speculate that the urban fabric of Shkodër (Caniggia and Maffei, 1979; Muratori, 1959; Moudon, 1994) during the Venetian era consisted of fortified two-three story houses embedded in a medieval altstadt street pattern with deformed grids and irregular blocks (Marshall, 2005), similar to the neighboring towns of Ulqin and Tivar (Stari Bar, Antivari), which are well preserved and recorded (Mijović and Kovačević, 1975; Gelichi, 2005). The interventions in the building stock within Ulqin fortress during Venetian and Ottoman periods occurred without changes in urban blocks (Bošković et al., 1981), and is likely the evolution of urban fabric in Shkodër underwent

similar processes maintaining the medieval street network unchanged.

Shkodër During Ottoman Period, 1479 – 1913

During the first two centuries of Ottoman rule, Shkodër reemerged with a combination of almost all urban typological profiles: bureaucratic, military, commercial, industrial, and agricultural (Braudel, 1972). The city became a hub for trade between Anatolia, Ragusa and Venice since the land route through the Balkans was preferred to the Mediterranean sea route (Pedani, 2008). From a cultural viewpoint, the city restarted with a tabula rasa following the complete immigration of urban population to Venice, the establishment of Turkish military and administration personnel (Kiel, 1990), and the subsequent slow migration of people from the countryside. However, from a physical viewpoint, the city was built upon the urban fabric and street network inherited from the Venetian era. Evliya Çelebi describes Shkodër in 1662 as a town of 15 quarters located around the castle and a bazaar (Dankoff and Elsie, 2000), whose location near the river port classifies it as an exobazaar (Busch-Zantner, 1932). The quarter within the fortress gradually degraded, while the old quarters around the fortress emerged as the new urban core during 17th and 18th centuries (figure 5). Székely's photograph of Tabak quarter after the diversion of Drin in 1863 (Elsie, 2017) shows the remnant of the densely clustered houses with shared party walls and joined roof planes (figure 6). The houses were surrounded by courtyard walls that enclosed small yards. The old quarters around the fortress appear a palimpsest of Ottoman houses implanted on a street pattern and land subdivision that was inherited unchanged from the mediaeval times (figure 7).

During its economic climax in the 18th century, more than a century before the diversion of Drin, the city started to expand in the upper plain at the junctions of main arteries and around water mills (figure 5) to accommodate population growth and appetite for large gardens. The presence of waterways made the upper plain a first choice for development compared to the lower plain south of Drinase, despite the latter being located closer to the old city. During the first two centuries of Ottoman control the city was populated mainly by Muslim inhabitants, hence the construction dates of the first four mosques in the upper plain suggest the sequence of the birth of new urban nuclei during the 17th and 18th centuries (Bushati, 1998). While the old quarters around the fortress evolved into an "Ottomanized" city upon the medieval topology of street network, the new quarters of Shkodër developed as an Ottoman city *par excellence* by weaving an Ottoman urban fabric and house type onto the set of arterial roads already present in the upper plain.

The medieval arterial roads reflect pragmatic concerns of linking the old city with the neighboring towns while negotiating the ever-changing location of branches of Kir and drainage canals. Similar to other Ottoman cities, which had a few arterial roads (Pinon, 2008), Shkodër was organized along four arteries, which fan from the Bazaar with rather linear trajectories (Skanderbeg, Dukagjin, Hadrej and Ndocej-Kiras Roads) as shown in one of the earliest detailed maps by Jesuit Fathers (Rossi and Boroli, 1923) and also partially included in the 1918 aerial photograph (figure 8). In contrast, the infill streets that emerged during the 18th and the 19th centuries reflect a social logic of the subdivision of parcels over generations, and the preference for privacy and segregation. The streets represent all three types of "direct short", "longer" and "peripheral dead-end quarter" cul-de-sacs (Pinon, 2008), and result in an overall distributary street pattern (Marshall, 2005), highly centralized arterials, and lack of direct connections between quarters. The streets lacked trees, were delineated by drainage canals, and were framed by stonewalls with hardly any windows (Vannutelli, 1892). However, unlike typical cities in the Islamic world, the streets were relatively wide (Dumont, 1873) bearing witness to the original arterial roads.

The development of the new city occurred alongside the final crystallization of traditional house type of Shkodër (Çuni, 1994; Riza, 1972), which coincides with the maturing of Ottoman *sofa* house type in the Balkans and Northwest Anatolia during the 19th century (Pinon, 2008). The house is usually of two-stories, and is organized around *çardak*, the large open air veranda adopted from the *hayat* of the Ottoman house

(Petruccioli, 2007). The house is surrounded by private gardens enclosed within high walls similar to houses across the Mediterranean (Elisséeff, 1980). However, in contrast to its strong boundary to the outside, the house has an open spatial organization of the interior, which reflects the social traits of the mercantile and manufacturing class (Shpuza, 1995).

The new city developed with a sparser urban tissue of large individual gardens compared to old quarters, similar to transformative processes of the Ottoman house between the 16th and the 19th century (Pinon, 2008). The lower density of the new quarters was most notable in the areas distant from the main arteries, and in Muslim sector of the city. Such scalar difference is attributed both to the higher economic status of Muslims and their involvement with small-scale agricultural production in the gardens (Shkodra, 1984). As is common in large Muslim cities (Raymond, 2008), the city acquired a concentric stratification as per the economic status of the households. However, the center consisted of a strip along the north-south axis between two main arterial roads including the houses of the elite and the larger households (Gruber, 2006). Smaller houses were located in the periphery and in Catholic quarters in the east and north-east. The scalar difference in urban tissue appear to follow economic lines more than religious ones since the Catholic and Muslim quarters have the same building and urban morphology (Degrand, 1901).

The courtyards in the new city were enclosed by 3-5 m high stonewalls, especially in Muslim quarters, and only the rooftops of the secluded houses were visible atop the canopy of fruit trees (Wingfield, 1859). The courtyards were accessed through large fortified wooden gates, which size indicated the socio-economic status of the household. The courtyards were the center of the family life (Ziu, 2002), and with their flower beds and orchards stood in contrast to the austere streets. The house was surrounded in 3 or 4 sides with expansive gardens framed by high walls. The only exception to this is Hadrej Street (figure 7), where houses are joined in rows sharing party walls, which indicates it was one of the earliest developed areas in the upper plain.

The diversion of Drin in 1858 led to the abrupt erosion of the entire stretch of Tabak quarter along the bank of Drinasë. In addition, the backflowing of waters from Bunë towards the lake brought frequent flooding of the Bazaar and unhealthy stagnant marshes. In the span of a few years afterwards, the decline of trade and industries was furthered by the opening of Niš Railroad and Suez Canal, and the gunpowder storage explosion in the castle that damaged most of the old city and accelerated further the migration of houses and shops towards the upper plain.

A new urban center emerged in the upper city along Great Way (figure 6d), which is a boulevard with paved sidewalks that was opened following urban modernization models applied across the Ottoman empire after Tanzimat reforms (Çelik, 1986). The northern part of Great Way, between the crossings with two existing arteries, attracted the formation of a market street (figure 7f) whose architecture style recalls contemporary examples in Italy and Austria, while the middle part attracted the construction of an office complex for the administration (figure 8), which moved from the fortress (Tuzi et al., 2014). The southern part of the new boulevard, between the upper city and the Bazaar, was opened through the core of urban blocks without widening or straightening any of adjacent historical arterials, which run almost parallel to it (figure 8). During the last years of Turkish rule, the added building stock due to population growth accelerated the expansion of the city northward and the increased density of the urban fabric. The 18th century urban tissue, which consisted of very large blocks and large plots of gardens, started to give way to a finer grain of smaller plots, however, without modifying the street network, which remained unchanged until the application of Soviet style planning interventions after WW2.

Figure 1 Shkodër in relation to central Mediterranean, Theodosius Line, and historical empire capitals; **2.** View of Shkodër looking north from Mount Tarabosh (New York Times, 1916). (lower right) Rozafa castle and the historical core of the city at the confluence of Bunë and Drinasë; (upper right) Kir flowing from the mountains into Drinasë; (center), the western branch of Kir at this time downgraded to canal discharging into the lake (Museo Centrale del Risorgimento, Roma, www.14-18.it)**.**

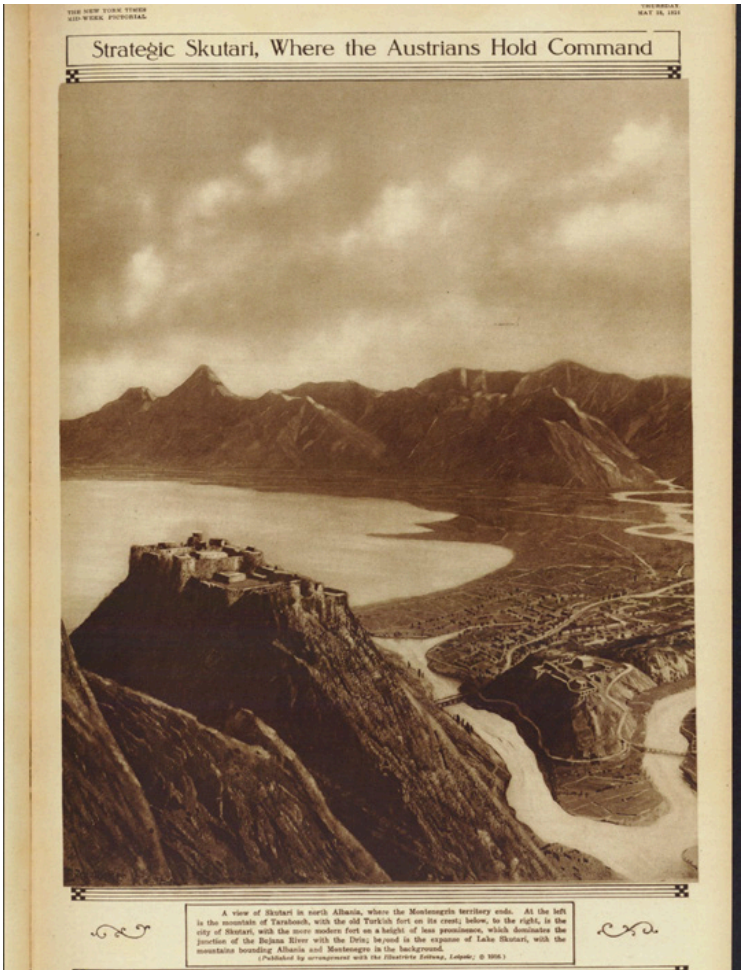

Figure 3. (left) Venetian map (Coronelli, 1688) showing the southward course of Drin towards Adriatic Sea and the dry river bed noted as "Ancient Channel of River Drivasto"; (right) Hydrology and urban area in the Austro-Hungarian map of 1904 (Noltz, Walter and Vogel, 1904)**; 4.** Changing courses of rivers Drin and Kir in the alluvial plains around Shkodër over time; **5**. Transformation and growth of Shkodër following the diversion of rivers Kir and Drin from antiquity to 1913. Bodies of water are shown in turquoise; marshes, flood plains and gravel beds in light turquoise; main roads in bold; streets in thin line; and urban area in orange.

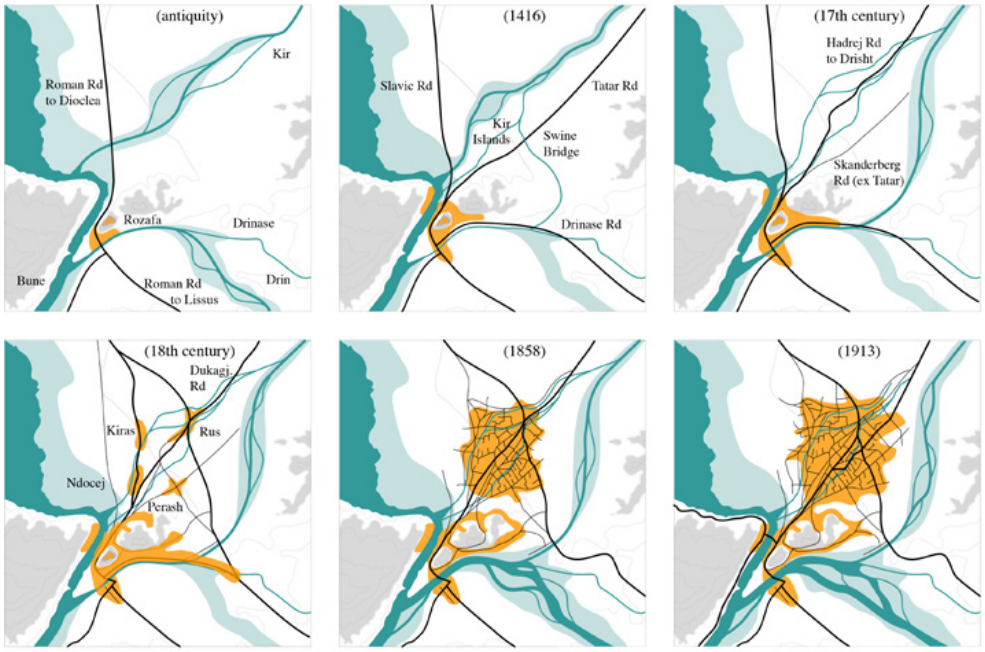

Figure 6. Nineteenth century photos of Shkodër: (a) View of Tabak quarter with the densely clustered houses in the foreground and the expanse of eroded fields in the background (Székely); (b) Bazaar main street with the castle in the background; (c) Bazaar and river harbor viewed from the castle; (d) The Great Way in the new town looking southwest towards the lake (Marubi); **7.** Examples of urban fabric of Shkodër drawn from the 1938 map (D'Ascensi and Miserocchi, 1938) shown in 300x300m views: (a) Street network in a 4x4 km view indicating the location of detailed areas; (b) Old quarters showing a fabric of Ottoman houses implanted on the medieval street pattern at this point rarified after the 1858 erosion; (c) Bazaar; (d) Hadrej Street as one of earliest developments in the upper plain with traditional houses arranged in a row formation; (e) Dendritic street pattern of traditional houses with large gardens off Skanderbeg Road representing the most common fabric in the new city; (f) "New Shops" segment of Great Way with Catholic quarters in the lower right.

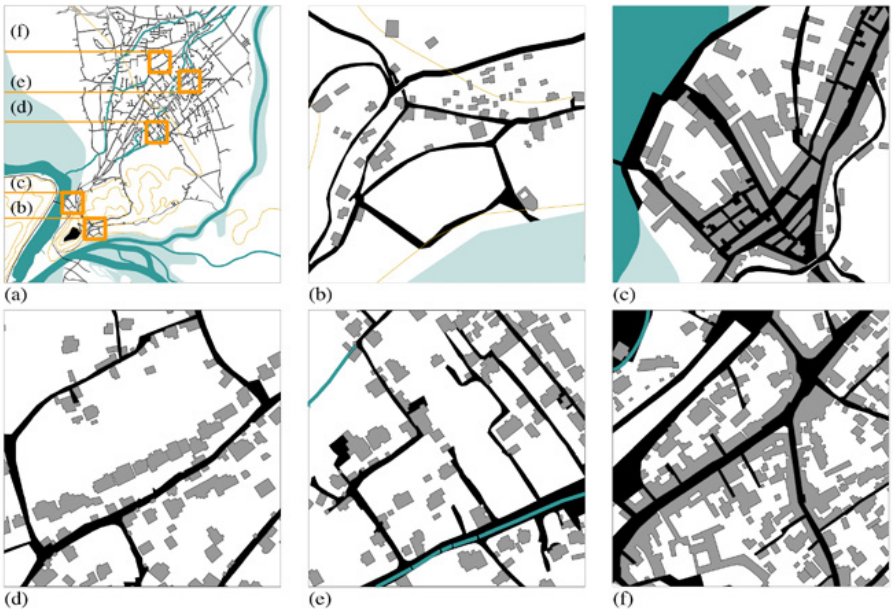

Figure 8. Aerial photograph Shkodër in 1918 showing the four historical arterial roads radiating northward, and Great Way, the new boulevard opened during the second half of the 19th century between the Bazaar and the new administrative complex on top (Royal Italian Navy, 1918).

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Notes

1. "Ura e Thive" (Swine Bridge) is a neighborhood in the east, while no canal exists there as early as the 1904 map (Noltz, Walter and Vogel).
2. The toponym Kiras is linguistically related to Kir.
3. The name refers to Slavic lands, i.e. present-day Montenegro.
4. The toponym refers to Tatars, the couriers used in the Balkans during the Ottoman era (Zamputi, 1977).
5. Streets are referred to with the names used in the 1923 map (Rossi and Boroli).
6. Dumont (1873) narrates that the previous Turkish pasha had started a "European" street including 2 km of paved sidewalks.

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Sustainable design of urban heritage undertaking change: case study of the revitalization of Darb Allabana area in historic Cairo

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Keywords: *Change, Urban heritage, Darb-Allabana, Urban laboratory, Platforms of coalescence*

Cairo is a city of dense historical chronicles, enduring continuous changes. Currently its historical centre is transforming into an urban-lab searching new interpretations for urban heritage expressing contemporaneity within its authenticity. Through a dense literature review the paper discusses the transformation of open spaces in cultural heritage settings experiencing changes, addressing the complexity of applying sustainable development within historic Cairo.

Consequently, the paper validates the comprehensive theoretical study, with a practical proposal (entitled Platforms of Coalescence) developed by the author for the revitalisation of Darb Allabana urban voids. The project won a certificate of honour in a competition sponsored by the academy of scientific research and technology and launched by Lala studio. Darb Allabana is an area located in old Cairo, currently witnessing urban changes due to the latest archaeological explorations of chronological richness. This condition provides additional values for the existing urban voids, underlining opportunities of urban regeneration.

The paper tackles the practiced methodologies and sustainable design strategies transforming the areas urban voids from fragmentation to consolidation based on inducing social and cultural activities. The study adopted a series of site visits during different time intervals, exploring the areas urban richness and potentials of change. Site visits were followed by interviews with the local community and workshops integrating multidisciplinary professional experiences. The paper concludes by designing a framework guiding the sustainable revitalisation of urban heritage undertaking change. It tackles important moments of uncertainties faced by our contemporary cities which lacks both theoretical documentation as well as practical experimentations.

Introduction

Cities are considered living laboratories experiencing the way we negotiate and manage our landscape. However, cultural assets empower the values and meanings in our living environment (UNESCO, 2016), but their survival relies on the compatibility with their contextual setting. Urban heritage in this sense is considered the shield holding and protecting tangible and intangible assets specially during the current conditions of uncertainties (Ripp and Rodwell, 2015). Cairo is a city of dense historical chronicles of architectural, cultural and urban values (Abdel-Rahman, 2016). This legacy is enduring continuous changes concerning its social and urban fabrics where the role of urban heritage is still vague. Departing from this argument the paper is documenting a critical moment in managing urban heritage in Cairo. Particular attention is given to Darb Allabana historic neighborhood in the Islamic center. Starting from a dense literature review the paper investigates the meaning of urban change within historic settings. Consequently it detects the main principles guiding sustainable design of urban heritage undertaking change, after providing a back ground introducing the challenges facing urban heritage conservation in old Cairo. The research passed from theory to practical experimentation through presenting the revitalization proposal for DarbAllabana urban voids. This experience tacked the concept of urban laboratories and their effective role in transforming cultural heritage landscape. The living lab is DarbAllabana historical setting where cultural entrepreneurs are leading the preservation as well as the transformation actions of public spaces. The paper detects the features of change experienced by the neighborhood, thus presenting the adopted strategies and approaches proposed to design that change. Finally the research structures an assessment model for the practical experimentation, which would participate in developing new tools and skills for designing urban heritage undertaking change, valorizing its continuous learning process.

1. Research methods

The research methods departed from a dense literature review concerning the importance of urban heritage regeneration in old Cairo and how it could be managed to cope the challenging conditions related to political, social or urban uncertainties. The study synthesized the theoretical approach by proposing a guiding model for sustainable design of urban heritage undertaking change that is based on previous scientific work of prestigious international journals. The revitalization proposal of Darb Allabana's urban voids presents the experimental practical phase of the study. This historical neighborhood is facing a condition of social and urban changes, which promotes it to be a fertile context for examining sustainable design methods. Experimentation strategies were based on sub-structured interviews with the local community, workshops, site visits, and several meetings with multidisciplinary actors in historical Cairo. The design product is finally evaluated through an assessment model based on the conducted sustainable design principles, in order to provide an estimated measure for its performance and how it is participating in upgrading the surrounding historical setting.

2. Urban heritage and change

''The city is the locus of collective memories'' as referred by Aldo Rossi, 1996, that can only be perceived through its contextual setting (Abdel-Rahman, 2016). Urban heritage conservation is a process of continuous evolution prone to experimentations in order to reach consensus on how it could be managed, were creativity and innovation is questioned (Bandarin and van Oers, 2012). Urban heritage management is undertaking change in theory and practice, departing only from a focus on isolated monuments towards a cultural landscape vision (Veldpaus, Pereira Roders and Colenbrander, 2013). Urban heritage shall be perceives as a process rather than objects (Zeayter and Mansour, 2017), in order to reinforce a knowledge based city created through the representation of place (Graham, 2002). Process occurs through sequential phases enabling flexibility instead of rigidity. Based

on this claim cultural landscapes are complex, dynamic and multifunctional assets, in need of continuous inventories detecting the features of change in order to acquire reliable data for efficient decision making concerning each mutational phase (Antrop, 2004). Flexibility, adaptability and capacity to transform are the main pillars of a resilient urban heritage design strategy (Maccreanor, 1998). It opens up opportunities for novelty and innovation responding to social and physical demands and external drivers of change (Folke et al., 2010).

3. Urban heritage conservation in Old Cairo

Cairo is a city that witnessed severe changes along its history, starting from its location that occupied different geographical positions respecting the fluctuated Nile channel. Al Fustat, Al Askar, Al Qahira and finally khedive Cairo of the 19th century are all titles for the historical capital. But usually the term old Cairo describes Al Qahira that was built by the Fatimids in 1000 AD. It inhabits a distinguished collection of Fatimid, Ayyubid, Mamluk, Ottoman monuments besides classical buildings belonging to the French colonization. This remarkable agglomeration identifies the Islamic urban pattern characterizing the medieval center of a strong physical and social identity (Sutton and Fahmi 2002).

In 1979 Historic Cairo was announced as a world heritage site but unfortunately this legacy of historical layers are facing huge stresses emerging from aging, erosion, urban growth, pollution, infrastructural deterioration, decaying housing stock, the spread of informal commercial activities and other features threatening its survival (Lipský & Romportl, 2007). In 2010 the UNESCO launched the *urban regeneration project for historic Cairo* (URHC) that was supported by the cooperation of Egyptian authorities in order to act against further deterioration of the historic center. The project aimed to reach a shared vision for architectural as well as urban heritage through a comprehensive sustainable urban development. Unfortunately most of the development projects in Cairo's historic centers were suspended for almost 4 years witnessing radical political changes after two successive revolutions. During this period urban heritage suffered remarkable violations and threats, which needed the support of both, community organizations along with governmental authorities.

Departing from the fact that urban heritage conservation consequently leads to architectural heritage protection, Cairo 2050 Development Plan (Cairo Governorate, 2010; General Organization for Physical Planning GOPP, 2010) declared historic Cairo as a heritage park with several monuments dominating its townscape. It is encouraging public spaces rehabilitation, vacant land regeneration, adaptive reuse of monuments, injection of cultural events and enhancing the interconnectedness between different historical clusters (Elsorady, 2017). A mind shift is taking place declaring the importance of urban heritage conservation for developing historic centers in Cairo. It is oriented towards regaining back urban safety through developing recreational and service areas for local communities (Sutton and Fahmi, 2002).

4. Sustainable design principals for historical spaces undertaking change

Cultural assets usually guide the process of managing change in historic centers, which influence the forms and functions of public spaces (Al-hagla 2010). Developing urban heritage undertaking change requires injecting the conventional approaches with new trajectories compatible with the current condition of uncertainties. This mindset requires merging traditional pillars for public space design along with new tracks enabling transformability and flexibility. Based on a dense research tackling frameworks, structures and criteria (Ismaeel and Elsayed, 2018) aiming to detect the required principals for designing public spaces in historic centers, the paper introduces the following model guiding the sustainable design for historical spaces undertaking change as shown in table.1.

Table 1. Shows a sustainable design model for historical spaces undertaking change

Principals	Indicators	
• Authenticity	The design of urban voids in historical setting is committed to encompass elements fostering the identification of the location, landform, architectural style and inherited memories. The design shall preserve any authentic architectural and urban features distinguishing the cultural landscape and facilitates reading the sequential historical events. Nevertheless, the design shall promote the revitalization of intangible heritage through its urban form. (Hassan, Lee and Yoo, 2014).	Normal conditions
• Legibility and Connectivity	Legibility and connectivity of Urban heritage represents the relationships between historical districts and clusters of public or private character. Enhancing the connectivity between urban voids provide a better reading historical events (Hassan, Lee and Yoo, 2014). It facilitates the accessibility of cultural heritage buildings and archaeological sites facing approachability difficulties. Furthermore, connectivity reflects urban contiguity and compactness, which minimizes commuting systems offering opportunities for urban development specially in changing urban and social conditions (Jabareen, 2006).	
• Visual appropriateness	Urban voids in historical settings usually overlook numerous valuable monuments and built cultural assets, where open space design shall enrich the visual experience of local inhabitants and visitors. Therefore, It could play an important role in enhancing the educational mission of the open space, besides enriching the acquired knowledge regarding the historical stratifications composing the cultural landscape (Hassan, Lee and Yoo, 2014).	
• Density and community size	Density plays a critical role in designing sustainable urban forms, where the community size affects the efficiency of the public space performance. A medium size community generates better interaction between people (Jabareen, 2006), creating a vibrant urban character to the open space (Hassan, Lee and Yoo, 2014).	
• Diversity and mixed use	Historical centers are based on mixed use and functional diversity, where the regeneration of urban voids shall recall the historical realm within a contemporary setting. Heterogeneous zoning is based on change, it offers a variety of housing types, densities, rents, activities and life styles, promoting a more sustainable urban form (Jabareen, 2006). Lack of diversity produces a monotonous landscape with punctual monuments gradually losing their urban value.	
• Compatibility with nature	It targets the preservation and revitalization of the distinctive urban habitats that would regenerate the historical image of the place. The plantation of indigenous vegetation, building with local materials, restoration of historical urban features that performs a representation of the pre-existing life in historical setting (Jabareen, 2006). Moreover, compatibility with nature reflects as well the adaptability with the changing environmental conditions, where the spatial design shall promote the integration between energy systems and urban structures with in its urban form (Jabareen, 2006).	
• Adaptability / transformability	Adaptability adjusts to the varying external drivers in order to enable transformation actions along new trajectories. It offers a better understanding of change as a catalyst fostering creative urban designs (Dudek and Blaise, 2008). Nevertheless, it enables the spatial system to inhabit new functions with in changing conditions of physical, environmental or behavioral features. Adaptability of urban form is based on reducing permanent and rigid structures unlikely to change besides fostering modular units, recyclable and temporary structures of diverse functions that are flexible to change, while minimizing the interference between them (Arch, 2006).	Changing Conditions
• Evolution potentials	Evolution reflects the gradual development of design, but this regular progression is conditioned that each phase shall be capable of functioning properly within its limited range. Nevertheless, evolution enables the designed spatial system to examine its efficiency and appropriateness and allows modification in the futuristic extensions according to upcoming conditions (Arch, 2006). Evolution represents the time line of the spatial system development and adaptability.	
• Productivity	Productivity represents a way of empowering the local community through traditional crafts and small industries, endogenous in the historical urban setting. A productive cultural landscape sustains the identity of the place within fluctuating touristic densities. Further more it creates a balance in the micro-local economy facing political or demographic mutations. Nevertheless, it extends the relationship between the society and their living environment, offering diversity of uses for public space, which is compatible with concept of flexibility and change.	

5. Urban labs in old Cairo as new trajectories for designing spatial change

Cities undertaking changes are considered enormous laboratories experiencing failure and success regarding public space design (Hassan, Lee and Yoo, 2014). Urban laboratories are considered advanced methods for examining the previous sustainable design principles.

They are research-based practices emerging in urban settings experiencing uncertainties, where the rise of innovative ideas and concepts are encouraged for creating future visions of places. Cultural entrepreneurs and governmental authorities are currently examining urban labs in Cairo's historic centers, testing and assessing variety of urban scenarios adopting urban change and adapting to contingencies. It involves actions related to social and urban development, environmental enhancement and production of knowledge. Urban labs are considered as distributors of innovative ideas to local communities, valorizing the concepts of place, balancing between local and global, authentic and modern, permanent and temporary. Harmonizing these dichotomies is pragmatic and experimental as new realities are experienced, endorsing a collective learning process based on participation, opening up new trajectories to develop places under contingent boundaries (Karvonen and van Heur, 2014).

6. Darb Allabana as a living urban laboratory

Design-based research is an effective method to understand how urban spaces could change within mutational spatial conditions (Collective, 2003). Departing from this fact the paper presents the urban design proposal for revitalizing Darb Allabana's Urban voids as a living urban lab examining the transformation possibilities of public spaces within urban and social changes.

6.1 Background

Darb allabana is one of the most famous areas in historic Cairo. It occupies a significant geographical location as shown in fig.1 overlooking the Fatimid Cairo from a higher altitude. The different topographical levels are connected through ramps and stairs, adding particularity to its urban character. Darb Allabana holds a significant number of historic monuments whether fragmented or clustered, as buildings or only archaeological remains. It is dominated by Mamluk buildings and limited number of Ottoman and classical residences, besides its proximity to the Citadel which dates back to the Ayubid period. During the 1930s Darb allabana gained its reputation as an artistic neighborhood or Montmartre Cairo attracting artistes and orientalists, who used to live and work there due to its significant location in the old center. This substantial place was neglected and abandoned for years, which caused a relative decrease in its inhabitants and the increase of vacant lands, consequently a remarkable loss of its urban safety was detected due to the spread of crime and deterioration drivers. The place was suffering a gradual decay threatening its authenticity especially after years of political uncertainties following two successive revolutions of 2011 and 2013.

6.2 Detecting features of change

The dispute around managing historical landscape became a vital issue in order to preserve the cultural heritage settings from possible violations in those times of crisis. The cooperation between cultural entrepreneurs with governmental bodies was essential in order to manage the transformation of public spaces in Darb Allabana. A recognizable cultural gentrification is taking place, where entrepreneurs are redefining them selves as an integrated part of the current social fabric. Triggering changes to the social and physical environments. The paper is detecting the change occurred by one of these cultural entrepreneurs known as Lala studio, an architectural and cultural hub advocating social participation within the emerging urban transformations. It aims to merge the diverse cultural and social backgrounds of the area's inhabitants through valorizing their collective memories represented in the surrounding architectural and urban heritage.

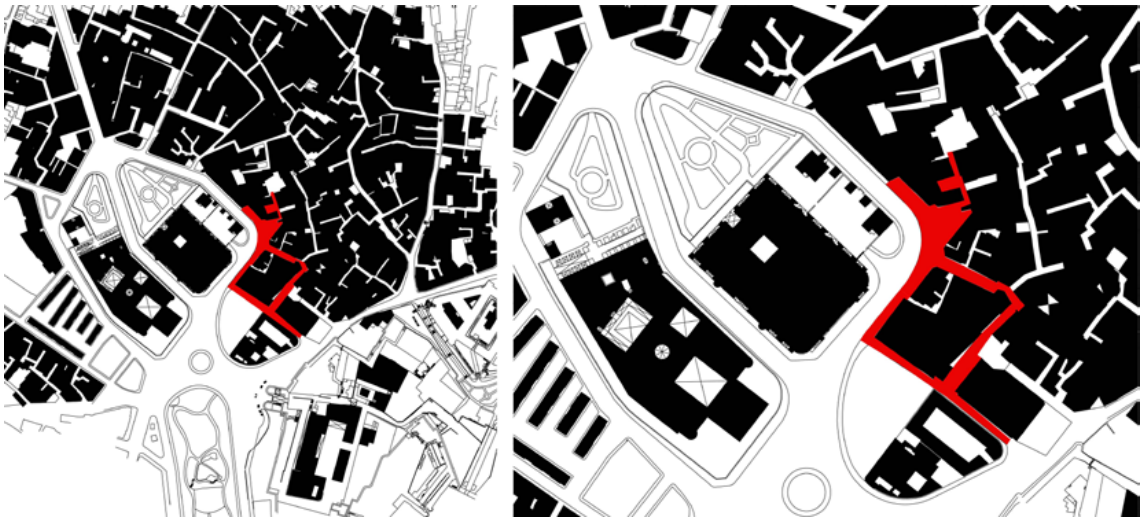
But the vibrant change-taking place in the social fabric was not the only detected one. Darb Allabana is recently witnessing restoration and conservation practices for monumental buildings and historical clusters that are considered the last surviving typologies of their kinds. Represented in Bimarestan of Al Muaydi, which is one of the rare mental hospitals

dating back to the Mamluk period, and Tekeiet Albustami one of the rare public buildings specialized for charity work since the 13th century. Both monuments are linked through a tunnel connecting the two urban districts of Darb Allabana and Bab Al wazir, which enables the area to influence a wider urban range and extend beyond its geographical position. After the new archaeological discoveries and the vibrant cultural changes, Darb Allabana has the potentials to compete with Al Moez street known as old Cairo's open museum.

6.3 Designing urban change

In order to cope with this hybrid archaeological, demographic and cultural changes, Lala studio has launched an urban laboratory in Darb Allabana represented in a workshop and a competition. It aimed to revitalize the significant chain of urban voids connecting the monuments and buildings of architectural value, through contemporary design of public space (Mathews and Picton, 2014). The design has to interpret the social aspirations for the area besides enhancing the image of this distinguished urban heritage. The paper is presenting the author's participation with cultural entrepreneurs to develop a landscape proposal that won a certificate of honor in the competition sponsored by the academy of scientific research and technology and launched by Lala studio.

Figure 1. shows the compact urban tissue of DarbAllabana in different scales (designed by the author)



The design process was divided into three phases; the first adopted a series of site visits during different time intervals, exploring the area's urban richness and potentials of change. It included sub-structured interviews with the local community and workshops integrating multidisciplinary actors specialized in landscape, urban design and historical centers rehabilitation. This phase was concluded by a preliminary design for the surrounding landscape. The second phase adopted the detailed architectural and urban solutions for spaces, evolution strategies, accessibility, adaptability, urban productivity and visual studies. Finally, the third phase concerns this current research, which aims to assess the compatibility of the proposal with the current urban design principles, in order to identify possible design improvements for developing the proposal's experimentation.

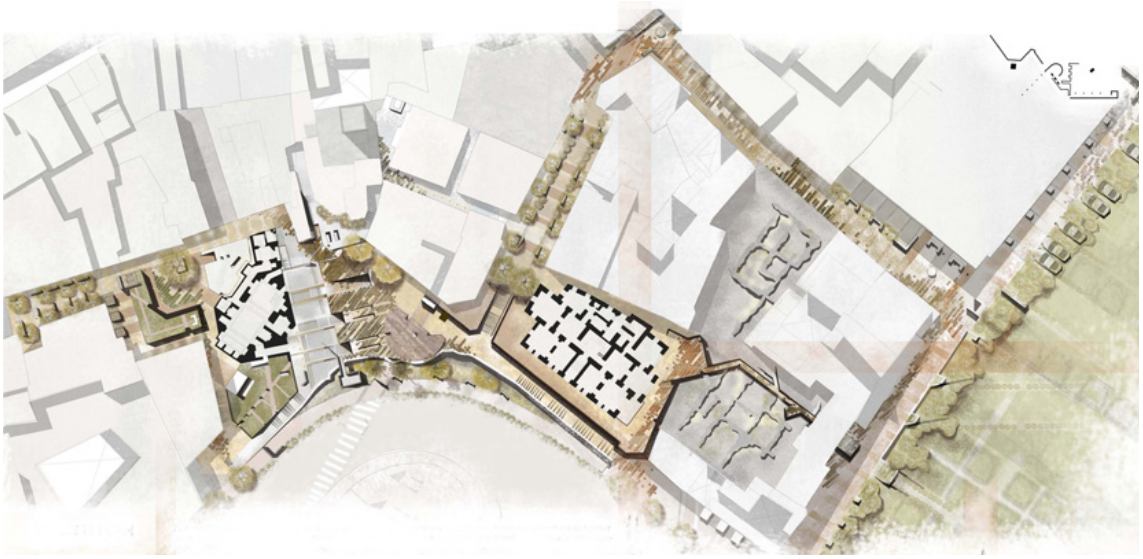
The main detected problems through the research phase concerned the lack of services and urban recognition in relation to the surrounding cultural landscape. Moreover, the shortage of accessibility between the different levels and the fragmentation of urban voids had affected the urban legibility of the neighborhood. Finally, neglecting the values of existing archaeological sites triggered the importance of designing new urban experience identifying the landscape of ruins in Cairo as a precious component of the historical landscape that has to be celebrated. According to the previous problems, the design aimed to seek a unique

language that would correlate different spaces together through a distinguishable urban experience.

6.4 Composing Platforms of Coalescence

The urban form of Darb Allabana is composed of platforms situated in different levels as shown in fig.2. The proposal highlighted this topographical asset, as it composed a landscape pattern reinforcing the continuity between the sequential spaces (Xu *et al.*, 2017). The new pattern highlighted the main points of focus or interchange through a gradient geometry merging paths, nodes and squares defining an urban code to the historical neighborhood. The designed platforms portrayed the existing diversity in DarbAllabana, and displayed the various features structuring its urban environment (Elsorady, 2017) enabling a unique urban experience based exploring urban heritage were more knowledge would be acquired. They are developed as follows: cultural platform, domestic platform, archaeological platform, sacred platform, and productive platform.

Figure 2. shows the master plan of the proposal entitled platforms of coalescence (designed by the author)



- *The cultural platform:* Jawhar Allala square is considered the cultural platform and the main public space in DarbAllabana. It overlooks Jawhar Al-Lala mosque, Sultan Hassan complex and Al Refai mosque. The platform's design is based on provoking socio-cultural events, offering spaces for sketching and enjoying the wide-open views over the historical settings. Moreover, the platform triggers the bases of a creative cultural economy in order to flourish the existing economic stagnation and demographic recession. This square is a considered a hybrid joint integrating and influencing other platforms of compatible trajectories.

- *The domestic platform:* Darb Al laban Street is considered the domestic platform. It leads to Tekiet Al Bustami, while inhabiting Beat Al Meamar (house of architecture) and other residential Buildings belonging to the modern era. Moreover, the extension of the street inhabits a sequence of workshops behind Qanibay al Ramah Mosque. They are considered part of the local urban economy and playing an important role in the urban safety of the area. Therefore, the proposal offered them working spaces in the out door controlled by bushes and seating areas in order to prevent possible violations over the street.

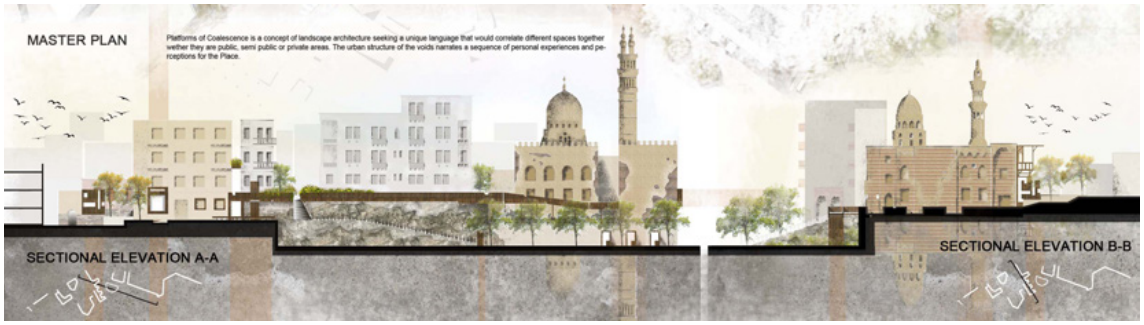
- The archaeological platform: This platform is crossing over the archaeological site adjacent to Qanibay Alramah complex as shown in fig.3 offering the opportunity to better explore the hidden ruins. The proposal offered a suspended path over looking the gardens of Al Mahmodia Mosque and the citadel. More over it offers a new visual prospect to Al

Sultan Hassan Mosque and Al Qalaa Square. The platform represents a living archaeological laboratory where new researches could depart.

- The sacred platform: Jawhar Al-Lala Square is connected to a lower level inhabiting the Mosque through a ramp, which is considered the sacred platform. It is merged with the cultural platform in terms of urban form, this fusion emerged carved spaces hosting local residents and prayers. More over an elevator was installed in order to facilitate the movement of prayers, visitors and tourists from the street level to that of Lala Square.

- The productive platform: The last platform is enclosed behind Jawhar Al-Lala Mosque. It inhabits a small community with a majority of women and children, besides crafts men owning shops of small leather and silverware industries. The design proposed a set of modular units exhibiting the workshops products besides offering other services demanded by the local community. The installed modules enclose a domestic safe space for children and women in order to develop their physical and mental potentials. Beyond Jawhar Allala mosque survives the remains of the pre-existing Kuttab (ancient building typology used to teach children kuraan, reading and writing) that was regenerated to inhabit a small library aiming at regaining back the educational role that once identified the place.

Figure 3. shows the collective urban facades of the proposal (designed by the author)



6.5 Adopting evolution strategies

The gradual progression of the proposal departs from revitalizing Jawhar aL-Lala square as shown in fig.4. It represents the main development core where all successive regeneration processes could be launched. The first phase aimed to solve accessibility challenges as one of the most essential social demands. It linked the different topographical levels through elevators connecting Lala Square with Al-Refaei Street and Tekiet Al Butsmi in Darb Allabana Street, which is expected to host visitors and tourists in the future. The second phase adopted the enhancement of urban safety along Darb Allabana Street, supporting it with the needed lighting elements, greens and seating areas. Besides developing the exhibition and service area behind Jawhar Allala mosque in order to develop a nucleus for micro-local economy. The third phase focuses on social empowerment inscribed in reinforcing community services behind Jawhar Al Lala, besides developing the workshops adjacent to Qanibay Al-Ramah. The fourth and last phase concerns completing the urban image of the place within the national and international cultural heritage landscape. This image is inscribed through the installation of the suspended pathway along the archaeological remains adjacent to Qanibay Alramah. The gradual development of the design allows modifications and changes to take place along with implementation process, which would examine the flexibility of the designed system.

Figure 4. shows the Archaeological platform and the approach of the project from Al Refai street – from the left the four phases representing the evolution of the proposal in due time (designed by the author)

6.6 Achieving Compatibility with nature

Recently Egypt has been planning new targets concerning the use of renewable energy in 2050's vision specially those involving solar power as one of the main resources of renewable energy in Egypt. Based on this fact the designed landscape elements and modular installations are adopting energy efficiency systems. They are supported by built-in solar panels to maintain their functionality during day and night. The light system in the landscape composed of LED solar powered motion sensors in order to reduce the landscape's energy consumption. Nevertheless, saving water is of equal importance as that of energy especially with in the scarcity of fresh water resources, where landscape design could play an important role in adopting water reduction policies. Departing from this fact the design aimed to use drip irrigation systems supported with water efficient fixtures and leak detection system in order to achieve a better water conservation management. The proposal addressed different conservation policies, not only for the built heritage but also for water and energy as resources in need to be valorized. Urban heritage conservation shall not only sustain the knowledge concerning ancient cultural assets but it shall also promote knowledge concerning urban resilience as an adopted trajectory to cope possible futuristic crisis (Salaheldin and Elsayed, no date).

7. Results

The results are synthesized in the proposed assessment model for the revitalization proposal of DarbAllabana's urban voids. The assessment is guided by the sustainable design principales of historic spaces undertaking change. The model evaluates the performance of the proposal in relation to each principle, through certain indicators. As shown in table.2 the proposal fulfilled the aspects concerning authenticity, legibility and connectivity, visual appropriateness, the diversity and mixed use, productivity and evolution potentials. Nevertheless, it had to explore further innovative tools to design an adaptable and transformable urban space. Assembling modular and recyclable units realize flexibility of space, but current researches are continuously developing this principle, which requires new technologies in order to accommodate the changing demands of users. More over, the pillar concerning the compatibility with nature required modeling the variability of daylight performance, besides performing thermal simulations to better design the urban microclimate. Finally, the proposed assessment model offers better chances to update and improve design tools and skills, opening up opportunities to choose between different urban alternatives. The future research aims to develop the proposed assessment model in order to acquire an advanced scoring system, capable of providing accurate assessment values according to certain design parameters.

Table. 2 shows an assessment model for the sustainable design principles concerning the revitalization of Darb Allabana's urban voids

Design Principles	Assessment	Indicators
• Authenticity	Extreme	-The authentic wall of Jawhar Allala was preserved from informal constructions. - Hidden archaeological sites were accessed - The preexisting Kuttab was regenerated while preserving its authentic walls. - A void was respected between any authentic wall and new constructions.
• Legibility and Connectivity	High	- All Urban voids were connected through a distinguished landscape pattern. - All levels are connected through stairs slopes and elevators. - Urban codes were identifying the new design, through plantations, colors or materials in order to guide the urban experience.
• Visual Appropriateness	High	- New spaces were craved or installed in order to offer better views for the historic setting. - A suspended pathway was installed over the archaeological remains adjacent to Qanibay Alramah in order to access it. - A signage system was designed in order to better recognize the entrances. - The suspended terrace in Lala square represents a landmark identifying the new landscape, offering additional views to the historic setting.
• Density and community size	High	- Is expected to regain back its density and diversity after fostering the micro-local economy and cultural events.
• Diversity and mixed use	High	- Diversified social groups are already presented in the area and are expected to increase after the interventions. - The intervention promotes new activities like, cultural, commercial educational and social ones, which increases the urban dynamics of DarbAllabana.
• Compatibility with nature	Moderate	- Productive plantations were used of medium water consumption. - The use of solar panels in all modular installations. - Water efficient fixtures and leak detection System are used to save water. - The use of endogenous plants and local materials
• Adaptability	Moderate	- All installations are standardized in order to facilitate its transformability - All modular materials of installations are recyclable in order to be reused in case of urban changes.
• Evolution Potentials	High	- The project adopted evolution strategies that were presented into four phases of construction, where each phase could function properly within its limited range.
• Productivity	High	- The project adopted a creative economy based on social cultural activities besides fostering a micro-local economy based on empowering small local crafts and industries.

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8. Conclusion

The paper is documenting a critical moment in managing urban heritage in Cairo within the current social and urban changes. The revitalization of Darb allabana's urban voids is considered a living urban laboratory experiencing the new vision of Cairo 2050 adopted for developing the historic centers and guided by the sustainable design principals of urban heritage undertaking change. It is considered an indicator reflecting the possible urban transformations promoted by cultural entrepreneurs during conditions of uncertainties. The paper concluded by generating an assessment model evaluating the proposal's design efficiency in order to develop better performances for urban heritage regeneration practices in Cairo. The study is encouraging documenting, scoring and assessing urban heritage rehabilitation in old Cairo and its conversion from marginalisation to recognition. This moment is considered a time lapse, in need to be framed, studied and developed through research and practice.

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River landscapes of former Yugoslavia: urban systems in the archipelago city

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The essay proposes a reading methodology focused on the urban fabric analysis of the fluvial cities, to define their identity, in the geographical context of former Yugoslavia: a territory characterized by a high degree of complexity and heterogeneity of urban phenomena and conditions. The tools used are those of the typo-morphological analysis, according to a scalar process looking at the territorial, urban and architectural dimensions. The analysis conducted on the case studies, critically selected by identifying common characteristics, has allowed to interpret and decode the urban structure of complex cities, made up of juxtaposed parts, conflicting fragments, urban islands recognizable for "an identity which reflects their history". Border towns, which have been strongly conditioned - in their development - by the many influences changing over the centuries, such as those of Ottoman and Austro-Hungarian Empire. "Powder keg" cities, which have been destroyed and bravely rebuilt several time, and that after the Second World War became expressions of a precise cultural and political program: the socialist and modernist ones. "Cities made of cities", which have found a model to follow in the experience of Le Corbusier and German urban planning of the 1930s. Polycentric and plural cities, with heterogeneous urban fabrics, configured as an ensemble of pieces and fragments, of types and counter-types, a juxtaposition of contradictions, a dialectical rather than a linear process. The urban forms fragmentation is a datum accepted without prejudice; an ontological truth, taken as an expression of the contemporary city aesthetic; transformed into value, it turns into an operating model for the future city.

I could tell you how many steps
make up the streets rising like stairways,
and the degree of the arcades'
curves, and what kind of zinc scales
cover the roofs; but I already know
this would be the same as telling you
nothing. The city does not consist of
this, but of relationships between the
measurements of its space and the
events of its past […]
Italo Calvino, Invisible cities

Introduction

This paper wants to investigate the typo-morphological characteristics of the Balkans river city, by comparing five capitals of former Yugoslavia, sited along Danube and its tributaries, characterized by a high level of complexity and heterogeneity of urban phenomena and conditions: Belgrade, Novi Sad, Zagreb, Ljubljana and Sarajevo. They are cities of oxymorons, cities of water and bridges symbolizing reconciliation and war; cities of rivers that unite and divide; "lump-like" cities, chapped in so many clods; "labyrinth-like" cities, made of rhizomes. Their respective urban systems, open, acentric and non-hierarchical, due to the complex semantic model of the rhizome, presents itself as a succession, over time, of different cities, a collage of urban fabrics in transformation. Metropolitan archipelagos, made up of independent islands, linked to the succession of different dominations and revolutions, they appear as sets of dissonant forms, fragile mosaics that laboriously yearn for their re-composition in a unitary order.

The Balkans represent a "liquid" geographical space, made up mainly of impassable frontiers and memories of a fratricidal war not yet reconciled: an "explosive" mix of different races, religions, traditions. Slovenes, Croats, Serbs, Montenegrins, Macedonians, Bosnians, with many other minorities, inhabit the landscapes of the trauma of the failed federal model of the former Yugoslavia. This heterogeneity, inherent in the Balkan Peninsula DNA, according to German academics, in particular, is reflected through the settlement models. For this reason, the expression "Balkan city" cannot identify a precise urban type but, more simply, a group of cities located in the same geographical area.

The aim of this investigation is to demonstrate how, in the research, everything starts with a question that, assumed as a hypothesis, becomes the goal to pursue, through a constant dialogue with the reality and the identification of the relationships between different elements. Specifically, this "preconceived hypothesis", that recognizes a precise urban identity for the Balkan city, at the end of the research path, delivered the following outcome: the reading of urban fabrics represents a particularly useful methodological tool for understanding the dynamics of urban form construction, for planning future scenarios, for the definition of new alternative models to the consolidated city. In particular, it was possible to define new metropolitan hierarchies, identify a possible "grammar" of the fragment and consider the category of "emptiness" as a possible occasion for the rethinking of the contemporary city, assuming it as the backbone of the territory. The urban archipelago corresponds to the image of the "city in the city": it becomes the new paradigm for the development of the metropolis, in which no single part, endowed with its own identity, is opposed to the others, but complementary.

Despite the differences, we can recognize common features defining and describing a unique and knowable identity of the Balkan city, at least of the river area, which is the area of investigation. In particular, the research is composed of two complementary parts: one of analysis and the other one of design. In addition, it is based on two assumptions: the first places the contemporary project in history, through a constant comparison with the inherited models which are interpreted as a typological and morphological matrix of the city itself, in its subsequent modifications and transformations; the second concerns the close link between the shape of the territory and the settlement principle.

Cities of fragments: the case studies

In the research and definition process of the Adriatic-Danubian city configuration, the recognition of the geographical characteristic of the urban form is a fundamental prerogative. Corboz defines the landscape "an accidental whole of topographic fragments embedded in each other pursuant to a point of view, a group to which the observer confers the dignity of a formal system". Therefore, according this definition, the landscape, including the urban one, is embodied in a mental construction, in a pure cultural act.

The tools used in the study of these five cities are those of the typo-morphological analysis, according to a scalar process, which contextually observes the territorial, urban and architectural dimension. The analysis conducted on the case studies allowed to interpret and decode the urban structure of complex cities, made up of juxtaposed parts, conflicting fragments and urban islands recognizable by "an identity complying with their history". They are border towns strongly affected, and sometimes dramatically wounded in their development, by numerous influences over the centuries, such as those due to the Ottoman and the Austro-Hungarian Empire. "Powder keg-cities", too often destroyed and courageously reconstructed, which from the second post-war period became the expression of a precise cultural and political program: the socialist and the modernist one. "Cities made of cities", which find a model to follow in the experience of Le Corbusier and German urbanism of the 1930s. Polycentric and plural cities, with heterogeneous urban fabrics, "assembly of pieces and fragments, of types and counter-types, a juxtaposition of contradictions, a more dialectical than linear process". The fragmentation of urban forms is recognized and accepted, without prejudice, as an ontological truth, taken as an expression of a new aesthetic, typical of the contemporary city; transformed into value, it turns into an operating model for the future city.

The comparative analysis, by reading the city as a place of discontinuity, as a federation of urban islands, is about the structure of settlement systems, opportunely sampled and recognized as parts of urban whole. The subjects of analysis are five capital cities located along the Danube and its tributaries: Belgrade, Novi Sad, Zagreb, Ljubljana and Sarajevo. The selection derives from the recognition of common denominators: they are cities along a river and for which the presence of water has been recognized as an opportunity; they have a Roman foundation; they are a collections of different urban structures: the Ottoman, Austro-Hungarian, Socialist city, and the so-called "informal" one. They present in their urban fabrics, broken tiles and missing parts enhancing the layers and opening to a new research order and to a new perspectives of design development.

The scanning of the urban grid taken into consideration has allowed us to see, as a recurrent characteristic, the coexistence of different parts by structure and grain, clearly recognizable and comparable: the historical center, the compact nineteenth-century reticular urban fabric, the open forms of socialist period, the suburban "informal" fabric. In this narrative sequence, there are two exceptions in the structure of Belgrade, a composite city-world, a mixture of different cultures, in which the oldest nucleus disappears, due to the tragic events of the war, on the site of the Roman Singidunum, now occupied by the fortress of Kalemegdan. The second exception is constituted by the peculiar aquatic fabric of the rafts with its floating houses, placed mainly along the margins of Ada Ciganlija Peninsula.

For each cities, the representative urban fabrics of the different conditions have been sampled and systematized in specific comparative abacus.

Genesis of a new urban identity: the redevelopment project of the Belgrade aquatic landscape

The urban redevelopment project of Belgrade aquatic landscape aims to offer a methodological, interpretative and planning reading to interpret the urban structure of the Serbian capital: a "land in between" Orient and Occident, crossroads of stories, peoples and cultures; a resilient city, with blurred boundaries, occasion of bloody conflicts, bombed many times, razed to the ground for forty-four times. Like a phoenix repeatedly reborn from the ashes, it has a complex soul, tormented by a succession of events, which have left imprinted

legible traces in the urban palimpsest. The urban topography has been repeatedly turned upside-down by wars, bombings and reconstructions: it looks like a city burned by history, in an always-incomplete series of "writing and erasing" processes.

Belgrade is a world-city, a land with strong contrasts: "its heart is everywhere and nowhere". It is located in a strategic position, where two navigable rivers, with an opposite temperament, mix their waters: the Danube, imposing, proud and superb; the Sava, modest, gentle and sinuous. From the top of a hill, it dominates the Pannonian lowland, cut by the largest water boulevards in three territorial units (Old Belgrade, New Belgrade, and "informal" Belgrade) huddling around a natural river oasis: the "Great Island of War". Its skyline, watched from the calm water of the Sava River, on the east bank, draws an amphitheatre characterized by the contrast between the extremely large and the extremely small. The powerful plot - in the vertical and horizontal proportions - of the socialist city, echoed of Le Corbusier's Plan Voisin, is in contrast with the minute plot of the small wooden houses inhabiting the river: the raft houses floating anchored to the banks; the stilt houses detaching from the soil of natural islands, sometimes submerged by floods. On the opposite side, on the west bank, the Ottoman city tightens around the ancient fortress of Kalemegdan, gradually giving way to the Austo-Hungarian one and getting lost in the hollow of a urban fabric profoundly transformed by the nineteenth-century chessboard expansions forming a fan shape along the boulevards.

Serbian, Balkan and European, Belgrade, city of oxymorons, is able to synthesize all the identity aspects structuring the case studies taken into consideration: ubiquitous, multipolar and porous city, in which the geometrical notions of *centre* and *periphery* lose meaning. In a de-hierarchical territory, where sometimes even *rural* and *urban* categories merge, the problem consists in finding a syntax, in the ability to read the city as a hypertext, in thinking about the category of "emptiness" as a possible guiding thread.

The tools of the typo-morphological analysis suggest to the project a research to satisfy the need and will of order. The open urban system, acentric and non-hierarchical, due to the complex semantic model of the rhizome, presents itself as a succession, over time, of different cities; a collage of dissonant forms; a fragile mosaic of fragments laboriously yearning to their recomposition in a unitary order. In the palimpsest of this metropolitan archipelago, made up of independent islands, the major territorial infrastructures become the occasion for a project of urban resilience using the poetry of the fragment as principle of composition for the contemporary city. In this polycentric capital, made of heterogeneous plots and fabrics for shapes, types, scales and languages, the waterways - Danube and Sava rivers, in the confluence of which is Belgrade - are transformed into suture lines; they are assumed as public spaces, places of connection able to link, physically and visually, variables and variations of a plural city, a *narration* in progress.

If in the historical city fixed points, like monuments and squares, symbolize the place identity, the contemporary city finds its representation in connections and networks, expressions of movement, telling the story of a territory. The rivers, which Pascal defines as "walking streets", the railway line, the highways, the bridges, the dams, the great arteries, on which cultures, ideas, values, goods and people move, constitute the backbone of the territory and city; they mark the path, sometimes mimetic, in the landscape, always in the balance between a new wound and a sewing of the existing.

They become occasions and materials for "new experiments" in urban composition: to redesign new configurations, spatial orders and scalar relationships.

In turn, networks connect "objects" transformed into fundamental elements of architecture. The genesis of the urban structure changes: the city extends in the dimension of the territory, a network of irregularities and fragments. It is probably a new concept of urban morphology, no longer determined by spaces but by volumes: accumulations of solids in an almost intact void, which loses its characteristic of "configured space" and offers, at the same time, a precious potential. It is necessary to change the method but not the tools, raising the cities scale from typically urban to territorial, not so much because of the buildings size but for extended spaces separating them. It is probably necessary to invert the point of view, both in the planning and in the interpretative reflection, looking first to the empty space - before the full one -, not as an absence but as a generative condition. In the metaphor describing

the city made up of fragments, like an *archipelago*, the *sea* could become the criterion useful for understanding the characteristics of the islands (urban fragments grouped under the name of "archipelago"); it could be looked as a structure, and not just a connection, of urban heterogeneity; as a project subject for a city on the move.

Nature becomes an architectural element: it loses its characteristic of an uncontaminated background and takes on an urban role, together with the new buildings, in a paratactic-like compositional relationship. The "infra-structure of the void" is taken as a key to the project: connective fluid in the system of pauses among the urban islands.

In many cases, as in the case of Belgrade and of Istanbul itself, geography becomes the structural element of recognisability of the place, parts, superimposed cultures, more than monuments and architecture. The river becomes an "urban fact" able to offer a new centrality to the city: a backbone that turns into a new public space, linking the fragments; place of *crossing*, but also of *being*. The design topic, through this transfiguration projecting the territorial dimension into the urban scale, recognizes the value of "internal space" to the sections of the two rivers. These are territorial infrastructures drawing the landscape and now assumed as urban infrastructures, "streets without dust": they are introjected into the design of the city, as generators of the constructed form; as paths, *places of crossing*: streets made of water. The river banks are dig by three large incisions: true "river rooms", *places of being*, water squares. They are recognized as relevant areas with a high regenerative value: "homogeneous" islands, in the city archipelago, in which green interspaces and architectural episodes fall. On the inner edge - which separates the water from the mainland - three objects with a strong poetic reaction, immersed in a park and aligned along an axis, are placed in sequence, in different combinations. They reflect the peculiar orographic characteristics of each of the three incisions: on the riverbank, across the line, in the water. The compositional process aims to tackle the architectural project as a tool for the construction of urban space and landscape. The design theme investigates the building that holds different stratified functions. The "blade-like building", the "slab-like building" and the "tower building" represent the three declinations of the city-building, vertical or horizontal, as a new settlement model for living along the river. The investigation about the relationship among space, construction, architecture and nature manifests itself from the ground to the top and becomes a compositional theme: the buildings are rooted over the "land line" and the "water line", through a relationship incorporating nature into the building, giving it a characteristic of "internal space". The park has two levels: it runs through the pilotis - at the foot of the building - ancient memory of the stilts houses, and project itself into the terraces level. The tall buildings acquire an urban value: they recreate the threads of torn plots. Cornerstones in the topography of the cities, they establish distant visual relations, imposing an order in the "museum of urban shapes". The morphological and typological tools, typical of architecture, become an instrument to dominate the geographical scale and to recompose the fragments: networks and nodes, lines and points: they are the elements of the new order of the landscape-city.

Figure 1. Urban morphologies.
First row from the top: Belgrade raft-houses (Ada Ciganlija island).
From the second row down: the historical urban fabric. Comparative abacus: Novi Sad, Sarajevo, Zagreb, Ljubljana.
Original infographic model by Dell'Olio A., Muschitiello A., Obradovic D., Redavid R., Semeraro S. [Politecnico di Bari, 2018]

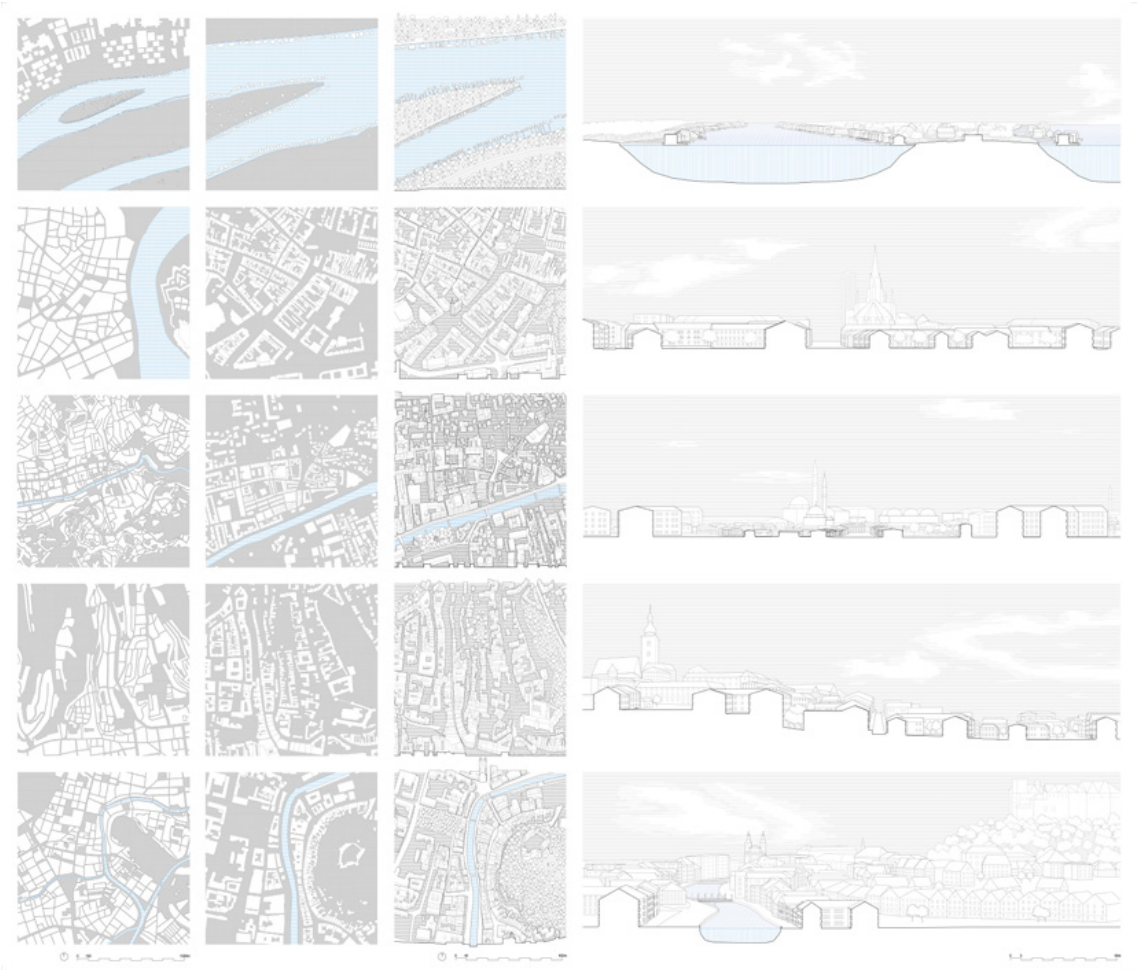


Figure 2. Urban morphologies.
The nineteenth-century urban fabric. Comparative abacus: Belgrade, Novi Sad, Sarajevo, Zagreb, Ljubljana.
Original infographic model by Dell'Olio A., Muschitiello A., Obradovic D., Redavid R., Semeraro S. [Politecnico di Bari, 2018]

Figure 3. Urban morphologies: the socialist urban fabric.
Comparative abacus: (from top to bottom) Belgrade, Novi Sad, Sarajevo, Zagreb, Ljubljana.
Original infographic model by Dell'Olio A., Muschitiello A., Obradovic D., Redavid R., Semeraro S. [Politecnico di Bari, 2018]

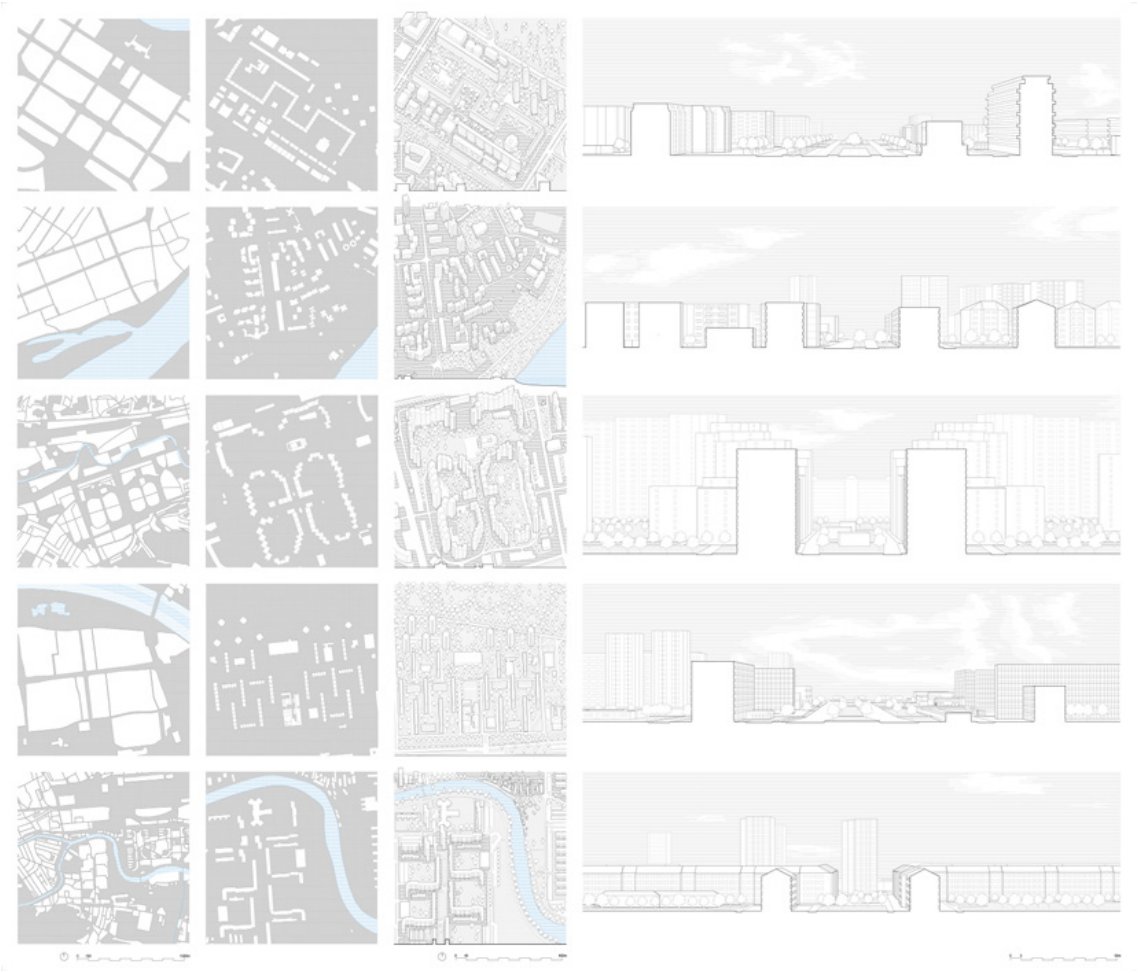
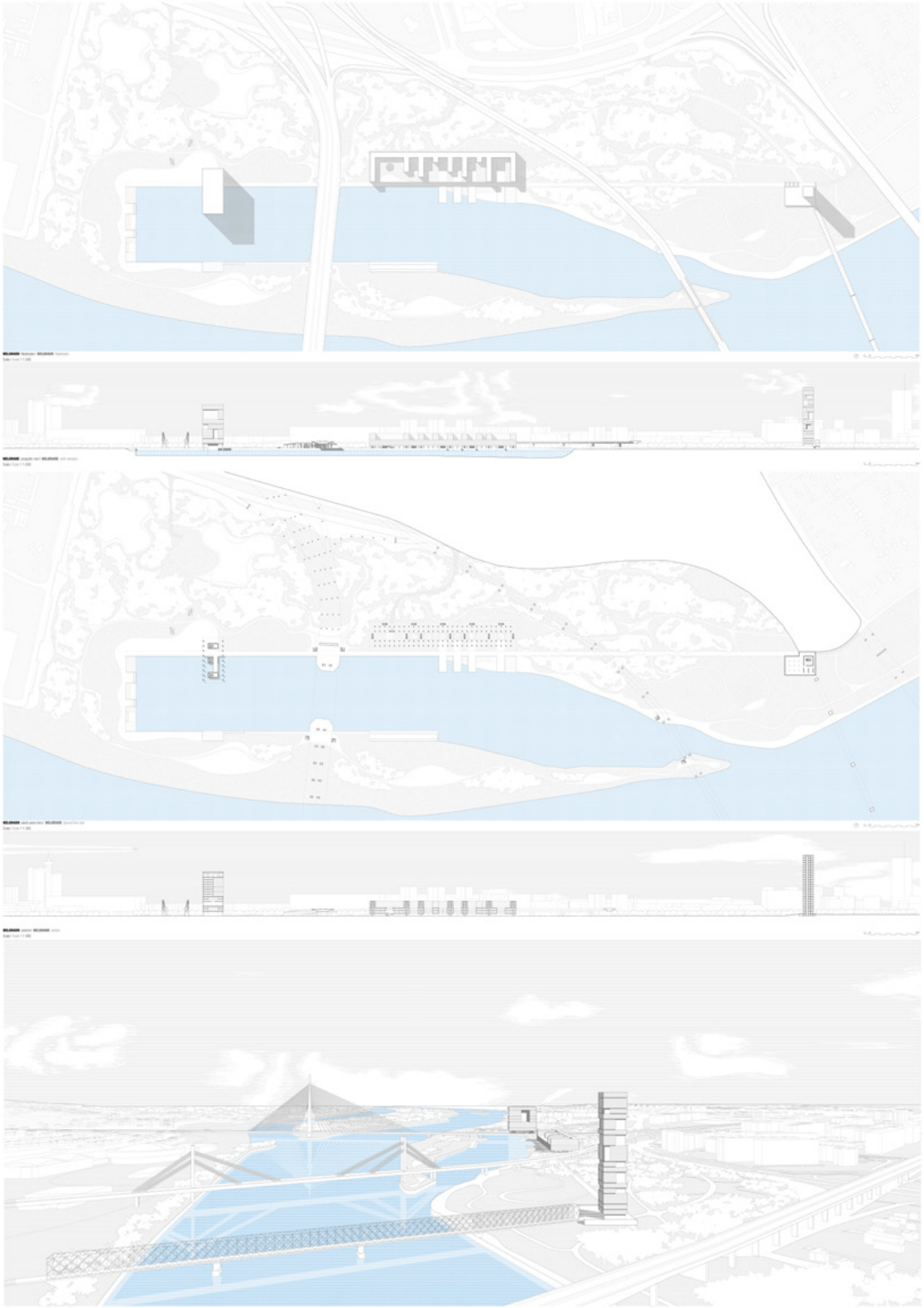


Figure 4. Redevelopment project of Belgrade aquatic landscape (left bank of Sava river). From top to bottom: planivolumetric, ground floor plan, view of the project area. Original infographic model by Dell'Olio A., Muschitiello A., Obradovic D., Redavid R., Semeraro S. [Politecnico di Bari, 2018]



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Shopping suburban fabrics as a contrada: reading and transformation perspectives

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The following paper focuses on suburban shopping mall type, interpreted and analyzed for its morphological characters. It is observed through the lens of the disciplinary tradition of Italian-Roman processual approach typo-morphological studies and, it is interpreted as a 'traditional' fabric. A fabric that arises from route's pertinence stripes, which doesn't detach itself from the generator route and does not produce situations of autonomy such as specialized blocks, equipped with special nodal compartments.

The real special compartment, place of common identity in the contemporary suburban commercial fabric is therefore the route, the *mall*[1]. It entertains with the units that overlook and settle on it a relationship of mutual dependence. Each unit, even in the case of a tissue sufficiently extensive and complex to have complete blocks, is identifies only because it belongs to the path on which it overlooks, regardless from the fabric's block that contributes to form. Such is the condition of most contemporary malls, except for some exceptional and experimental cases; this condition makes interesting a comparation, from both the analytical and design perspectives, among the *mall* and base traditional urban fabrics, that in their first

1 The term *mall* is used, in the second half XX century, to designate the suburban commercial aggregates and the belonging commercial route. It is used also to indicate the London monumental route connecting Buckingham Palace and Trafalgar Square. The word *mall*, however, before its monumentalization, indicates the ritual game lane, of the english *pall mall* game, deriving from the italian XIV century *pallamaglio* game.

Introduction

A *contrada fabric*

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Methodology

The application of reading tools used on traditional fabrics, to contemporary built environment, far from being a nostalgic and postmodern layers overlapping operation, arises from the recognition of common dynamics, resulting from anthropic customs and needs, shared by modern and contemporary inhabitants. The first and most important among these anthropic acts is that of the distance walking, from a remarkable place to another. It involves the fact that the man must recognize in the soil/orography, the suitability of portions and lines for safe walking, by analyzing mechanical characteristics and shape, relations to natural and anthropic hazards. Thus, the routes' system analysis, along with that on the interconnected polarity/nodality settlements, provides a first critical step for understanding morphological aspects shared by men and territories of different eras. Even if change the means, speed and forms of distance walking[3], as well as polarities and nodalities morphology, do not change the communications and networking needs.

Coherently with what just said, the analysis through dyadic couples individuation (routes and polarities/nodalities, basic elements and special elements) is therefore applied in this study to the contemporary built context for interpreting the organic behavior of the suburban commercial fabric, according to ancestral anthropic acts and needs. It is extremely interesting to note that from such an experimental interpretation emerge so many analogies and similarities between fabrics very distant in time and space.

The recognition of the *mall* as a special commercial fabric ruled by the *contrada* morphology is one of the most relevant evidences resulting from this reading operation. The *mall*, commonly seen as a monolith isolated in the contemporary suburban area, when is analyzed at different scales (territorial/urban, aggregative and building scale) and by using the dyadic couple of opposite and complementary elements in the formative process, can be profitably interpreted and understood as an urban fabric, in the perspective of its future

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2 The term *contrada* embodies the concept of strict dependence of the building units and consequently of the whole aggregate, from paths; the term indicates at the same time the principal path, the built aggregation that settles on its pertinence stripes and secondary routes that flow into it, with the respective pertinence strips' buildings; see: Caniggia, G., Maffei, G. L. (2017);

3 See, for example, the transition from traditional path for transports with animal traction, to railways, highways and, later, digital channels;

life and transformation.

Like the traditional urban fabric of Europe's historic centers or American downtowns, *mall*'s suburban commercial fabric comes from the territory, but from a (new and different) network of routes (no longer traditional routes but motorway, railway and airway), and acts as a nodality/polarity of this network.

It is part of a territorial and urban organism that comes from new routes, which do not generate fabric on pertinent stripes, but settle in proximity of nodes and poles[4].

At the aggregative scale it shows several characters of traditional fabrics. The fabric seems to be conceived spontaneously, almost to compensate the problematic lack of urbanity of suburban settlements.

As a concentrate of city, recreated *in vitro*, served by bypass routes that connect it securely to the suburban organism's route network, the fabric is located within the bypass inner perimeter, as an emanation of commercial pedestrian special routes, on their pertinent stripes. In analogy with the traditional fabric, in the contemporary commercial fabric is possible to recognize base building (unit stores) and special building (*anchors*)[5]. Last but not least the units' aggregation, as in traditional fabric, shows a tendency to form blocks. These blocks are normally not specialized through the creation of a special nodal compartment in the courtyard space. The fabric, as mentioned, is governed by the lowest level of specialization, that of the *contrada*.

The work of analysis by using urban morphology traditional tools and methodology leads to recognize the *mall* as a commercial fabric ruled by the *contrada* principle, in the various phases of the formative process that will be exposed in the following pages, for an analytical knowledge and from the transformational perspective.

Forming process

Suburban mall formative and transformative process

The *mall*'s formative process as a 'suburban commercial special fabric', both from a chronological point of view and seen in the succession of logical /morpho-logical phases, reveals to be an important example of organic coherence among spontaneous and critical consciousness in the contemporary built environment.

In the process interpretation, here synthetically described, carried out by using a comparative reading of historical, graphics and photographic documents, becomes clear, both in urban and suburban phases, that the process is characterized by a strong solidarity between the commercial special fabric and the urban and regional organism. This aspect appears to be particularly relevant, especially if considered within the current debate on suburban *mall* and their relationship with the city, where the *mall* is simplistically identified as a sort of island, alien space landed into the real territory.

The scanning in phases proposed in this paper is a synthesis of a complex process[6]: after a first development phase in urban context follows, in the second phase the development of special commercial fabrics in suburban context, up to reach the mature *mall* type formation in the third phase. The fourth phase (conclusion of the paper), seen as future design and planning phase, an attempt to identify perspectives of process critical continuation, to update the type and make it more responsive to changing needs, coherently with the processual design philosophy[7].

1. Special commercial fabrics in the urban context

During preindustrial era, in the context of European cultural area, until the first half of a XX century the development of commercial aggregates, like development of urban fabric in

4 Among these polar/nodal settlements, some mainly basic, others dedicated to specialized uses, there is also the commercial specialization of the *Mall*.

5 Coleman, P. (2006);

6 For deeper analysis see: Buongiorno, V. (2019);

7 Caniggia, G., Maffei, G.L. (1987); Caniggia, G.(1997);

general, follows the rules of ancestral needs such as the distance walking between territorial poles. The settling unit, firstly agricultural ones, then building and aggregative/urban, develops in close adherence with the route that satisfies this movement primary need[8]. The first serial units are positioned in adherence to the path, on its two pertinent stripes. Departing from this foundational act, the formation of the base fabric sees the settlement on secondary routes (*building* and *connecting* routes[9]) that flow into the first route called *matrix*, to create compact aggregates and develop in an areal dimension rather than in a linear one.

The commercial function in the traditional base fabric is first exerted on the road with mobile and ephemeral structures, then slowly stabilizing in the ground floor of the row houses, in close contact with the road and with the flow of people and goods, in covered spaces with large openings on the road which constitute the most immediate evolution of the ephemeral street market stall, in terms of comfort and stability. While the ancient Roman store[10], embodies this type of road commerce, its modern version, inserted in the ground floor of the Medieval and Renaissance row houses[11] even if continues to be very opened towards the road, it prepares for the next phase of separation, through the diaphragm of the showcase window. This separation will have a consecration in the French *boutique*, which populates the Parisian *passages*. The road oriented commerce dedicates the available indoor space almost entirely to the storage of the goods that are transferred from seller to buyer via the bench/exchange node next to the route. The *boutique* has a more complex internal structure. It is made up of a larger space, private and not physically accessible for the client, dedicated to the seller for goods storage and display, and a dedicated customer space that overlooks on the road. This last space, even being inside the shop, is accessible to the customer during the store's public opening hours, becoming almost a hybrid public/private extension of the urban public space. It is characterized and defined by the presence of display items for goods that can be purchased at the bench/seller node. The most important and representative exhibition element is the showcase window, a big opening overlooking on the urban routes on which the boutique is settled[12]; the showcase window also acts as a visually permeable boundary between a totally public outdoor space (place of the *flanerie* and comparative observation of electrically illuminated display cases)[13] of route or *passage*, and the boutique's interior public/private space for customers.

Both in the case of the open store on the street with the seller-buyer node overlooking the urban route, and in the case of the indoor boutique separated from the street by the showcase windows and equipped with an internal public/private space dedicated to the buyers, the urban route plays a very important and hierarchical role. This role is explicitly declared in the specialization of some routes (*passages, galeries, arcades*) covered and dedicated to the special function of commerce, in the form of comparative shopping[14]. These specialized *contradas* are often formed in backyard areas inside row houses, precisely to avoid interferences between commercial specialized function and traditional routes traffic congestion, thus building an *antelitteram* bypass.

Simultaneously to this process of route's consecration/sublimation as a special space of the urban fabric, in Europe during XIX century can be observed a further fabric's specialization, through the recasting and specialization of some of its blocks or parts of them. Borrowing transformative dynamics from similar special typological processes that during Middle Age and the Renaissance led to the formation of special types such as the monastery and the *palazzo*[15], the specialization of commercial urban block leads, through the commercial unit recasting and the organization in the courtyard space of a special nodal compartment with

8 Strappa, G. (2016);
9 Caniggia, G., Maffei, G. L. (2017), glossary, pag. 209;
10 Giannini, S. (1970);
11 Caniggia, G., Maffei, G. L. (2017), Pag. 97;
12 Showcase window, introduced along with the boutique type during XIX century, is made possible by technical innovation in the production of glass sheets, big and thin enough to allow the comfortable observation of goods through big windows, from outside the store.
13 Electricity technology plays an important role in the introduction of showcase windows, ensuring a higher level of security against indoor fire risk.
14 Geist, J. F. (1995); Lemoine, B. (1989); Benjamin, W. (1986);
15 About dynamics of paths overturning within the fabric's urban blocks, in the 'Palace' type formation, see: STRAPPA, G. (2014) pag. 64;

transparent cover, to the formation of organisms such as *Grand Magasins* and *Department stores*. Such special commercial units are readable in the process as the result of serial unit's recast and aggregation joined with the horizontal and vertical routes' overturning and development (by using technical innovations such as the elevator, or the revolutionary perpetual movement allowed by Otis' escalator[16]). The courtyard space, in the specialized block becomes a special nodal space, from being a serving space (hosting storage and service pertinent spaces) becomes a served space, identity place of the department store, theatrical scene for the sparkling commercial life with the incessant movement of shoppers in search of goods.

2. First suburban developments

Los Angeles and the United States west coast during the first decades of XX century are the experimental laboratory for the realization of suburban city model. The conditions for the realization of such innovative experimental development in this area are complex and varied: the great demand for affordable housing from the protagonists of an internal and international migration generated by regional opportunities[17]; the availability of new tools and modern technologies, such as that of car and the refrigerator, allowing important changes in the daily family time schedule; but especially the development, in progress, of a network of motorways special routes, at urban and regional scale, which together with the diffusion of car use in the middle classes and popular most affordable models, allowed to extend considerably the residence-work distance, so allowing to inhabit a larger territory.

The development of the suburban model dominated by the *bungalow* type[18], brings to the suburbs a remarkable quantity of residents, migrating from other countries or from unhealthy and congested downtown, who need services and specifically commercial spaces.

The spontaneous response is given by the owners of department store which transfer or duplicate their presence in the suburbs, moving away from prestigious downtown locations difficult to be reached because of vehicular traffic, settling in proximity of special urban *highways* routes and at the nodes of the network formed by them.

A network of routes very different from those of the past. The motorways that innervate the suburban city, unlike traditional ones accentrating urban life and an urban generators of fabric right on their pertinence stripes, arise such dividing lines[19]; the new routes are places for great flow of vehicles, from which the pedestrian is excluded and on whose pertinence stripes there is no settlement, but a green void[20]. Although there is in this first phase of suburban development, the attempt by the spontaneous consciousness of commercial community, to settle following the rules of traditional fabric. They build their department stores on the pertinent stripes of a route, the driveway and urban highway, which for its nature does not provide continuous permeability with the surrounding territorial/urban/fabric contiguous organism. Because of the quality and quantity of traffic flows that the route has to support, the highway route, urban or extra-urban / territorial is designed to have relations, inputs and outputs only nodal/polar points, in proximity to preexisting or newly established settlements or next to intersections with other routes. The establishment of specialized functions along the relevant segments of the suburban highway, then, in an attempt to escape from the old downtown clogging problems, does not solve it and create a new problematic situation of traffic and fruition difficulty of the commercial aggregate and the services offered, both for pedestrian and vehicular customers. The Los Angeles *Miracle Mile*[21] is a clear example, along with the various commercial *strips,* of that phase. In *miracle mile* is also possible to observe

16 Chung, C. J., Inaba, J., Koolhaas, R., Leong, S. T. (2001), Pag. 337-369;

17 LONGSTRETH, R. (1997);

18 Bungalow first development dates back to the formation of the first peripheral aggregated, before the massive advent automobile, close to railway stations, up to reach the full potential in mature suburban developments, such as Levittown, NY; see: Vachon, L., Luka, N., Lacroix, D. (2003);

19 *For asse accentrante/accentrating axis* and *linea dividente/dividing line* notions, see: Strappa, G. (1995), pag.82;

20 Buongiorno, V. (2019); Liebs, C. H. (1985); Hindley, G. (1972);

21 The *miracle mile*, in Los Angeles is a representative case of a configuration shared by many commercial settlements of the first decades of XX century, including the commercial *strip*; see: Longstreth, R. (1997) pag. 127-141;

the spontaneous formation of an organic internal hierarchy within the aggregate. Once the main department stores have been established at a distance that allows them to be easily reached for a comparative car-oriented shopping, a denser commercial aggregate begins to form, similar to the mixed specialized aggregates of the traditional fabric: in the sections of the pertinent stripes placed between the special commercial unit gradually are settled commercial smaller serial unit[22], that take advantage of the customers flow generated by larger special commercial unit. This organizational structure that echoes the shape of traditional fabrics with serial base building and nodal/polar special building, will be maintained in the process and will constitute an important character of the mature *mall* type, characterized by special units, called *anchors*, which attract and anchor the customers flow and serial units occupying the space between the anchors to take advantage of the created flow.

3. The bypass and the mature suburban shopping mall formation

The *miracle mile* marks an important moment in the *mall* formative process and the resolution of the intrinsic problem of clogging that afflicts it, constitutes the decisive step for the formation of the mature structure of the *mall* type.
Applying the dynamics of transformation and specialization used to solve historical centers and downtown vehicular traffic clogging problems, to the suburban context of American cities, results in new commercial aggregates similar to *miracle miles* and equipped, in addition, of a special *bypass* route. This route, emancipating the commercial function from the route traffic and making the fabric a specialized nodality/polarity, put them functionally and organically in the network of specialized routes that regulates the new suburban city.

The bypass route is provided with a contiguous ring of car parking, which allow intermodal exchange, from vehicular to pedestrian transport.

The interpretation of this process, can be developed looking at case studies present in the literature, shows intermediate stages and a certain graduality, representable through some study cases: first examples such as that of *Westchester business center* (Los Angeles, 1954) with bypass route ring and contiguous parkings that still present the central route that can be traveled through by car, therefore still configured as a dividing line; most mature cases such as that of the *Broadway-Crenshaw center + May company store* (Los Angeles, 1954); up you get to mature authorial interpretations of the spontaneous process in cases such as the *Willow Run community center* (arch. Eero Saarinen, 1942); it is however only with the works by Victor Gruen[23] that is recognizable the consecration of the " *mall* " type structure, that would inform the built *mall* since the early '60s until today. The scheme of Gruen's works is that of a commercial fabric in which the special character of the streets / *contradas* is accentuated by the fact that these are, for the first time with the *Southdale center* in Edina, Minnesota, fully enclosed and air-conditioned. The compartment of the road-*contrada* officially becomes the public space served by the 'private rooms' of the commercial units, both serial and special ones. It follows a generous opening of the front of the unit stores, further stage of a process of transformation of commercial unit, at the building scale, began with the modern workshop, later evolved with *passages* and then accentuated with the commercial unit projects designed by Gruen in its first American period. The typical structure of the *mall*, besides, heir of the *miracle mile* is characterized by the presence of special commercial units, the *anchors,* positioned at a distance of 200 m circa, which generate the customers flow that is used and exploited also by the serial units settled on the pertinence stripes of commercial routes polarized by the anchors[24].

22 In analogy with the traditional fabric, serial commercial unit are comparable to base building; whereas special ones are comparable to special building;

23 Victor Gruen (1903-1980), American Austrian architect, specialized in the design of commercial spaces and suburban shopping *mall*s and in the last part of his career urban fabrics with commercial specialization through various *pedestrian mall* projects for American and European cities; see: Wall, A. (2005);

24 In the typical *dumb bell* elementary conformation, typical in early developments, the fabric and its specialized route, *mall*s are polarized by two special commercial units that act as anchors; see: *Southdale center,* Edina-Minnesota, 1956, arch. V. Gruen;

Conclusion

Design and future transformative phase(s)

Looking back and in multi-scale perspective to the *mall* formative process is interesting to observe the rich and mutual influence between dynamics that occurs, on the one hand in urban areas, with commercial specialization and pedestrianization of town centers and downtown, and on the other hand, how the same dynamics of specialization through the creation of bypass routes are fruitfully applied in the suburban area. This exchange, as well as demonstrate, again, a commonality of anthropic reasons that motivate and explain the functioning of the commercial fabric in the two contexts, makes clear how, specialized tissues in the suburban organism , urban and suburban, existing or planned, work as nodality/polarity of the territorial routes network. What differentiates a historical center and a *mall* in this panorama is therefore the quantity and quality of specializations. An overall view of this system allows to highlight how any anthropic element is inserted in the suburban system organism, even those parts born for another type of city; at the same time it allows to note that different parts of city organism, such as historical fabrics and downtown, apparently very distant from the *mall* and the suburban development, have been included organically within the suburban system, through transformation and specialization processes, thanks to common and shared anthropic reasons.

In the current historical moment, dominated by a strong crisis of the suburban model (due to its limits in terms of economic costs, energy, health, land use, etc.) and the *mall*, recovering the ability for organic transformation of territorial route networks and, especially, of special fabrics that occupy its polarities/nodalities can be useful for future developments.

The retail trade decline, caused mainly by the strong competition of e-commerce, highlights a need for renovation of the *mall* type, to satisfy the changing needs of the new digital and ecologically sensitive global society[25].

Taking in account the formative process synthetic interpretation, and coherently to the processual design philosophy, this last paragraph proposes a future phase, intended as a critical continuation of the read formative process, as a basis for a design that in coherence with the life of the typical organism at various scales, is projected into the present for satisfying the changed needs, and to the future for trying to foresee new needs and developments.

The future continuation of the process is actually already in progress, within special experimental projects. Project such as *The Mall of America* (Minneapolis) or the *American dream Mall*, (Miami) are successful attempts to update the inherited type, adopting, albeit at different and not always congruous scales, sometimes with gigantism problems, the dynamics of transformation and specialization of the fabric observed within the formative/transformative process. Continuing the rich exchange between urban and suburban, contemporary and historical contexts, these projects specifically introduce the morphological action of knotting commercial blocks courtyards, by covering the space and overturning the mall's routes horizontally and vertically, so producing a new special nodal compartment with non-commercial function (dedicated to entertainment, sport, catering, etc); a space that is capable of satisfying the needs for integration of multiple specializations, for urban, social and community activities, perceived as fundamental in the current advanced suburban digital society.

These experimental projects focus on large-scale actions, perhaps out of scale, but shows a coherence with the formative process; they are starting points for the identification of a transformative perspective for the mall, as a continuation of the formative/transformative process.

Following this perspective, the suburban commercial fabric of the mall, in order to meet and satisfy new needs, borrows again from the urban process transformational dynamics that subjects it to further specialization. From being a *contrada* fabric the mall in its future phase passes to be an specialized blocks fabric in which the courtyard spaces, knotted

25 ATKearney agency's Report: The future of shopping centers (https://www.atkearney.com/documents/20152/986752/The+Future+of+Shopping+Centers.pdf/6455ae6f-f430-2fe7-2856-ef671153d29a - consulted on 21/04/2019);

and reorganized through the overturning of the original commercial fabric paths, become special nodal compartments devoted to new community activities. While the specialization of the block echoes the formation of the department store and grand magasins type by recasting serial units and knotting blocks in the urban area, a further step of the mall future transformation refers to an other stage of the urban process, with the creation of specialized *contradas* that bypass existing commercial paths[26] and connect the new non-commercial polarities located in the new nodal special courtyard spaces. As a new *passage* , skywalks or parallel city[27], a new system of specialized *contrada* that interconnects new special nodal compartments with each other and with the territorial, urban and aggregative surrounding organism. The new *contradas* allow greater permeability of the fabric and because of the new multiple specialization that it contains, make it accessible extended time, by day and by night.

At the building scale the introduction of multiple specializations and non-commercial functions is carried on by exploiting the spaces made available by the reduction of the necessary storage spaces in e-commerce era [28]. While at the aggregative scale the freed inner courtyard space constitutes the chance for knotting and forming special nodal non-commercial compartment, at the building scale the *boutique* becomes a place increasingly dedicated to 'sensorial and cultural' goods experience, where after knowing the products, they are ordered and delivered directly to the customer's home. The spaces previously occupied for goods storage thus become flexible and multi-functional places for information on the goods, on the productive and cultural processes that generate them, on the linked lifestyle[29]. This dynamics already happened in the past within special commercial units, such as grand magasins and department stores, and in single-brand flagship store[30], and in the mall future phase will accentuate the open character of commercial unit as a space for public, community and cultural experience, even in the smaller case of serial units.

26 In the case of downtown they bypass the congested routes by vehicular traffic, in the case of the futuristic mall in question they would bypass, integrating them in an inclusive way, the mono-specialized commercial routes;

27 Yoos, J., James, V. (2016);

28 The digital purchase for several product categories allows a direct connection between the consumer and a distribution system equipped with increasingly efficient regional hub, thus bypassing the physical store. In this new panorama, both at the aggregative scale and at the building one, mall presents considerable free spaces previously occupied for goods storage and service functions (such as the inner court), unused and useful for the future transformation;

29 Example: Prada 'epicenter' store on New York's 5th Av., see: http://oma.eu/projects/prada-epicenter-new-york — consulted on 02/08/2019;

30 Teufel, P., Zimmermann, R. (2015);

Figure 1. First suburban developments: Miracle Mile (Los Angeles), fabric's formation phases sketch on aerial view.

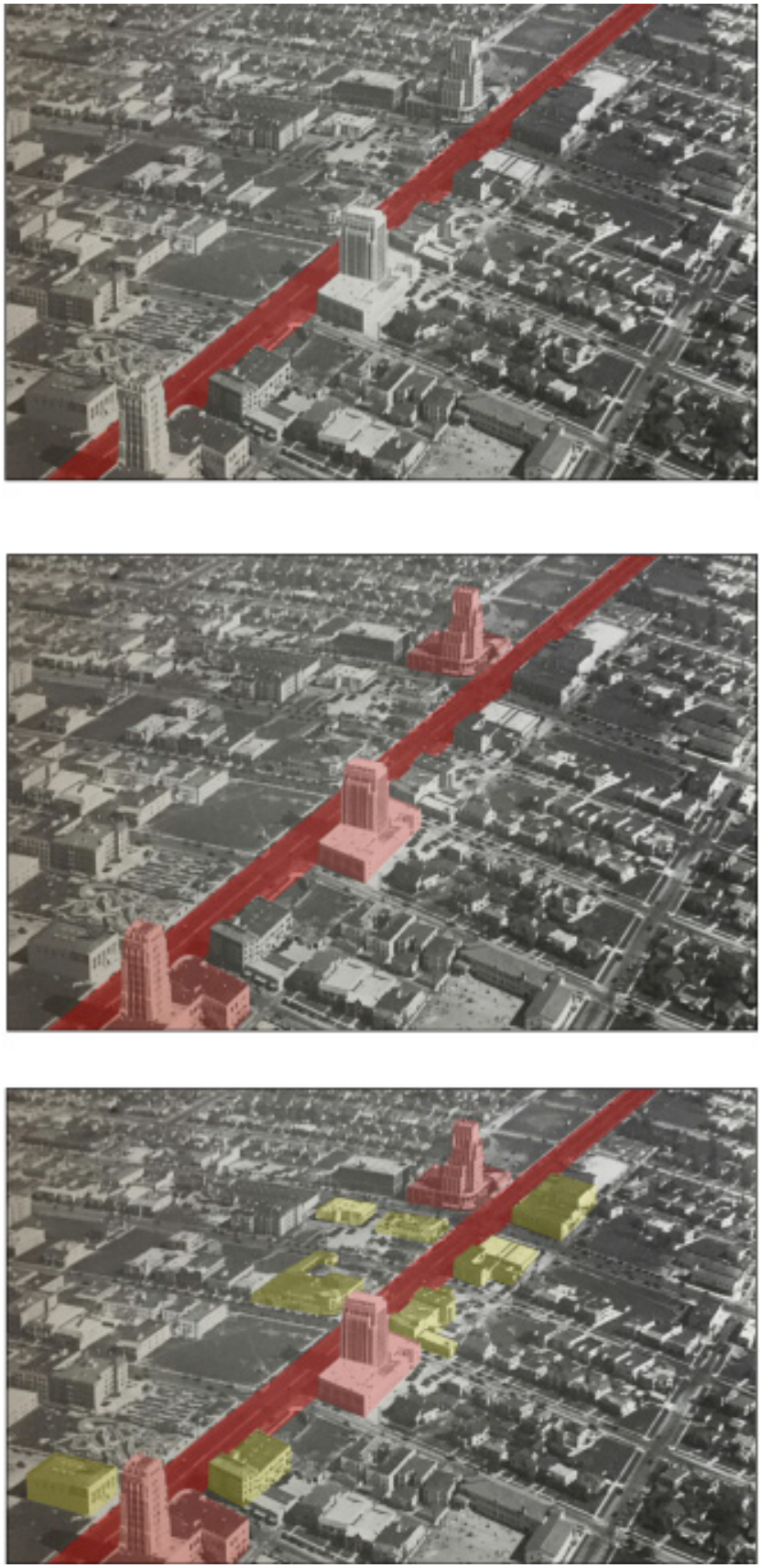


Figure 2. Bypass in suburbs: *Westchester business center* (Los Angeles, 1954), aerial photo and plan.

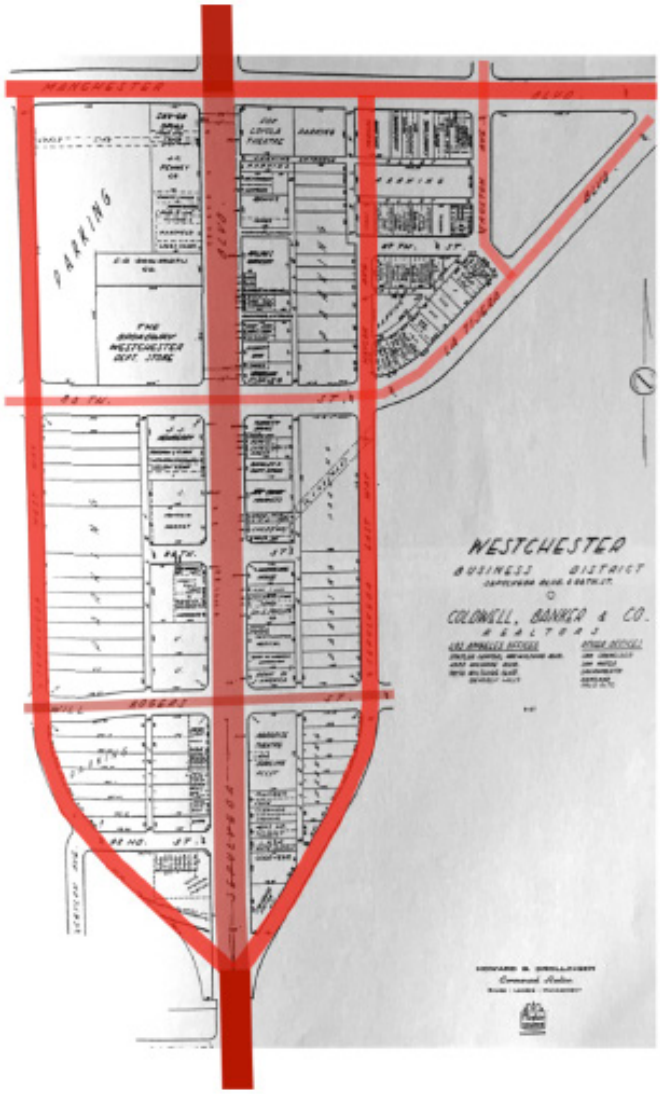


Figure 3. Mature mall type: *Southdale center* (Edina-Minnesota, 1956), arch. V.Gruen, plan.

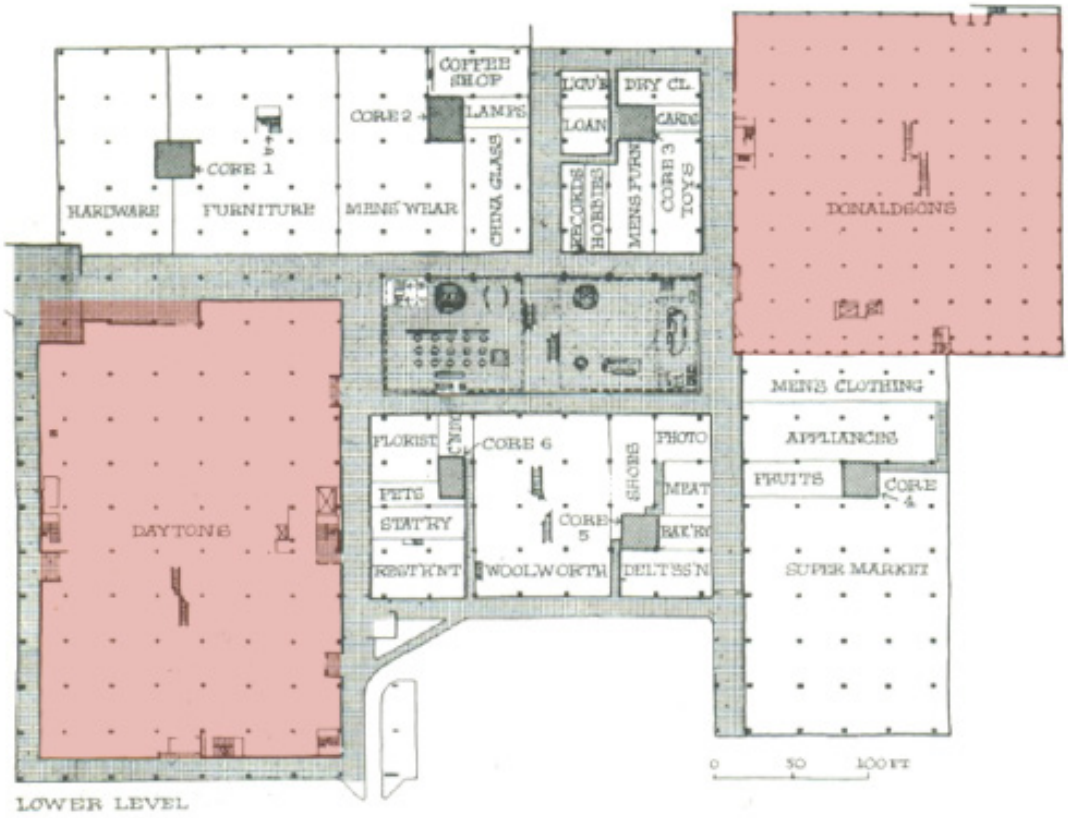
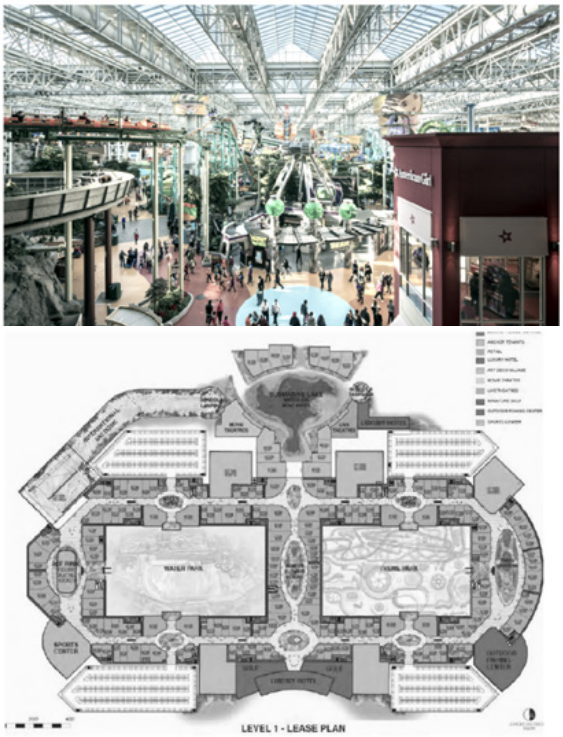


Figure 4. *Mall of America*, (Minneapolis), Plan and internal view on the special nodal compartment; *American dream Mall* (Miami), Plan and internal view on special nodal compartments.



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Living afloat: the last trend of settling in European Metropolis

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Houseboating is a relatively recent trend that since the last few decades is changing the waterfront of the main European metropolis. In fact in the last 20 year, living afloat has become a new form of settling in big cities, making the cost of dwelling more affordable and accomplishing the need of owning a space called home. These floating inhabitants belong to many different generations and lifestyles, sometimes they are young, modern nomads, sometimes just old, romantic souls.

London, Paris and Berlin, are three examples that better show the consequences of this lifestyle to cities that werent designed to host this kind of communities. All these cities are constantly adapting themselves to this spontaneous phenomenon; they are facing the rising number of houseboaters, struggling with the absence of dedicated infrastructure, the lack of attention to the needs of this kind of citizens and the connections between the existing neighborhoods and the new ones on the water. After this initial fracture, the dwellers of both, inland and floating areas are finally cohabitating and the houseboats are often considered as the bearers of change, authors of the requalification of abandoned spaces.

This research enlightens the transformation of these metropolis: from few houseboaters to thousands now living aboard. The aim of this work is to illustrate a way of occupying public spaces that often gives back something unexpected to the city, in terms of beauty, security and tourism. In conclusion, different processes and different strategies, different traditions linked to the inland navigations, brought to different solutions but similar results.

Methodology

This research was originally based on inland waterways boats and the houseboat phenomenon was mainly studied by the point of view of Yacht Design. The main aim of this research was to show how historical and geographical different backgrounds gave birth to different models of working boats that at different moments were converted into confortable accommodations, nowadays part of their own landscape. The focus then shifted to the people who decide to live afloat for the time of a journey or even permanently. However, the aim of this paper is to present three different approaches to deal with this bottom-up phenomenon that is shaping the waterfront of many cities, presenting houseboating in London, Paris and Berlin as case studies.

Academic literature about history and management of inland waterways is not enough to understand this complex phenomenon nowadays. Indeed, not only houseboating is relatively recent but also it is still growing and evolving. This is why the research methods are a combination of documentary sources – such as press articles, forums on dedicated websites, annual reports of the main agencies about inland navigation, statements collected after conferences, meetings and surveys made by the associations of houseboaters – and field observations and interviews. The results of this data collection are the main actors' portrays and the definition of the current scenario, giving shape to a possible near future.

This paper is organized as follows. It opens with a presentation of a brief account of the term 'houseboat' and the history of houseboating. Then the three case studies are introduced in order to show three different approaches to the same subject. The conclusion discusses the role of houseboating in future urban design, its limits and what can be learned by these three pioneering experiences.

Forming process

Houseboats are boats that have been designed or adapted for the purpose of dwelling. Many of them remain static and are moored to a fixed location and often linked to land to provide utilities in order to be used as permanent homes. Others, instead, are autonomous units, capable of navigating and producing their own energy. Houseboating is a very popular recreational activity around the world involving people of all ages, culture and social background. This lifestyle is appealing due to the possibility it gives to explore waterways while remaining in close proximity to any other activity offered on the land and to move, with the whole home, for a change of view.

Modern houseboating had its main kick-start after World War II, when working-class families who could not find accommodation on land decided to settle on board abandoned boats. It had been very popular during the 1960s and '70s with the city's counterculture and hippie movements, and since those times many of them started to be equipped with proper sanitation and luxury fixtures. However, it was only at the end of the past century that a significant number of European citizens started taking up residence on canals. This phenomenon has continued to grow in popularity in recent years and journalists started to talk about a "mini-boom", mainly caused by the increasing housing costs and the technological advances that make life on board easier and more comfortable than ever before.

Houseboats come in a variety of types and sizes, from the brightly painted narrowboats that ply the former industrial canals of England, to the *péniches* used to explore the Canal du Midi in France.

Apart from these more traditional models, many architects have designed houseboats of any kind and some of these projects are now standing as modern examples of this lifestyle, attracting even those who have never been interested in boating.

London, Paris and Berlin: are case studies about metropolis where contemporary houseboating is taking place challenging the actual urban schemes.

London.

UK has old traditions about inland waterways; in fact, during the Industrial Revolution

many canals were built to allow commercial carrying narrowboats to navigate around the country. These systems of waterways counted rivers and artificial canals since the eighteenth century and it is with the arrival of the railways that many of the artificial navigations closed. However, even if this was a common destiny for many other countries, UK has been one of the first to reinvest in the inland waterways for recreational use. Most of the navigable canal system survived thanks to the work of associations[1] of volunteers that in the last fifty years have rediscovered inland navigation, mainly devoted to tourism and leisure activities.

The city of London has more than 100 miles of waterways, not counting the Thames River (about other 42 miles). Communities of houseboaters in London have always existed but nowadays we are witnessing an unprecedented growth of canal goers. In fact, British canals are living a second golden age and are more popular than ever.

London has the highest average property prices in the UK and with soaring rents, life on the water seems like a good compromise to many Londoners – if not the only possible alternative – to keep living in the city. In an article of January 2018 titled "London housing crisis extends to the water", a CNN journalist states:

> The Canal & River Trust (CRT), which manages the canals of England and Wales, reports that boat numbers in London have increased by 57% since 2012. «We're seeing a huge rise in the popularity of boats, and London is the hotspot», says Joe Coggins, a spokesman for the Trust. «The issue we have is that some people don't move enough and stay in the same areas, which causes congestion. » The Trust offers two types of licenses for boaters: permanent moorings […], and 'continuous cruiser' licenses, which are around £1,000 a year, but require the boater to find a new location every 14 days -- the latter have increased in number by 153% to 1,615 boats since 2012. This rapid influx of new boaters has put the waterways under pressure, in the most central and popular areas such as Little Venice or the glamorous West. In March 2015, there were 3,255 narrow boats on London waterways, about two-thirds of them permanently docked in small marinas around the city. The other 1,225 — […]— travel up and down the canals and dock where they please for up to two weeks at a time […].[2]

Another article published in December 2017 was reporting that, according to the CRT data, «the number of boats in London rose from 2,326 in 2012 to 4,001 in 2017 – representing a 72% increase […]. Of those, the number of boaters without home mooring more than doubled from 638 in 2012 to 1,880 in 2017» (Agbonlahor, 2017). To solve the problem, the CRT is working on new mooring rules and it is proposing higher fees.

In the past months the Trust has proposed to restrict some of London's mooring spaces and start charging for others. Boaters are fighting against the authority managing Britain's waterways since mooring fee increased of up to 89% between 2017 and 2018 and they feel being "priced off" their proprieties. Most of the people accuse the Trust of prefer leisure cruisers rather than permanent houseboaters, making impossible for them to stand the new fees, as a result of gentrification. The Trust defended its work arguing that «we have made proposals to increase our mooring prices in central London so that they reflect the market rate. […] More and more people are choosing to live on water, and we are trying to find the right balance between residential, leisure and casual moorings so that everyone can enjoy

1 In UK there are several charities operating in different ways to preserve canals for pleasure boating, recreation, and industrial archaeology. First of all there was the British Waterways (BW), a statutory corporation owned by the government. It served as the navigation authority for the majority of canals and a number of rivers and docks. In 2012 all of British Waterways' assets and responsibilities in England and Wales were transferred to the newly founded charity the Canal & River Trust (CRT). The CRT cares for and brings to life 2,000 miles of canals and rivers across England & Wales. In Scotland, British Waterways continues to operate as a standalone public corporation under the trading name Scottish Canals. Other charities are, for instance: the Inland Waterways Association (IWA) and Waterway Recovery Group (WRG).

2 K. Monks, "London housing crisis extends to the water", CNN, 03/01/2018

the waterways. […] As a charity, we also have to raise the money that is required to maintain the canals. We need to ensure that we charge a fair market rate for the services we offer, including moorings, so we can invest in looking after the network» (Manzoni, 2018).

In June 2018, after months of consultations with boaters and other stakeholders, the CRT released a mooring strategy for London to deal with the increasing number of boats on canals and rivers. The London Mooring Strategy press release document says: «While a number of trials have been carried out and there have been some positive changes, for example the creation of new long-term moorings and bookable moorings, it is clear that a plan of action that covers all aspects of London moorings, developed with waterway users, is necessary to make a significant difference. London Mooring Strategy[3] will allow us to take a look at how to manage these issues, as well as make the most of opportunities that will help the charity maintain the waterways for the benefit of boaters and other users».

Matthew Symonds, CRT boating strategy and engagement manager, concludes: «London's waterways are some of the busiest in the country and we need to manage the finite space effectively. We need to face the challenges head on, as well as taking advantage of the opportunity to develop a really world-class water space that people will be able to visit and enjoy. We have gathered information from various groups, including its Navigation Advisory Group, the London Waterway Partnership, national boating organisations and other key stakeholders. We believe waterways have the power to make a real difference to people's lives and that spending time by water can make us all healthier and happier. By bringing communities together to transform their local waterway, we are creating places and spaces that can be used and enjoyed by everyone, every day ».

Paris.

The River Seine was once an important commercial waterway, plied by cargo-carrying barges, the *péniches*. As it happened for narrowboats in UK, when the inland waterways gave way to the railroads and then to the highways, barges declined in importance. Today, most of them have been converted into floating restaurants or river cruisers, while some river crafts have been transformed into floating homes, B&B or fancy hotels.

Parisians know the houseboating phenomenon since more than a hundred years, when some artists and writers like Robert Louis Stevenson[4] decided to move on board in order to have a place to work and explore at the same time. Not only artists preferred a *péniche* to a house on land, but also important personalities of their time, like Marshal Joseph Joffre, who lived there during and after the Great War, setting up his office, which he even linked by a telephone line. These original characters inspired the wealthy and aristocratic population of Paris. Most of them equipped their boats of all comforts. Almost all of these boats had a generator and running water, stored in tanks on the roof. Meanwhile, ashore, only few people had this type of comfort at that time.

After World War II, it was the turn of the Americans who remained in Paris, including actor Sterling Hayden[5], to settle on the banks of the Seine.

The generation of '68 was also tempted by the non-conformism of houseboats, the

3 https://canalrivertrust.org.uk/londonmooringstrategy. This new strategy is divided in nine topics, operating in different directions:

1. Support and prioritise development of new long-term moorings in less busy areas, primarily outer London
2. Encourage development of long-term moorings from a diverse range of providers
3. Improve provision, maintenance and management of short-stay moorings
4. Develop custom short-stay moorings to meet demand
5. Winter Moorings that recognise and balance the needs of all boaters
6. Better provision and management of boating facilities
7. Improve communication between boaters and the Trust
8. Increase business boating activity in key London waterway destinations
9. Support activities that ensure accessible and affordable access to the water for all

4 Apparently the first draft of the Treasure Island – published in 1883 – was written aboard Stevenson's Parisian barge, called *Les onze mille vierges*.

5 Sterling Walter Hayden (1916-1986) was an American actor. His most famous role probably was the General Jack D. Ripper, in Kubrick's Dr.Strangelove (1964). Once back in the US, he joined the houseboats community of Sausalito in California.

"*bateaux-logements*". Architects discovered the possibility of exploiting the zenith light and creating an innovative interior design according to the spirit of loft.

In 1975, Parisian barges created an association to defend river habitat in order to resist their expulsion, but it was only twenty years later that they obtained some recognition and status. The number of berths was regularized and new facilities favoured the installation of residential and entertainment barges along the Seine.

In the '80s and '90s, French personalities belonging to the show business as well as executives, diplomats and many others were seduced by the life on the water. The crisis of inland navigation and the soaring price of real estate had prompted many "landowners" to buy a commercial barge to be converted into a residential boat. This formula made it possible to have a large living space in the heart of Paris for a derisory price. Indeed, buying a barge in Paris can be more accessible than a traditional apartment, since the cost per square meter can be up to 40% lower than that of Parisian real estate. This is why this phenomenon still has not lost its charm and is expanding even more rapidly than before in Paris as in the rest of France.

Nowadays the inhabitants of rivers and canals come from all walks of life. Between them reigns a cohesive atmosphere, where the experience of the elders is often useful to the novices of the community, increasing the dominant spirit of sharing.

Today in France there are thousands of barges and they are generally luxuriously equipped. The main inland waterway barge is the *péniche,* adapted to the Freycinet gauge[6]. The *péniche Freycinet* was especially designed for the French and Belgian canal locks and, as a result of the wish to maximise space for freight, the barges tend to be flat-sided, with short, rounded bows and sterns. The volume of their interior and their huge terraces are the reason of their success between the higher classes of society since the beginning. On the contrary, the British narrowboats were never wider than 2.13 m (7 ft) while their maximum length is 21.95 m (72 ft). Anything wider or longer will be unable to navigate most of the British canal network (to access the entire network the maximum length is 17.37 m – 57 ft). Although both kinds of boat were designed as working boats later converted into houses, according to their main dimensions the British ones remained linked to the working class, while the French barges – with their bigger sizes and higher maintenance costs – attracted a different kind of costumers, not necessarily followers of the tiny house or the minimalistic life movements.

According to the latest estimates made by *Voies Navigables de France* (VNF) and the Port Autonome de Paris, there are more than 1,150 houseboats only in Île-de-France[7]. According to some associations of houseboat inhabitants, the number is more likely to be around 1,500. The majority of them are stationed in Paris and in the departments bordering the capital, Hauts-de-Seine and Val-de-Marne.

Over the past ten years, the green water of the river has become clearer and the banks cleaner thanks to public policies for waterfront development and re-naturalization of the waterways. Coffee shops, restaurants and sport centres are approaching the now rediscovered riverbanks and the inhabitants of the river, while appreciating these new features, fear to be deprived of their environment. Since the mooring places are rented and cannot be bought, boaters are starting to add value to the décor, becoming part of the attractions offered by the waterfront and so indispensable in the cityscape.

Owning a boat in the age of sharing economy can represent a good investment by simply renting a guest-room or the whole boat episodically or regularly on Airbnb or Click&Boat[8]. Some boat dwellers are starting to develop different operations to justify their presence surfing on the wave of unusual places to be rented for private parties or special events.

Houseboats are anchored in little ports all over Paris, but there is a long waiting list for an available spot allocated by the VNF or one of the other bodies[9] operating in the

6 The Freycinet gauge is a European standard governing the size of locks on certain canals, established by a law of Charles de Freycinet's programme dated 5 August 1879. It increased the size of the lock chambers to 39 m long and 5.20 m wide, so that they could be crossed by 300 t or 350 t barges with 1.80/2.20 m draught. Consequently, vessels with Freycinet gauge must not exceed 38.5 m by 5.05 m.

7 Île-de-France is one of the 18 regions of France and it is known colloquially as the Parisian region since it includes the city of Paris.

8 Click&Boat is a new-born French start-up dedicated to boats for rent.

9 VNF, Ports de Paris and Mairie de Paris (Paris Town hall).

capital. However, because of the increasing number of boaters, the authorities of Paris are delimitating the areas dedicated to the houseboats. There are more than 30 "ports" in Paris and they take their names from a nearby street or the closest monument. Most of them are on the Seine and can be few hundred meters to few kilometres long. Apart from the famous *Port des Champs-Élysées* with a nice view of the Tour Eiffel, other residential ports have been designed for long-term as well as short-stay moorings along Parisian canals, protected by locks. Located at the foot of the Place de la Bastille, *Port de l'Arsenal* welcomes more than 170 boats all year round[10] since the '80s, when it was converted in a marina after its past as a commercial port. Much smaller than the Arsenal port, *Port de la Villette (Halte Nautique de La Villette*) is located in the north of Paris. It was only in 2008 that this port was designed for pleasure boats, transforming the whole area into a real place of change. The district now offers an interesting range of activities: from a relaxing walk by the water with a view of the marina to a romantic evening on the terrace of one of the nice floating bars, restaurants, theatres, and even a library, moored on the towpath. In summer, it is possible to rent a motorboat (without needing a licence) to explore the canals and the Seine, seeing Paris from a different point of view. This may be why this area is recently awakening local curiosity and it is becoming a tourist destination, despite its distance from the more famous city centre.

Berlin.

Berlin is the most fascinating and contradictory case study. Berliners have always been known for living in uncommon ways: while rents are constantly rising, more and more people have avoided conventional houses, but even the unusual life models adopted so far, such as squats, living in Bauwagen (van or construction wagons), houseboats, tiny houses and even Tipi (teepee) tents are now under pressure.

Berlin has rivers, canals and lakes that together make up around 6.5% of the city's surface that is equivalent to about 60 km2 – not even Amsterdam is so rich in water (52 km^2). Despite this huge surface available, there are only few communities of boaters and none of the city authorities that manage permits for boat moorings can estimate the real number of houseboats. In 2011, only 25 berths were registered with the Berlin Water and Shipping Authority (WSA) but there were about twice as many unregistered houseboats in the city. According to the WSA, nowadays this number is around 60 boats. About ten boats have been docked – some for decades –in the flood canal of the Tiergarten lock, in the affluent residential area of Charlottenburg. According to many, this is the oldest houseboat community in Berlin. Its water residents have recently developed a taste for modern luxurious prefabricated houseboats; protective fences and intricate pathways and hedges have appeared and they have started to pay significantly higher mooring rents. Another dozen or so are moored in the Plötzenseer Kolk near Wedding's Westhafen and on Parkstraße in Spandau. The formerly fourth Berlin residential floating colony at Treptower Park disappeared completely after about twenty years of permanence, when the owner of the area revoked the permissions to the boaters. Only five boats have found a way to join the other existing colonies. A few new berths were set up in Niederschöneweide for some of the Treptower Park movers, while part of this former colony probably joined those "lone warriors" who, according to WSA, are moored in that unknown number at other Berlin banks.

In Berlin there are no designated berths for residential houseboats, owners have to make suggestions to the authorities themselves and be prepared for a long march through institutions and sub-institutions, because unlike in London or Paris, there is no central "houseboat commissioner". Spots directly adjacent to the water are often designated as purely commercial areas in which residential homes are not permitted. Other hurdles are boat traffic, tidal range or nature conservation issues. For all of these reasons the berth must be approved by the respective district, which examines demands and, in individual cases, must also give its consent as the owner of the riverside property. Moreover, the WSA must ensure that the houseboat does not obstruct shipping traffic. The licensing procedure for houseboat moorings is still new territory for the authorities, so the issue is often handled carefully and

10 It is curious to note that in this port to live on board permanently is technically forbidden, but an unspoken deal with the port authorities guarantees to the residents that this rule is not enforced.

with great restraint. Because of the complexity of the procedure, the WSA in the first place recommended to consult an expert with experience in the relevant administrative law when searching for a location and applying for a berth for a houseboat. Despite many enquiries from interested parties, this immense demand does not change the insufficient supply. Apparently, the easiest way to get a houseboat in Berlin is to wait for another owner to sell their boat with its approved berth. However, in order to be allowed to moor in marinas, most of the houseboats are officially licensed as recreational boats – and not as first permanent residents.

Living permanently afloat in Berlin is still something for a few enthusiasts, and authorities do not seem to work in favour of a fast development of houseboating. However, this attitude does not reflect the interests of the flourishing business of pontoon houses and floating homes that is taking place in the whole Germany, with Berlin playing a key role in it. In fact, the annual expo "Boots und Fun" in Berlin is more and more focused on the market of houseboats, with brand new shipyards presenting their houseboat projects every year. It was the first nautical expositions with a whole pavilion dedicated to the world of houseboating in the whole Europe – and, until January 2018, with the 49th edition of the Dusseldorf Boots, the only one.

According to the several platforms of houseboat renters, Berlin has a lot to offer in terms of attractions, with its kilometres of navigable waterways and its marinas surrounded by nature only few minutes away from the city centre. A couple of examples are the Rummelsburg Citymarina in eastern Berlin or the most recent "Humboldt Island" on the banks of Lake Tegel (western side), that offers floating homes as part of an exclusive lakeside new suburb.

Conclusion

The fact that living on board is still an emerging trend is shown by a new urbanization of waterways and the gentrification of their waterfronts. Nowadays, houseboats are a permanent presence in many neighbourhoods in London, Paris and Berlin, as well as many other cities in Europe, and they surely represent a new flourishing business.

Houseboating is a bottom-up phenomenon, but even if the first settlers were mainly spontaneous users, with the rising number of houseboaters a change in the European metropolises started to take place, including top-down actions. New services and facilities arrived on the waterfronts, simplifying life for the boaters. Houseboats are a cultural enrichment not only in terms of living examples of a nautical tradition, but also as tourist attractions. In fact, many little communities of enthusiasts helped their own suburbs to gain popularity, attracting the curious to witness this charming lifestyle, sometimes even spending time on board through Airbnb.

After an initial reluctance, "landowners" had to admit that the presence of houseboats is actually making certain areas safer and more enjoyable, assuring from both sides a re-appropriation of the waterfront, with an improvement in terms of quality of life for the whole neighbourhood.

However, in those cities where the presence of houseboats increased enormously in few years – as it is happening in London – the situation is getting more complex. On one side the inexorably growing demand of mooring space and on the other the claim of protected piers separated by the public walkways created some private "floating suburbs" with entrance gates and security systems: basically luxury floating peninsulas symbolising a fracture with the waterfront more than an expansion of it.

When residential ports started to run out of place and mooring rules got stricter, gentrification complicated things, pricing people out and forcing a lot of boaters to jump ship.

It must be remembered that the first who move on board were very passionate people, with a strong desire to protect their waterways and preserve the right and ability to navigate them. Doing so, these urban pioneers were contributing to safeguarding canals and riversides, improving their accessibility for all. Nowadays those who decide to live afloat are more often pushed by the idea of saving money rather than being attracted by a life on water. Against any prognostic, and London is a clear example, houseboating was not a simple glamour phenomenon, but it is a more complex settling choice that can hide misery under bridges or

in suburban districts as well as housing on the land. Waterways gained popularity during their second birth because they have offered relief from the housing crisis, but without a good management they are quickly becoming another symptom of it (Monks, 2018). As said by Richard Parry, CRT chief executive, to The Guardian, «Canals are almost linear villages, you have services and communities growing along the canal. We have to make sure it is done legitimately and doesn't become an impediment to other users» (J. Meikle and P. Maynard, 2014).

Living afloat is a kind of dwelling – not only a fancy form of slow-tourism – that cannot be ignored as an insignificant market niche anymore. While designing the cities of tomorrow it is now impossible not to wonder about this kind of settlers, and integrating houseboat communities represents a new challenge for architects, designers and urbanists. According to a report on the urban planning potential of living on water, the BBC recently interviewed Koen Olthuis, the founder of *Waterstudio*, an architecture firm specialized on floating homes, and co-author of the book *Float! Building on Water to Combat Urban Congestion and Climate Change*.

> For some time now, Olthuis explained, he has observed that the original defensive attitude of city authorities has turned into support. «They're [houseboats] becoming more interesting to municipalities, because they're treating them as real estate, which generates property taxes». Olthuis envisions a buoyant future for water living as urban congestion increases and climate change brings on stronger rains and more flooding. […] In addition, Olthuis contends […]: «Cities will need to brand themselves and make themselves more interesting, and water living will be just the thing to attract young, high-net-worth individuals… and floating communities will only increase the functionality and flexibility of cities» (Wysocky, 2016).

Experts say that by 2020 at least 60,000 new dwellings will have to be built in Berlin, and they doubt whether the massive demand for new buildings can be met at this rate. Moreover, in the 2018 Revision of World Population Prospects, the UN reports that 54% of the world's population lives in urban areas – and that figure is expected to increase to 66% by 2050, so it is clear that many metropolises are meant to acquire new citizens. Considering that in the city of Amsterdam there are about 5000 people living on board their 2500 houseboats, and more than 8000, in London, the need of living space can be solved – even if only partially – colonising waterways. It is important to highlight the role that houseboats can play in medium-term urban development planning. In a city with limited space, residential boats can satisfy the "right to the city" (Nelson, 2018) of new inhabitants and, at the same time, offer a good opportunity to create exclusive domiciles.

As a consequence of the development of inland waterways navigation systems promoted by the European Community and the spread of the so called tourism "*fluvestre*"[11], houseboating is not going to stop, but it will probably rise its popularity in the name of the "Venice" dream… and it will play a key role on the future urban design of European waterfronts.

11 It is a form of integrated tourism, sharing the same values of slow tourism. The term "*fluvestre*" is a French neologism made by the words *fluvial* (riverine/fluvial) and *terrestre* (landbased).

Figure 1. Narrowboats on Regent's Canal moored along the walkways. On the right top corner: houseboats in a private marina on river Thames.

Figure 2. Houseboats in Paris: (clockwise) *Port de l'Arsenal, Port des Champs-Élysées, Port de la Concorde, Péniche* in a lock on St Martin Canal, the Floating House designed by the Bouroullec brothers.

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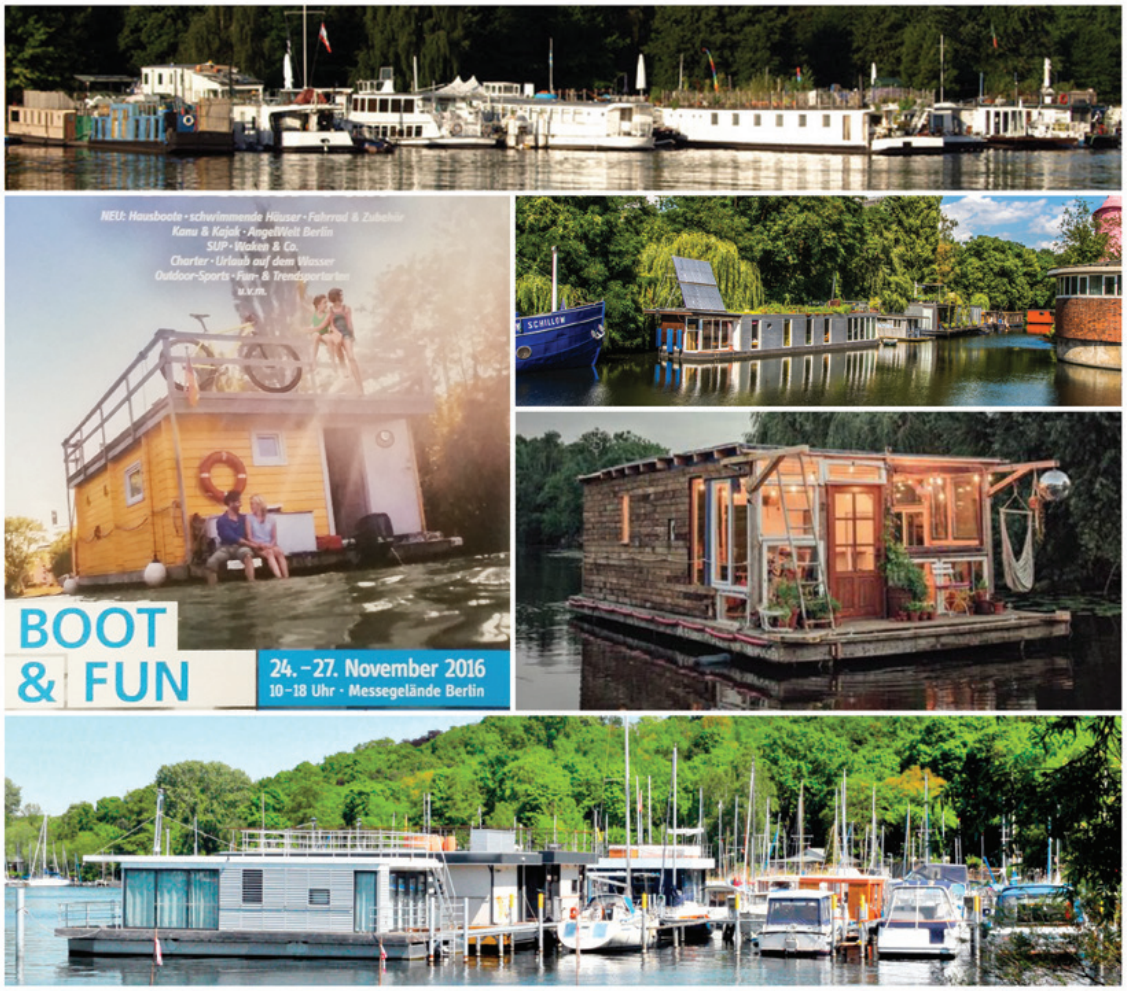
Figure 3. Houseboats in Berlin: (clockwise) waterside moorings in Treptower, Tiergarten berths, Claudius Schulze DIY floating home in Rummelsbucht, Marina in Berlin Brandeburg, Advertisement of Boot und fun 2017.



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Research on the form of urban productive public service facilities and the evolving mechanics analysis: the case of Nanjing city

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Urban productive public service facilities are knowledge intensive and specialized customer service industries (Browning, 1975, Howells, 1986). With the development of economic globalization and the growing depth and breadth of international division of labor among countries, urban productive public service facilities are more and more important in contemporary urban spaces. What is more, the spatial distribution of urban productive public service facilities influences the whole urban form and structure which makes them one of the significant urban spatial distribution components.

This research focuses on the land use of urban productive public service facilities, taking Nanjing city as main research object, collects the primary data of public service facilities in Nanjing and uses the method of quantitative analysis. The analysis of the relations between urban spatial distribution characteristics and land market can provide a basic support platform for the problems that appeared when locating urban productive public service facilities and optimization of spatial forms during rapid urbanization.

From the perspective of self-development of urban productive public service facilities, there is a trend of "internalization" or "de-marketization" to "externalization" or "marketization". When it is reflected on spatial distribution, it needs not only considering the characteristics of the industries own development and market, but also meeting the overall urban space rules. We discuss the evolving mechanics of the distribution characteristics of productive public service facilities in two types of circumstance and wish this research could have contribution to the topic of urban spaces between form and process.

Introduction

Urban productive public service facilities, including finance, insurance, law, banking, accounting, information and intermediary, are knowledge intensive and specialized customer service industries (Browning, 1975, Howells, 1986). The corresponding types of land use are mainly dominated by trade offices and mixed commercial and office buildings. The distribution of urban productive public service facilities in the city is not only related to their own development and the impact of market factors, but also needs to coordinate with other industries and urban functions, in order to be in line with the overall spatial development rules of urban. With the development of economic globalization and the growing depth and breadth of international division of labor among countries, urban productive public service facilities are more and more important. What is more, their spatial distribution influences the whole urban structure which makes them one of the significant urban spatial distribution components.

This research focused on the land use of urban productive public service facilities, taking Nanjing as main research object, collecting the primary data of public service facilities in Nanjing. Using the circle method and statistical method to analyse the spatial distribution structure of urban productive public service facilities, and find the relationship between the distribution and benchmark price of commercial land. By summarizing the current spatial distribution pattern of facilities land for productive service industry, it will provide support for the planning and layout of land for productive facilities in urban areas in the future, and provide reference and basis for quantitative study of urban spatial distribution.

Methodology and data

This study takes Nanjing city as the research object (including Xuanwu District, Gulou District, Qinhuai District, Jianye District, Yuhuatai District, Qixia District, Jiangning District, Pukou District and Liuhe District). Judging from the distribution of service land in the whole city of Nanjing, the land use of all types of public service facilities is decreasing from the urban center to the marginal areas. Among them, the type of land for productive service facilities is mainly trade and commercial mixed-use land, with an area of 285.0 hectares, a total construction area of 1,852.80 hectares, an average building density of 0.325, and an average floor area ratio(FAR) of 2.346.

To study the coupling relationship between land prices in Nanjing and facilities used for productive service industries the benchmark land price of commercial land in Nanjing was selected, and a total of 22 benchmark land price grades for commercial land were used. The price span ranged from 1,300 Yuan/m^2 (Liuhe District) to 36,200 Yuan/m^2. (Land price information source: Nanjing Municipal Bureau of Land Resources). According to the Nanjing commercial benchmark land price information, the distribution situation map was formed using ArcGIS fitting. The city's commercial land price is distributed into two district structures, and the overall trend is circular and progressively decreasing. The highest price of the commercial benchmark land price is distributed along the Zhongyang Road- Zhongshan Road. Three peak points are formed and form the north-south axis structure, and these three points are Zhongyang Gate Area, Hunan Road Area and Xinjiekou Area. Secondary land prices are distributed in the form of fingers, with the old city of Nanjing as the center, and extending to Yanziji, the direction of Youfang Bridge on the 2nd subway line, the direction of Nanjing-Hangzhou Expressway, the direction of the airport expressway and Yuantong Station on the 2nd subway line. The distribution of land prices is influenced by the Yangtze River as a main and sub-space structure across the Yangtze River, and the relatively high land price centers in Pukou District and Liuhe District have basically taken shape.

Based on the circle layer method, this study analyzes the relationship and the law between the floor area ratio of the land use for urban productive public service facilities and the commercial benchmark land price, through spatial autocorrelation, significant test and correlation analysis. Specific steps are as follows:

1. Determine the city center. The central area of Nanjing Xinjiekou Area is located in the geometric center of Nanjing city, where east-west and south-north city main roads meet.

Meanwhile, from the aspect of urban function, Xinjieko Area is also the center of commercial, business, culture and entertainment etc. Among them, Xinjiekou Square is located at the intersection of four central roads in the central part of Xinjiekou, east to Zhongshan East Road (to Zhongshan Gate), south to Zhongshan South Road (to Zhonghua Gate), west to Hanzhong Road (to Hanzhong Gate), and north to Zhongshan Road, leading to Gulou Square. Therefore, Xinjiekou Square is chosen as the center of this study.

2. Calculate building density and floor area ratio based on different land properties. According to the site investigation and data entry, the building density and the floor area ratio of each block of different land use types were calculated, and the productive public service facilities are selected to obtain the spatial distribution pattern.

3. Calculate in circles. Taking Nanjing Xinjiekou Square as the center, with the radius of $l_i = 1 + 1_{(i-1)}$, (i=1,2,...,19, unit:km), the Nanjing urban area is divided into 19 circles. The distance R_i from each circle to the city center is calculated as follows: $R_i = l_{(i-1)} + (l_i - l_{(i-1)}) / 2$, (i = 1 , 2 , … , 19). Due to the reason of data volume, layers 7 to 8, 9 to 10, 11 to 13, 14 to 16 and 17 to 19 are combined to form a new secondary layer. There are a total of 11 secondary circle layers, of which the focus is on layers 1 to 9 in the secondary circle layer.

4. Model fitting. Applying the above model and linear model respectively, a fitting analysis of the building density of public service facilities, floor area ratios, and the layout of commercial benchmark land prices in Nanjing was performed, and calculations are made. Correlation rules are then found.

3 Relationship between land use of productive public service facilities and benchmark land price distribution in Nanjing

3.1 Distribution of urban productive public service in Nanjing

From the view of spatial distribution, the land price distribution of productive service facilities shows a downward trend. The high land prices are distributed in the Xinjiekou area, along Zhongshan Road, Zhongshan North Road and Zhongyang Road. The land price distribution center is westward, and the land price in the west of the old city with Zhongshan Road as the axis is significantly higher than that in the east side of the city. There is less land for production service facilities in Liuhe District, north of the Pukou District of Jiangbei, so the distribution pattern in these area has no obvious characteristic. Compared with the distribution pattern of whole commercial land price in Nanjing, the land price distribution of productive service facilities area has a single-core structure, and the finger structure is not obvious. However, the overall structure is consistent with the city's land price distribution structure, and the center of gravity is biased toward the west part of the urban area. The cross-river development pattern has not been reflected .

The area with the largest area of productive public service facilities is the section with a benchmark land price of 4,000 Yuan/m^2 to 8,000 Yuan/ m^2, which is more than one-fourth of the total land area. The smallest one is from 24,000/ m^2 to 28,000 Yuan/ m^2 ,which is only 1%. The overall distribution trend of the area of land use price for productive public service facilities jumps greatly, and appears the phenomenon of gap (24000-28,000 Yuan/ m^2).

Since there is only one sample data in the 10th and 11th ring layers, the sample data in the 12th ring layer is zero, they are not included in the statistical analysis sample for following analysis, according to the circle method analysis. The land price in each circle is very different. The land prices from the inner circle to the outermost layer show a downward trend. The range of land prices in the middle circle is relatively large, and the range of the innermost and outermost land prices is relatively small.

The overall structure of FAR of land for productive public service facilities in Nanjing is a dual-core structure. The center with high volume ratio is located in the south of Xinjiekou Area and north of Gulou area. The distribution center of high-volume-rate plots tends to be south of the Changjiang Road. At the same time, along Jiangdong North Road to Jiangdong Middle Road in Hexi District formed the sub-center of FAR of land for productive public service facilities.

Analyzed by the circle method, the difference in building density within each circle is

large, and the density distribution of the dominant buildings showed a downward trend. The floor area ratio of productive public service facilities within each circle is quite different. From the innermost layer to the outermost layer, the span of the dominant floor area rate and the floor area rate range as a whole show a downward trend. In the seventh circle and beyond, more than half of the lands with a floor area ratio less than 0.3.

3.2 Relationship between floor area ratio of the land for productive public service facilities and benchmark land price

Using the mathematical statistical analysis method, the Pearson correlation coefficient of the plot ratio of the land for productive public service facilities in Nanjing and the commercial benchmark land price was calculated to be 0.330, corresponding to a p value of 0<0.05, indicating the distribution density of productive public service facilities in the main city area of Nanjing remarkably related to benchmark land price. The coupling relationship between the floor area ratio of the land for productive public service facilities and the commercial benchmark land price in each circle is significantly different.

The above results are summarized to obtain a circle map of the coupling ratio of the floor area ratio of the land for productive public service facilities to the commercial benchmark land price. Among them, the floor area ratio of land for productive public service facilities in the first circle (0-1000m) is weakly related to the commercial benchmark land price, and there is no significant correlation in the second circle (1000-2000m). The third circle (2000-3000m) and the fourth circle (3000-4000m) showed strong correlation and weak correlation in turn. In the fifth and other layers (>4000m), there was no significant correlation, except for the the seventh circle(6000-8000m) with a strong correlation.

Corresponding to the core structure of the urban center zone, the floor area ratio of the land for productive public service facilities and the commercial benchmark land price are significantly weak correlation in the core circle and the shadow circle in the core structure of the central zone. In the subnuclear circle and the auxiliary circle, there is no significant correlation in the layers. There was a significant correlation in the area among Mochou Lake, the Confucius Temple, the Ming Palace, and Gulou District. There was a significant correlation in the area among Yuhua District Software Park and the Olympic Sports Center, south part of Hexi District.

Considering the average value, median value, and normal distribution of the benchmark price of commercial land and floor area ratio of the land for productive public service facilities in the city, we define the commercial benchmark land price of more than 20,000 Yuan/ m^2 as the high land price region, and the floor area ratio below 2.6 is defined as low floor area ratio area. We noticed that for the lands with the high benchmark price and low floor area ratio, the radio of their distribution in the second, fifth, and sixth circle layers are distinctly higher than other circles, that is, the proportion of distribution in the circle with no significant correlation between the floor area ratio of the land for productive public service facilities and the commercial benchmark land price is relatively high.

4 Analysis of the internal and external factors of spatial distribution of productive public service

4.1 The rule of the development of urban productive public service

From the perspective of self-development of urban productive public service facilities, there is a trend of "internalization" or "de-marketization" to "externalization" or "marketization". Its production is based on the deepening of division of labor of cost advantages, and the development of outsourcing activities. With the development of economy, the promotion of marketization and the reduction of market transaction costs, independent market players specialized in providing services such as accounting, marketing, consulting and logistics are emerging in the economic system. The development of externalization, marketization and industrialization of productive public service is the natural extension of specialized division of labor and allocation of resources from the internal enterprise to the internal market. Therefore,

the development of productive public service is not only a reflection of the breadth and depth of its own industries, but also relates to the level of development of other industries that serve as its targets.

With the acceleration of economic globalization and the rapid development of information technology, economic activities have shifted from manufacturing as a center to service as the center. The relationship between the service industry, especially productive public service such as the financial services, logistics, information and so on, and the manufacturing industry, is increasingly becoming more and more close, and show the trend of interactive development. There is a positive correlation between the investment in productive public service and the improvement in the efficiency of manufacturing. The service-oriented manufacturing industry has a positive effect on improving the level of manufacturing efficiency.

4.2 Analysis of Spatial Distribution Characteristics of productive public service facilities

From the aspect of spatial distribution of urban productive public service facilities, the spatial distribution of the types of land use they refer to needs not only consider the characteristics of the industries own development and market, but also meet the overall urban space rules. As previous studies have found, although the development of urban productive public service facilities is closely linked with manufacturing industry, the spatial distribution of the two has significant differences. The concrete manifestation is that although both show significant spatial agglomeration, there is a clear difference in the spatial pattern of agglomeration and decentralization, the spatial distribution of the two has spatial reparability.

The study found out that the spatial distribution of urban productive public service facilities in Nanjing are mainly concentrated in Xinjiekou Area, Zhujiang Road, Hunan Road, Hexi Business Districts and Yuhua District Science Park, only a few scattered in other locations. As mentioned earlier, from the relationship between urban productive public service facilities construction volume and benchmark land price, there is a correlation between the floor area ratio of urban productive public service facilities and the overall distribution of benchmark price of commercial land prices, and the correlation strength different in different circle. Among lots of such urban productive public service facilities concentrated area, the floor area ratio of urban productive public service facilities land use shows high correlation with the commercial land price.

In none correlation circles, where have high land price but with low floor area ratio, can be divided into two types to discuss. The first kind is the shadow area in the downtown area. The floor area ratio of each block are lower than the average floor area ratio in the central area. It is characterized by a sharp decline in density and intensity of public facilities, poor service condition, old and fragmented architectural forms with dispersed locations, and the stark contrast to the public facilities in neighboring hard core blocks. One of the reasons for the formation of shadow areas is that such shadow areas are located in the center of the city near the hard core area and therefore have an expensive land price but have low accessibility because of various reasons, that is why it is difficult to be developed and the amount of construction and quality of architectural form can only be maintained in the state of many years ago. It is consistent with the result that the spatial distribution of high land price with low floor area ratio of urban productive public service facilities. The second kind is the undeveloped fringe and periphery of the city. Due to the leaping development and construction of the city, the degree of construction and development in the non-central zone is not yet fully developed. Some of these areas are under development, and therefore, floor area ratio and land prices are in change. However, it can be seen that there is a strong correlation between those two features within developed areas.

Conclusion

The land for productive public service facilities are mainly including the land for finance and insurance, land for trade and information, and related mixed-use land. This study starts with the analysis of the correlation between the land for productive public service facilities and benchmark price of commercial land, and uses the circle method to study the characteristics in different spatial distribution. Through the analysis of the circle layer method and the degree of aggregation, the floor area ratio of the land for productive service industry use has a significant correlation with the commercial benchmark land price, and the correlation in each circle is different. In the circle where there is no significant correlation between the floor area ratio of the land for productive public service facilities and the commercial benchmark land price, there is a feature of high land price and low volume rate.

Under the background of the new industrialization, the issue of the transformation and upgrading of industry structure needs to pay more attention to the role of the industry of productive public service. Its rational layout in space can not only promote the development of the industry of productive public service, but also contribute to the whole service industry, and this will be more conducive to the optimization and upgrading of the service industry and the overall industrial structure.

The study of urban productive public service facilities in this research involves the study of the correlation between the floor area ratio and the corresponding commercial land prices and the quantitative study of its spatial distribution regular pattern. The analysis and explanation of the relations between urban spatial distribution characteristics and land market can provide a basic support platform for the problems that appeared when locating urban productive public service facilities and optimization of spatial forms during rapid urbanization, and we hope that these results provide a convincing theoretical guidance for guiding site selection of urban productive public service facilities.

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Earth grooves and urban morphology. Canals and alleys nets in Guangzhou, China

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Guangzhou (Canton), capital of Guangdong region in south China, was interested by deep changes during last decades. Still today such changes quickly modify the image of the city, which is risking to lose its identity. This research focuses on morphological changes of Guangfunan area, in the west part of Guangzhou historical part, along the trace of the west city wall, first developed in Tang dynasty (607A.D.).

Guangzhou historic center, named Xiguan District, is made by traditional architecture uniformly distributed and the urban fabric is stratified and recognizable within the compact urban path. In the core of Guangfunan area, a canal named Daguan River was created in 1472 during Ming Dynasty. It provided the Guangfunan area with a convenient condition for trading and transit in both land and seaway, so it was rapidly shaped as a major commercial and residential area in the 15th century. In the later Qing Dynasty, because of the fluviatile deposits in the Pearl River, the Municipal Government covered part of the river and built houses over that course. The layout and street patterns of this area experienced a significant change following this construction. In 1912, the newly established Republican Government adopted a policy of constructing the qilous as part of the urban redevelopment policies, which construction on major commercial streets or on a road along the river side can separate pedestrian and vehicular traffic.

In 1982, Guangzhou was nominated on the national list of the Historic-Cultural Cities, as other historical cities such as Beijing, Xi'an and Nanjing. The municipal government began to establish regulations for the conservation areas. The complexity of the building types and street system makes this area a valuable case study for conducting a research on urban morphogenesis and typological process in southern China.

Introduction

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Methodology

Since Chinese big cities have changed very fast their shape and original character, it is evident the problem of what kind of survey and typological analysis are necessary to return, with an acceptable reliability, the enigmatic scenarios that present themselves to the visitor or to the scholar who travels through the alleys of the city. New cognitive tools are required. It will be necessary to investigate the relationships as well as the artifacts themselves. The relationships between empty and constructed spaces, as well as forms and shapes of architecture. A synchronic reading of the transformations of the image of these urban portions, can give us hints to detect variants and invariants useful for identifying transformative phases and for determining corrective methodologies in terms of safeguard or transformation. It is necessary to recognize the persistence of architectural models over time, models structured by figurative similarities, by uniformity of materials, by consonance of rhythms, by reiterations of solutions.

Forming process

Guangzhou is the largest coastal city in southern China, still in great expansion, capital of Guangdong province (广东). It is the third largest Chinese city in terms of importance and number of inhabitants, after Beijing and Shanghai, thanks also to its proximity to Hong Kong.

In ancient times, the first city built on the current Canton was Panyu (番禺), which means "walled city", founded in 214 BC. The Chinese name of Guangzhou replaced that of Panyu, which remained the name of the areas surrounding the city to the south, up until the Qing dynasty (1616-1911).

The city has always been the destination and landing point of numerous commercial sea routes, which continued for every dynasty and which still make the city of Guangzhou one of the major international ports, together with that of Hong Kong, Shenzhen and Macao.

The first Europeans to reach Guangzhou through the sea were the Portuguese around 1511. Since then the name of Canton has spread among the Europeans, derived from a French transliteration of the Portuguese Cantão.

Canton was also one of the five Chinese merchant ports opened by the Treaty of Nanjing in 1842, at the end of the First Opium War between the British Empire and China. In the early nineteenth century, the rural suburbs were rapidly transformed into flourishing commercial areas, where tailors, painters, goldsmiths and hard stone workers worked. Arose in these years, the need to characterize these new areas developed outside the wall enclosure, which had a double meaning: residential and commercial. The rich merchants move there and the first urban services like schools, theaters and hospitals begin to arise.

The prevalent building typology that spreads throughout the area is that of the shop on the ground floor, with entrance on the main front, and of the residence on the upper floors, with an entrance side by side with the main one or on a secondary road. Around 1850, there was a very rapid demographic explosion of the city outside the walls, which lasted about 40/50 years. In these years, therefore, the phenomena of occupation of the space left free near the temples occur and even within the courts themselves. In 1910 the two areas of ChangHuaYuan community and GuangFu South Road, in Liwan District, take on the name with which we know them today.

In the twenties of the twentieth century, the urban structure of Canton is almost defined. Faced with the pressing demands of residences, public urban spaces and road sections are reduced, with negative consequences also from the point of view of services and hygienic-sanitary conditions, which were no longer sufficient in the face of an enormous increase in population.

The ancient city walls began to become an obstacle for modern economic and urban expansion. The demolitions of the city walls and the imposing urban gates began in 1912, on the orders of the Guangdong military government.

Around the 1930s the city walls were definitively demolished, to make way for modern roads (even elevated at several levels). In recent years, the city, which has already reached the size of a metropolis, is divided into districts and government departments, as it is still organized today. The city becomes, therefore, very dense and the terrible phase of "clogging" of the urban voids and destruction of the architectural features of the Chinese tradition begins, which in the last years of the 1900s saw its maximum explosion, and which continues to the present day.

Japanese troops occupied Canton from 12 October 1938 to 16 September 1945, after violent bombing. Communist forces entered the city on October 14, 1949. Their urban renewal projects caused losses for some residents. The new buildings along the banks of the Pearl River provided homes for people who lived on crafted wooden boats (boat houses).

Deng Xiaoping's reforms, which came to power in the late 1970s, led to rapid economic growth thanks to the city's proximity to Hong Kong and access to the Pearl River. As labor costs rose in Hong Kong, manufacturing companies opened new industries in Guangdong cities, including Canton. As the largest city in one of the richest Chinese provinces, Canton attracts farmers from the countryside who are looking for work in industries and construction sites that the city is now full of.

The industrial and urban expansion has caused profound changes in the countryside near the major urban centers. The river villages, including the city of Guangzhou, until a few decades ago, were dotted with canals, rivers and paths used as main communication route.

Each house had its own small boat moored nearby, but with the development of the car, canals are turned into paved roads and the entire city and countryside river system is completely destroyed. Over the past 50 years the Chinese population has grown so rapidly that there are 20,000 Chinese being born every day and the Chinese population, which was 75% rural at the beginning of 1980, will become 70% urban by 2020.

The change registered in Europe over more than a century, it is happening much faster in China.

The Pearl River Delta is a network region, in the sense that a city alone is not comparable to Shanghai or Beijing, but the set of urban centers that insist on the PRD, can also overcome them in different sectors.

When visiting a "city village" you are absorbed by its vitality, finding yourself in front of a lot of people, small shops, narrow streets, densely built multi-storey houses. All the "town villages" were once agricultural villages. In a short time, the wild urbanization and the consequent

building speculation, have replaced and incorporated the surrounding agricultural lands. The "village in the city" is more than just a physical phenomenon, it is also a social transformation.

When the village is incorporated into the city, a farmer becomes a citizen and in turn attracts other workers to the city, called "floating population". In "city villages", the population density is about 25 times higher than the rest of the city, making villagers quite wealthy, having turned into builders, tenants and entrepreneurs.

The starting point of this phenomenon was the creation of the SEZs (Special Economic Zones) in 1978 by Deng Xiaoping. To cite one of the most significant examples of this phenomenon, consider that the city of Shenzhen, until then was a small fishing village (Caiwuwei), and is now destined to become one of the largest and most dynamic Chinese cities. In a few years, the small village has been incorporated into the swirling urban growth of Shenzhen, giving life to the first city village of the PRD.

Guangzhou is one of the oldest cities in China, surrounded by many agricultural villages, which currently has more than 140 villages within the city, a number destined to increase in relation to the constant growth of the city itself. In these villages, the peasants, or those who own an agricultural or rural *hukou*, can independently build their own homes, depending on their economic possibilities, without limits except to not go beyond the borders on which the previous residence insisted. Citizens, on the other hand, those who own an urban *hukou*, do not have the same building freedoms and can rely only on construction companies, which must abide by the strict rules of the central Beijing government.

The morphological structure of urban villages is marked by canals, alleys, religion, commerce and social model of reference. Even the direction of the wind passing through the alleys, the shadow, the sun and the position of the ancestral courts, have an important influence on the urban morphology of these suburbs.

An example of reading different villages built in close relation to water, highlights the relationship between the built (full) and the water and between the alleys (empty) and the water.

Each channel is lowered compared to the street level even very little and this allows to get everywhere through the canals, which are very experienced by the population and used as urban communication route. There is also talk of a "system of public spaces", since the channels and the margins of the same are understood and experienced as public spaces for meeting and aggregation.

Seen from the satellite, the city of Canton is divided into very compact sections or "parts of cities", with canals, alleys, roads and large, dense villages, almost like our medieval historical centers, but as independent of each other. Some pieces of historical fabric, allow us to recognize pieces of "connective", which represents a portion of memory of those places, founded as original places on the stone, among the grooves of the canals, between the profiles and the colors of the houses.

The combinations of facades, roofs, courtyards, neighborhoods, dead ends, houses, palaces, generate the city almost "spontaneously", forgetting the knowledge of ancient tradition, of the laws of proportion between the parts. What has happening in last decades in many Chinese cities, is an uncontrolled progression of modern technologies and unscrupulous economies, which often lead to the demolition of entire "pieces of historical city" replaced by huge skyscrapers without identity, aimed at respond to functional needs of population growth. The discontinuous and multi-faceted world of the villages and neighborhoods of the city of Guangzhou, such as HuangPu, ChangHuaYuan and GuangFu nan lu, is characterized by the coexistence between the empty (residual and designed) and the built (houses of ancient Chinese tradition and modern skyscrapers). Over time the city has changed itself through expansions, demolitions, substitutions and dimensional, formal and functional transformations of the buildings that compose it, consequently varying paths, places of aggregation and landscape, of the different urban places.

Certain architectural forms, their presence over time, show aspects of a profound identity that speaks to us of a way of building as a way of life to be understood to be valued. This collection of "signs of history" that slowly settles down within a research path, can go back to being available heritage and become fertile to trace new projects through a path of knowledge and documentation, in an information system of new comparisons and

classifications.

In recent years, the city of Guangzhou, like Shanghai and Beijing, has experimented on itself the construction, the transformation, the gradual replacement of parts of cities that no longer correspond to the social needs that, changing suddenly, consequently change the 'overall image of the city, in which elements with very different historical, typological and formal characteristics coexist. The boundaries between inside and outside have dissolved: shapes with indistinct contours interpenetrate and expand, transparencies, reflections, fragility have taken the place of the ancient motionless solidity of a millenary civilization.

Due to an uncontrolled urban development, we often find ourselves in front of places that are temporary mending between incomplete urban fragments. Those places where the aggregation of forms has escaped any traditional control, where violent jumps of scale have broken the equilibriums achievable with tried and tested rules. These are often places in which chaotically interpenetrated and inextricable functions coexist, there is often a growth in complexity of "unresolved urban shreds".

Lignan architecture: the *qilou* type case study

From Ming (1368-1644) to Qing (1644-1911) dynasty, Lingnan architecture, typical of south China, formed its mature local character gradually. Houses were woven into compact settlement patterns, with light wells, courtyards and alleyways tempering warm tropical sun. Traditional materials and colors were blu-grey bricks for walls and ocher tiles for roofs. Numerous commercial exchange with West, defined a very flourishing period for Guangzhou city during XX century. New technologies and new materials influenced on Cantonese architects, who designed contemporary architectures followed the tradition.

The term "Lingnan Architecture" (嶺南 建築) refers to the type of traditional architecture of Guangdong and Guangxi regions of southern coastal China. The prevailing characters of this architecture are particularly linked to the climatic conditions of these tropical, humid and sultry areas.

The term *qílóu* (骑楼), literally "building on horseback", is used to indicate a porch built mainly in concrete, but also in bricks, result of the mixture of elements of Chinese and Western architecture. These are portions of façade built in addition to the body of the existing building, which maintains its traditional formal, distributive, constructive and material characteristics within. These porched structures, in large cities such as Guangzhou, have therefore favored the coexistence of residential functions, mainly on the upper floors, and commercial ones on the ground floors, and today represent an architectural element recognized by the local population as strongly identifying. The recognizability and value of the *qilou,* however, have been strongly discussed and changed over the years, since their first appearance in 1912.

Some scholars say that they are the result of technical solutions for solving problems linked to the tropical climate of coastal areas, guaranteeing protection from the sun and frequent rains. The *qilou* were also a useful expedient to pedestrianize part of roads with high traffic, guaranteeing the use of the space in front of the residences, useful for the development of commercial activities.

In contemporary times, on the occasion of the Asian games held in Guangzhou in 2010, the *qilou* were recognized and chosen as a symbolic element of Cantonese architecture, within the broader "Lignan style", and an impressive survey and documentation campaign was launched for all those still existing in the city, promoting their restoration and functionalization.

The massive destruction of the *qilou*, which took place during the great urban expansions of the last decades, was denounced and opposed by many scholars in this period, giving the question also international resonance.

The qilou, covered walkway typical of the cities of southern China, have been much discussed over the years, because the interpretations about their origins, typological and morphological identity, are many and often also discordant. They have also gone through several stages of decay and have been subject to numerous destructions and replacements for several decades.

The architectures which develop in Chinese contexts that have had strong contacts with Western world, such as the case of Shanghai, Hong Kong and Macao, are the result

of architectural contaminations between East and West, evident in formal details of the elements that compose them, especially on the facade. Some elements that can be read and detected, such as wooden fixtures, come from Chinese tradition, but most of the decorative elements, such as arches, friezes and columns, refer to a neoclassical and baroque vocabulary of clear western import.

The buildings to which the *qilou* were "clinging" were mainly residential blocks that vary in height from two to four floors and that, on the ground floor, leave space for commercial activities. The entire body of the building extends deep into the densely built urban fabric and can even measure more than thirty meters, since there are no regulations regarding the depth of the blocks, but only with respect to the heights on the façade. For the capture of light and air, therefore, light caves and wells are used, since the openings with windows are only feasible on the main facade on the street.

Another characteristic of the buildings with *qilou* is that they extend mainly on both sides of the road, creating systems of pedestrian traffic and symmetrical visual perception.

Conclusion

One of the aim of this research, constantly updated due to many work opportunity in China, is to deep know the historic evolution of the form of the city of Guangzhou, which has suffered many strong events in past and current times.

Furthermore, another purpose of the research it is to document and disseminate the knowledge of these eclectic architectures, the *qilou*, that well combine characteristics of Chinese architecture with those of Western influence, with a critical view to recover and regenerate through the traces of history.

Some scholars state that they are the result of technical measures for the resolution of problems related to tropical climate of coastal areas. In fact, these are porches built in addition to existing buildings, mainly for residential use on upper floors and for commerce on ground floor, to guarantee pedestrian protection from sun and frequent rains. The *qilou* have also been useful expedient to pedestrianize sections of high-flowing roads, ensuring the use of space useful for trade.

In recent times, starting from 2010, when Asian Games took place in Guangzhou, *qilou* were recognized as architectures representative of a Cantonese constructive identity and have therefore become object of study, survey, cataloging and revitalization by scholars, both national and international, supported economically by the Central Government. Current state of conservation of *qilou*, now formally recognized as heritage to be protected and enhanced, does not however reveal the real history that these architectures have suffered over time, neglected for decades by both citizens who lived there, and by scholars.

Certainly, starting from a deep knowledge, this research intends to disseminate and share knowledge and analysis methodologies, mostly common among western scholars, with colleagues in Europe and China as well.

In this city, the history of man, but also that of nature, has left its traces, its architecture, the deep grooves of the canals, and has gradually built a unity, perhaps a character, a tenacious path not still destroyed. This continuity, this practical ability to do that in many cases has been interrupted, giving way to the techniques and materials of the so-called "modern", is nevertheless contained in the architectures that still exist and testify to the materials, signs and forms of culture that has produced them.

Figure 1. 1729. Pearl River Delta and surrounding landscape old painting. (GUP&RC archive).

Figure 2. 750. Engraving. Canton map from the book by J. Nieuhoff, *Descriptio legationis batavicae*. (L. Benevolo, *Storia della città orientale*, Laterza 1988. pag. 98-99).

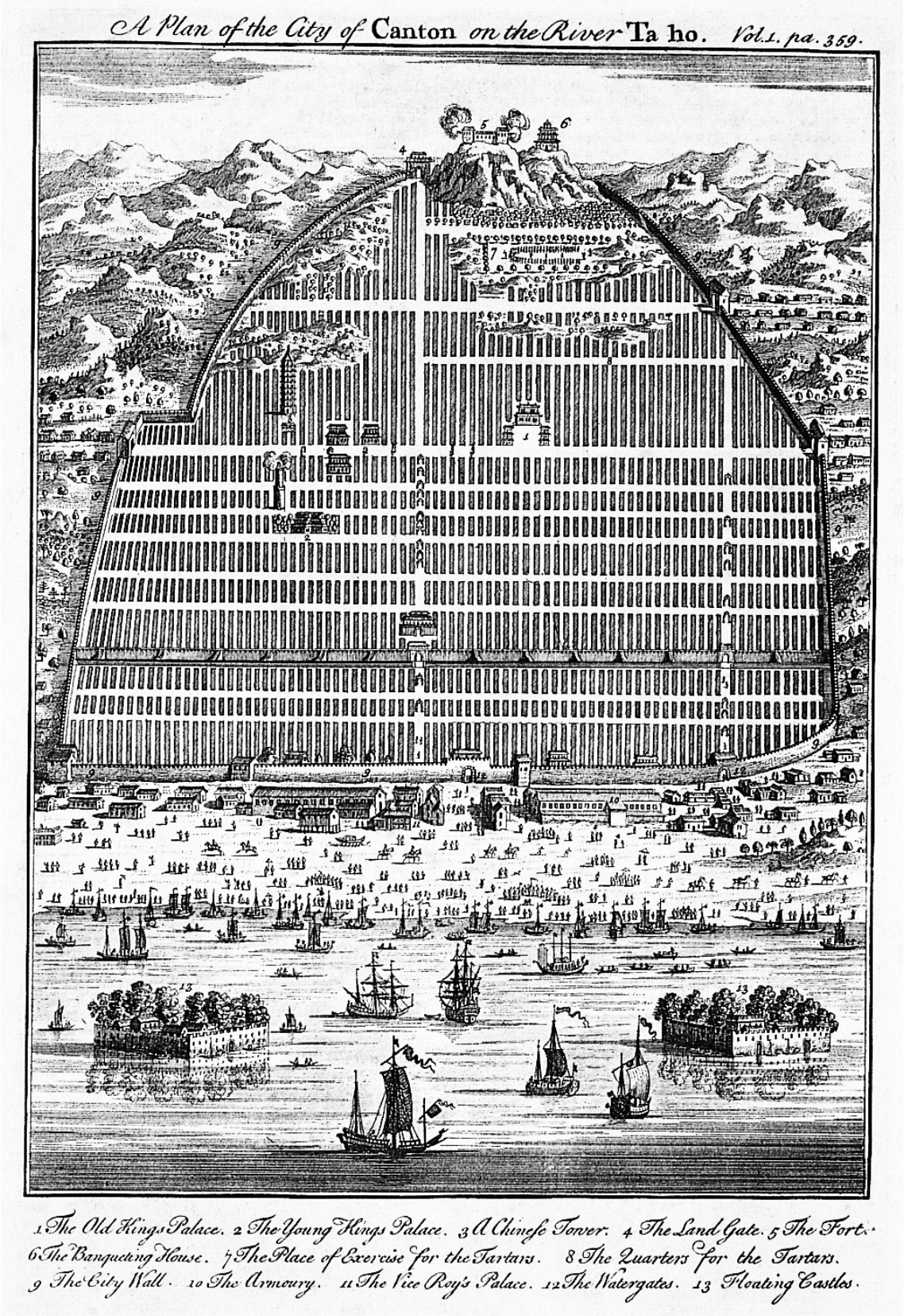

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Figure 3. Abacus of types in Guangzhou. Graphics by the Author.

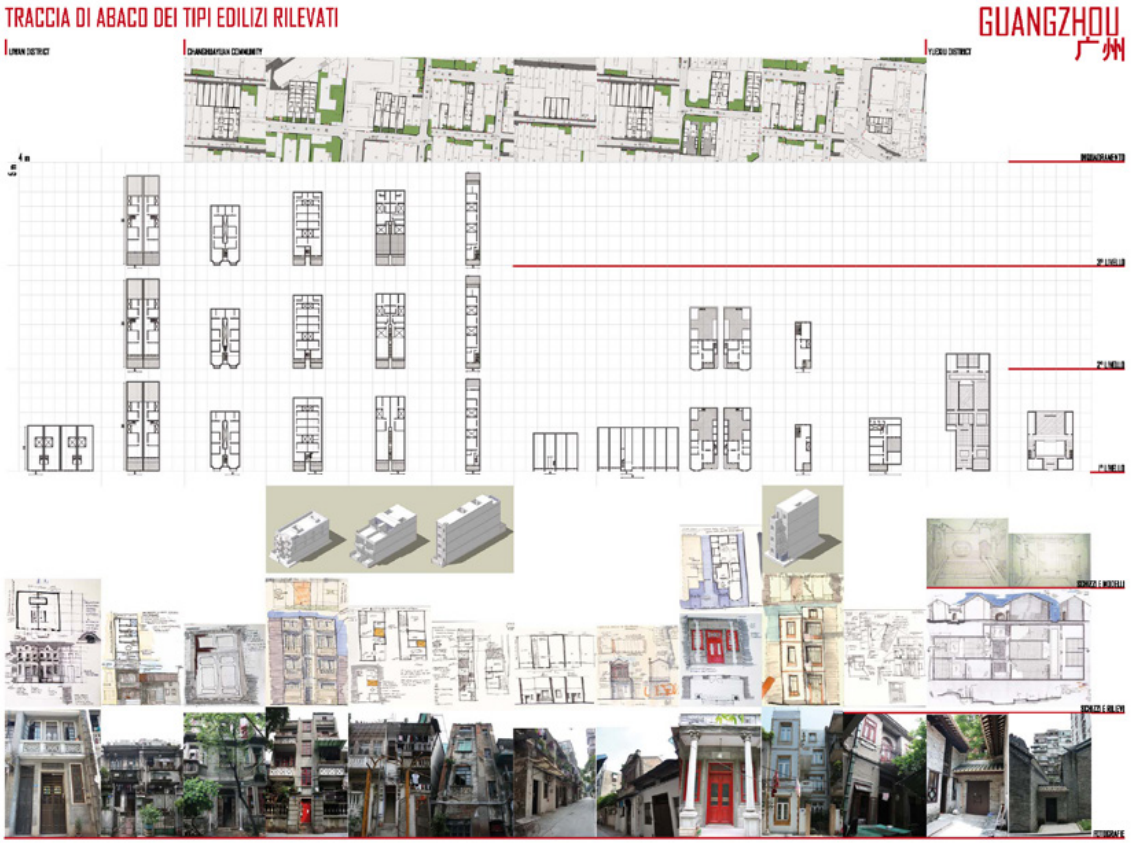
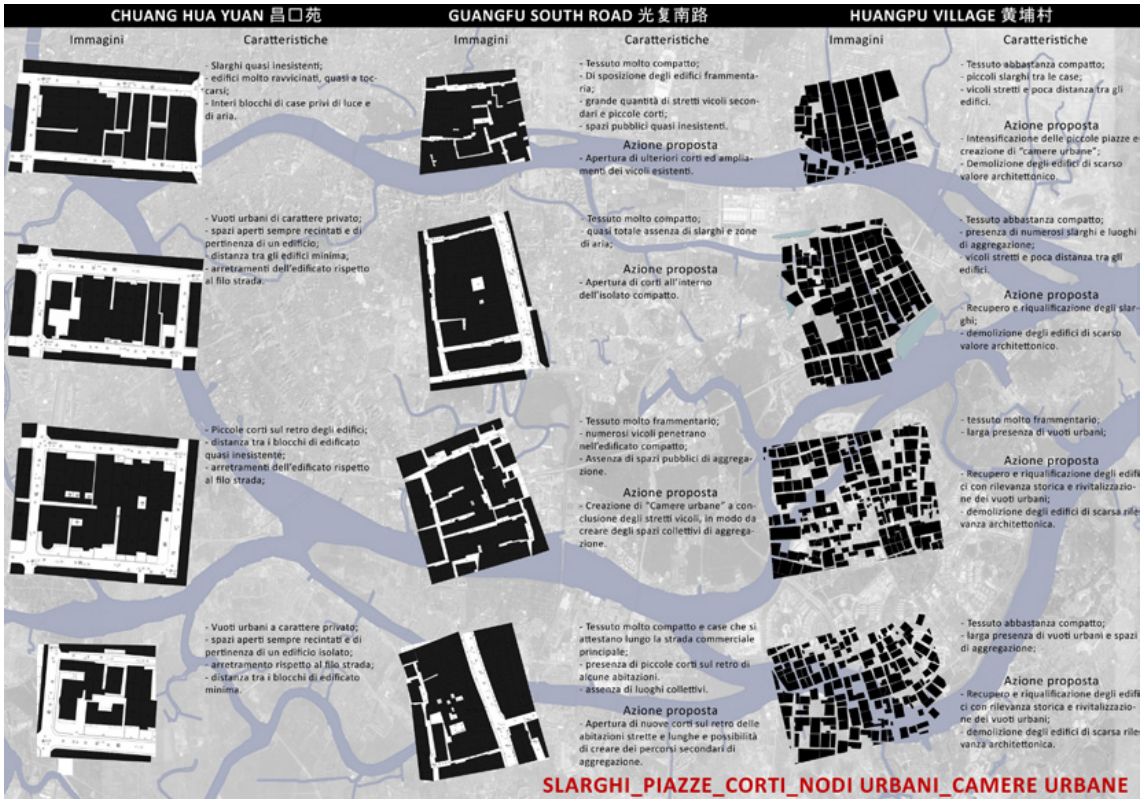


Figure 4. Classification of full and empty spaces in some blocks of Guangzhou city. Graphics by the Author.



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Tirana's peripheries shiftings and their relations with nature

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The uncontrolled extension of cities towards the natural environment is one of the facts we face today at our settlements. Tirana, capital of Albania hasn't been able to escape from this phenomena. Geographically speaking, Tirana is positioned in a valley, surrounded by mountain on the east side and hills which open towards the northwest side. This particular position has influenced in having an urban fabric always surrounded by natural landscape mostly of agricultural use but also recreation.

The '90 were characterized by the political and socio-economic changes and high demographic movements which caused the concentric growth of the city footprint from its center to the so called periphery, furthermore towards the existing natural environments. Areas of the city known as Selitë, Sauk, Linzë or Farkë, known before for their Mediterranean natural environment, have been transformed now days in living quarters.

This paper aims to understand the shifting of Tirana's periphery towards the natural environment and its new characteristics. This will be achieved by studying how the urban morphology in such contexts has been transformed through the last decades, focusing in areas of great significance for the city. Patterns developed, impact of the natural environment to the space composition, involvement and participation of natural environment to lifestyle, or socio-economic relations of the settlements to the environment, will be the main objectives of the study. A better understanding of these developments aims to be used as a promotor in creation of a more functional and efficient transitory space between urban and natural environment.

Background

One of the most important issues as per the urban areas today is the increase of global population which has brought the rapid expansion of the cities. It is foreseen that the 70% of the global population will live in urban areas by 2050 (R.Rener, 2018). This phenomen raises too many questions on two opposite directions (1) The growing dimensions of important cities, their development in terms of the preservation of qualitative characteristis, and in terms of quality of life; (2) The side effect of shrinking areas or their disapperance related also to the inefficient use of resources. Similar procesess have started to be read in the Albanian territory as well in these last 30 years.

While the demographic movement from rural to urban areas is a global trend, in particular in Albania was an even more increased phenomena due to the change of political systems from a totalitarian regime to a free market economy in the late '80-s. To be more specific, the change of the political system was the last pillar falling after the economic system failure. The late '80-s marks for Albania a dysfunctional period of all economic sectors especially of the agricultural one, and effected all population strata especially the rural one. The failure of all economic sectors, and soon after the change of the regime, was accompanied by the uncontrolled demographic movements due to the economic difficulties accumulated. Some of the demographic movements were towards the neighboor countries outside of Albania, but there was also a large movement towards the most important areas of the country which offered much more economic and development possibilities. The central area of Albania, the capital of Tirana in particular was at the center of the population attention. It is understandable that this demographic movement was accompanied by a territorial development change where several development models were introduced, formal and informal ones. It is important to understand that such developments were made in a period where the properties were still owned by the state, whom was found uprepared to this new population trend, and high pressure of construction. Therefore, due to causes such as (1) The lack of private property laws; (2) The incapacity of the new state to deal with the new phenomena and the movements intensity, the territorial development started to have a more spontanious character which continued for many years.

The emerging phenomea in terms of territorial development were (1) The fast urban filling and (2) The development of new areas with formal and especially with informal settlements. These are problems which have caused enormous problematics, city of Tirana still faces today. As per the informal areas, problematics of such developments are related to the lack of integration and functioning of these areas per se, the obstacles to new developments, the conflicts between new inhabitants and land ownerships. Although through the latest years, there have been some laws passing as per their solution, it is forseen as in many developing countries, the informal settlements is a delicate problematic which would require a long process, and a long period of time to get settled. As per the formal buildings, although through the process of design, they are mostly separate developments, not based on a regulatory plan but basicaly related to the efficient use of each property. Such development, bringing also a larger intensity causes even more problematics to the peripheral (peri-urban) areas.

In terms of natural resources including those found in natural and semi-natural environments, both formal and informal developments have had their negative effects. In the above described social and legal conditions, the informality was developed filling the spaces and invading the agricultural land, both of a semi-natural character were transformed from productive and recreational spaces to a build environment, of course by transforming and having a strong impact on the new peripherial areas of the city. It is important to emphasize that the problematics to the natural environment are not related just to the land-use transformation, but also to all the economic and social effects they do have to the city population.

Starting from 2014, there was a large territorial reform which intented to centralize the control of the territory into less municipalities. On the same period of time the General National Spatial Plan was introduced which implemented the main strategies for the National Territorial Development. The natural environment, the preservation and development of natural and semi-natural environmet, efficient use of all resrources, the agricultural development, and

the perservation of autoctone products together with the rural redevelopment were some of the priorities of this National Strategy.

After the General National Spatial Plan, the General Local Plans (Previews Regulatory Plans) started to get implemented. The General Local Plan of Tirana (GLP TR30) was introduced and came into force in April, 2017. The GLP TR30 has many interesting proposals, but as per the stopping process of further enlargement of the city footprint or in terms of urban-sprawl controll, it introduced for the first time the implementation of the Perimetral Park (Figure 1).

What before was known as a yellow virtual line, the boundary between the urban and rural was substituted by a fisical green line - the *Perimetral Park* also known as the *Metrobsco*. In terms of urbanized territory, the city remains also the same, but brings a much more densier area.

It is important to emphasize that nowadays, the city of Tirana is still an attraction to the local population. The trend of movement form other areas to the capital still continues, and as per the GLP TR30, based on the trend of today, by 2030 Tirana will reach a population of 1,072,000 inhabitants, from 850,000 inhabitants nowadays (Source: Municipality of Tirana).

While in the global framework keywords such as sustainability, environment conservation, efficient use of resources, ecosystems and habitat preservation, green infrastructure, air pollution, urban forestry, resilient cities and quality of life in the cities, are at the center of the debate as per the urban development, it is important to understand the developments of our cities and territory. It is our responsibility as planners to be able and understand these processes, and propose models which define balances between build and natural environment in such a way to introduce and preserve a qualitative life in the city.

Methodology and Results

The mapping out is used for understanding the dynamics of the build environment such as (1) The footprint enlargement; (2) The shifting and transformation of the peripheral areas; and therefore, the established relationships between the perimeter of the footprint to the territory. Through the overlapping of several important layers such as topography, water systems, and the build environment footprint, the relationship of the city with this strong elements, moreover natural elements, could be interpreted. Problematics of each development phase through the years could be identified in terms of their relationship with natural or semi-natural spaces. In particular, in support of this study the shifting of the peripheries in terms of period of time could be interpreted to a better understanding of the dynamics of each period especially that of the last 30 years.

For a better understanding of the characteristics of the peripheral areas of the city, case studies have been chosen. Since different forms of peri-urban models have been developed during these last 30 years, including formal and informal ones the selection made intended to represent all the different morphologies in terms of build environment and natural environment or landscape.

Maps and orthophotos of different periods of times, starting from the '80 to nowadays are interpreted in terms of territorial transformations, change of the land use. For each case study, a data base of maps is created, including map of Central Technical Building Archive (CTBA); (*Original: Arkivi Qendror Teknik i Ndërtimit)* map of the '80s; and also, orthophotos from the years 2005; 2007; 2015; 2018. (Source for images: www.geoportal.asig.gov.al).

Case Study 1

Territorial Transformations

This area represents the southern part of the city previously with an agricultural land use and olive groove cultivation. It has been known before as the area of *Selitë*, and has been administrated by *Municipality of Farkë* for several years represent a hilly territory which has always been part of the city landscape. This had represented the rural territory adjacent to the recreational areas of the city such as the Park of the Artificial Lake, Botanical Garden and City Zoo. As it can be interpreted from the maps, 2005 marks the period of the area

transformation from agricultural use to build land use. The transformation and the filling process of the area with residential buildings has been very fast since then (Figure 2).

Morphology

The filling process represent a uniformed one all over the hilly territory based on 5-6 floor units where what is striking is the efficient land-use. The morphology of narrow streets and communicative axes, morphology of buildings does not contribute in building a relationship between natural and semi-natural elements with the build environment, on the contrary, it is just substituting it.

Future Land Use

Nowadays, the area represents a developing area within the *Metrobosco* and part of the urban area.

Considerations - This area in particular represents one of the strongest transformations due to its previews land use characteristics and the interventions made. Even today still is represent an important area due to the existence of recreative areas of the city and its presence in between of *Metrobosco*, Park of the Artificial Lake, Botanical Park, City Zoo and furthermore existing water systems.

Case Study 2

Territorial Transformations

The area is placed in the northern part of the city, in the spatial continuity of the main Boulevard of Tirana. Representing a previews services area for the city on one side of the river, and agricultural land on the other side, it is chosen due to the presence of the Water System. Tirana Riverbed crosses the area following its natural course. As illustrated, in 2005 the area is almost totally filled with informal settlements (Figure 3).

Morphology

The development of the build environment, is a continuous pattern represented by almost the same cell - family home in the center of the yard. The buildings are placed in almost regular lines, due to the existence of water channels.

Considerations

This is one the most important areas in the new development foreseen for Tirana. As the northern boundary of the city is defined by Tirana River and Metrobosco, this represent one of the areas of future developments for administrative, economic and living area. There is already a study proposed by Grimshaw Architects who have worked on the masterplan. Although a park is included in the area, the intensity is at high levels.

Case Study 3

Territorial Transformations

The third case study is chosen closed to one the National Parks of the country, *Dajti Park*. It is very clear that during the first transitory period of time the previews agricultural and industrial land use had started to be invaded by informal settlements, but the interventions were bigger and caused much more environmental damages later with the formal building's development (Figure 4a; 4b; 4c; 4d; 4e; 4f).

Morphology

The development of the build environment, is a continuous pattern represented mostly by linear buildings organized most probably according to the property shape and somehow the terrain since their composition in the territory doesn't seem like follows any logic. The high coefficient of land use and the height of the buildings, varying form 5-7 floors, doesn't take in consideration the high presence of the natural environment.

Considerations

The constructed area are formed already and not too much could be done to change the relationship between build and natural environment. This particular area of the city is quite important as it contains the main entrances to the *National Dajti Park* for the city inhabitants. Furthermore, the area seems to be just at the boundary of the city footprint and within the *Metrobosco* perimeter. A more gradual transformation of the space from a build environment to a natural environment could be a much more well-organized structure in terms of psychological effect and orientation.

Case Study 4

Territorial Transformations

Unlike the first three cases, the fourth one is selected to be within the boundaries of Tirana Municipality, but outside of city area. A formal rural area dedicated previously to agriculture, this area has been known for its vineyards and wine production. Nowadays is known for the luxury residential complexes which are being developed in Tirana. Around the year 2010, the chaotic development of the city caused the developers to orient their attention towards areas with higher environmental qualities and a new product in the market - individual buildings. Since then, this is an area in continuous construction (Figure 4g; 4h; 4i).

Morphology

The residential complexes are at different scales and different programs. This one in particular contains around 150 elite villas with a considerable construction surface starting from 300 m² to 700 m². The villas do develop in 3 floors, and somehow follow the terrain and internal infrastructure. In terms of this particular research, the surrounding concrete walls of this kind of developments are an interesting finding, not only in this particular complex, but also in every model implemented.

Considerations

These areas are adjacent to semi-natural areas mostly with an agricultural use and have had a previews agricultural character. At a first sight they seem to offer more connection to the nature and agriculture to its inhabitants, but they do offer a model where this connection is found mostly in the geographical position, therefore it's not a tendency in the residential model to be connected to the territory, as they do build boundaries between them and the surrounding for safety reasons.

Forming process

This particular study aims to analyze the dynamics and drastic changes in the positions of peripheries, and also the urban and spatial morphology of the new developments in the existing peripheral areas of Tirana. By peripheral areas it is intended areas positioned basically closed to the actual city boundaries, closed to natural and semi-natural environments, and closed to the future Perimetral Park. Due to their continuous shifting, the term periphery is being used rather than peri-urban which defines a more transitory space between urban

and rural. Although it is important to emphasize that with the use of term "periphery", no negative content is being conveyed. It is important to emphasize such think due to the negative effect and relation to crime has sometimes has the use of such word.

The main focus of this analysis is understanding the possible connections between new developments and the surrounding territory, for later developing strategies and/or development models if necessary. The city development has been self-constructed and therefore very spontaneous the last 30 years. It has had a main focus on transforming new territories, it has been no focus at all towards the communication with natural surrounding elements. This statement could be better illustrated by the unified development models throughout the territory without any consideration of the environment presence, and without any consideration of the city limits, furthermore there has never existed any tendency of achieving a smooth spatial transition through the movement city center - periphery - rural area not only in terms of physical environment, but also in terms of action and interaction with the surrounding territory.

The implementation of the Perimetral Park, *the Metrobosco* by the GLP TR30, is seen as a strong potential not only for stopping the urban-sprawl, but also as an intervention to the territory which could change the thinking towards the morphologies developed through the perimeter of the city. Such physical boundary of the urban area is seen as a potential in having a more defined vision towards the better structured city and a higher quality of life in these areas if planned and implemented properly. In terms of urban theoretical framework, new theories and methods have emerged during the 21st century. Among these new theories *Landscape Urbanism* could be brought up, a theory which considers the landscape a main medium for shaping the nowadays cities. Rethinking the city through the lens or lenses of Landscape – is the new moto represented by Charles Waldheim in his book *Landscape as Urbanism*. As a medium which offers resilience to the future developments, the Landscape could be a strong element guiding the city further development.

Conclusion

During these last years a chaotic development has been emerged through the city of Tirana. Many problematics have been arisen from informal processes, but the high pressure of construction from developers has caused many problematics which haven't been managed properly by the local authorities' actors. One of the main important elements the city is lacking is the preservation of natural environment over time. The city is still in time to implement strategies for solving such issues, but this requires a lot of will from all the actors involved in planning and developing. The aim of this particular research is identifying the construction character in the most vulnerable areas in terms of environment, understand how they have been transformed, and through their morphology description, understand the approach towards natural elements.

The new GLP TR30 proposes new areas of construction, but also other areas such informal areas have started and could be object to further developments. This is study aims to raise the level of sensitivity to the new morphological forms of future developments for placing a better communication with the surrounding for achieving a more sustainable development in terms of resources use, more qualitative environment, strengthening the economy based on territory products, and offering in general a better quality of life.

Figure 1. *The territory and the city footprint through the years;* a. Strong Elements of the territory; b. City footprint in the years 1917, 1921, 1937, 1957, 1987; c. City footprint in 2018 and the Metrobosco footprint. (Source: Maps elaborated by the I. Branko)

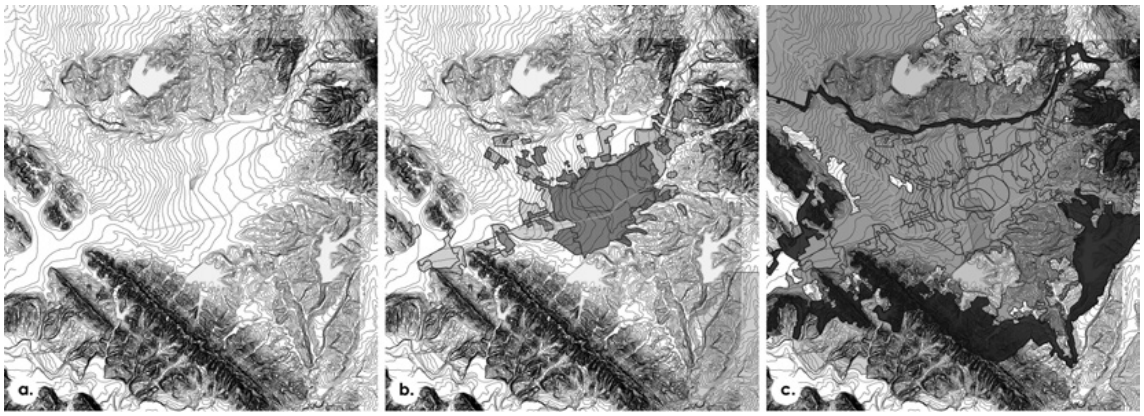


Figure 2. *Territorial Transformations in Case Study 1*; a. Map of the area from CTBA; b. Map of the area in the '80s; c. Orthophoto 2005; d. Orthophoto, 2007; e. Orthophoto, 2015; f. Orthophoto, 2018.

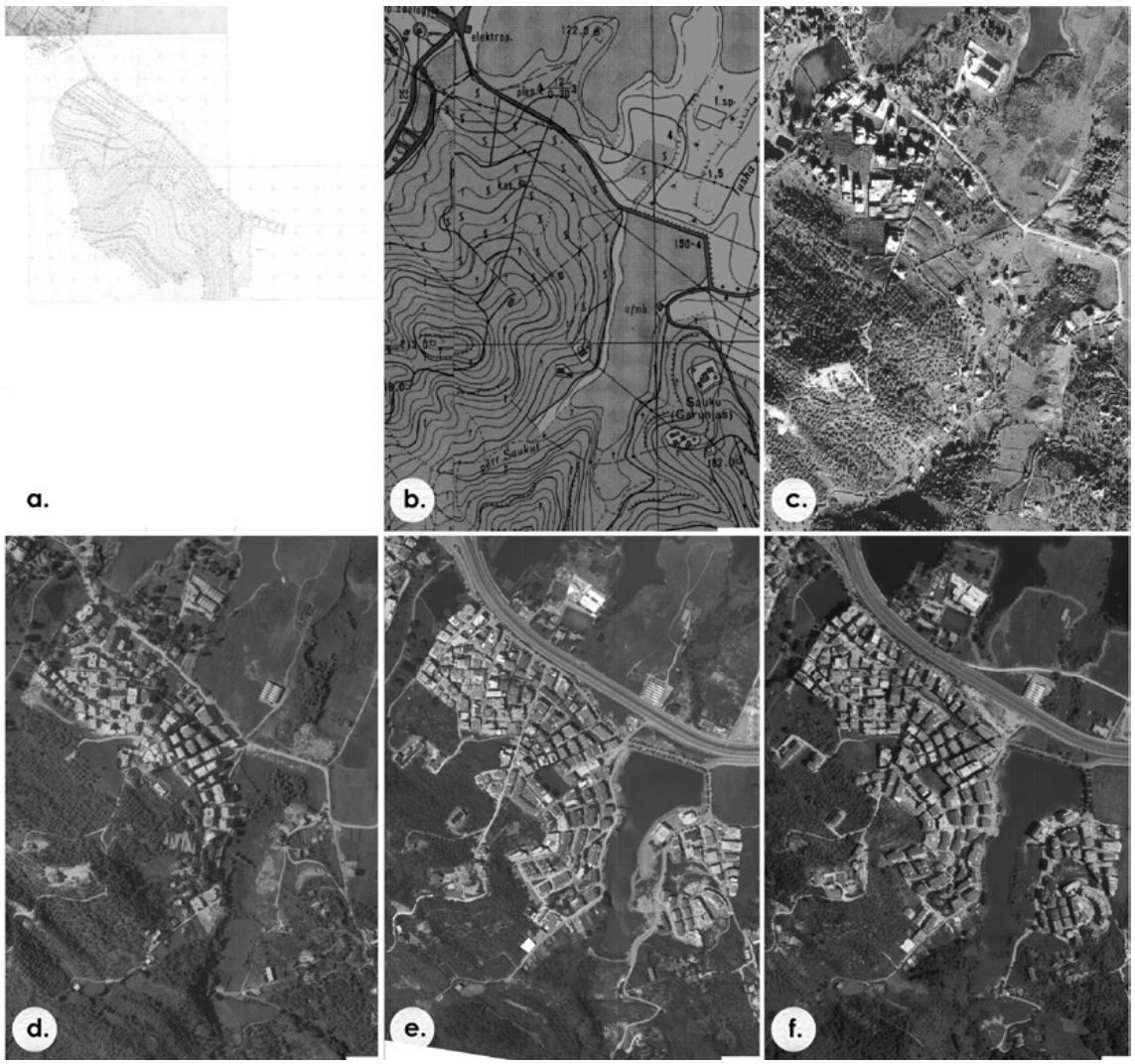


Figure 3. *Territorial Transformations in Case Study 2*; a. Map of the area from CTBA; b. Map of the area in the '80s; c. Orthophoto 2005; d. Orthophoto, 2007; e. Orthophoto, 2015; f. Orthophoto, 2018.

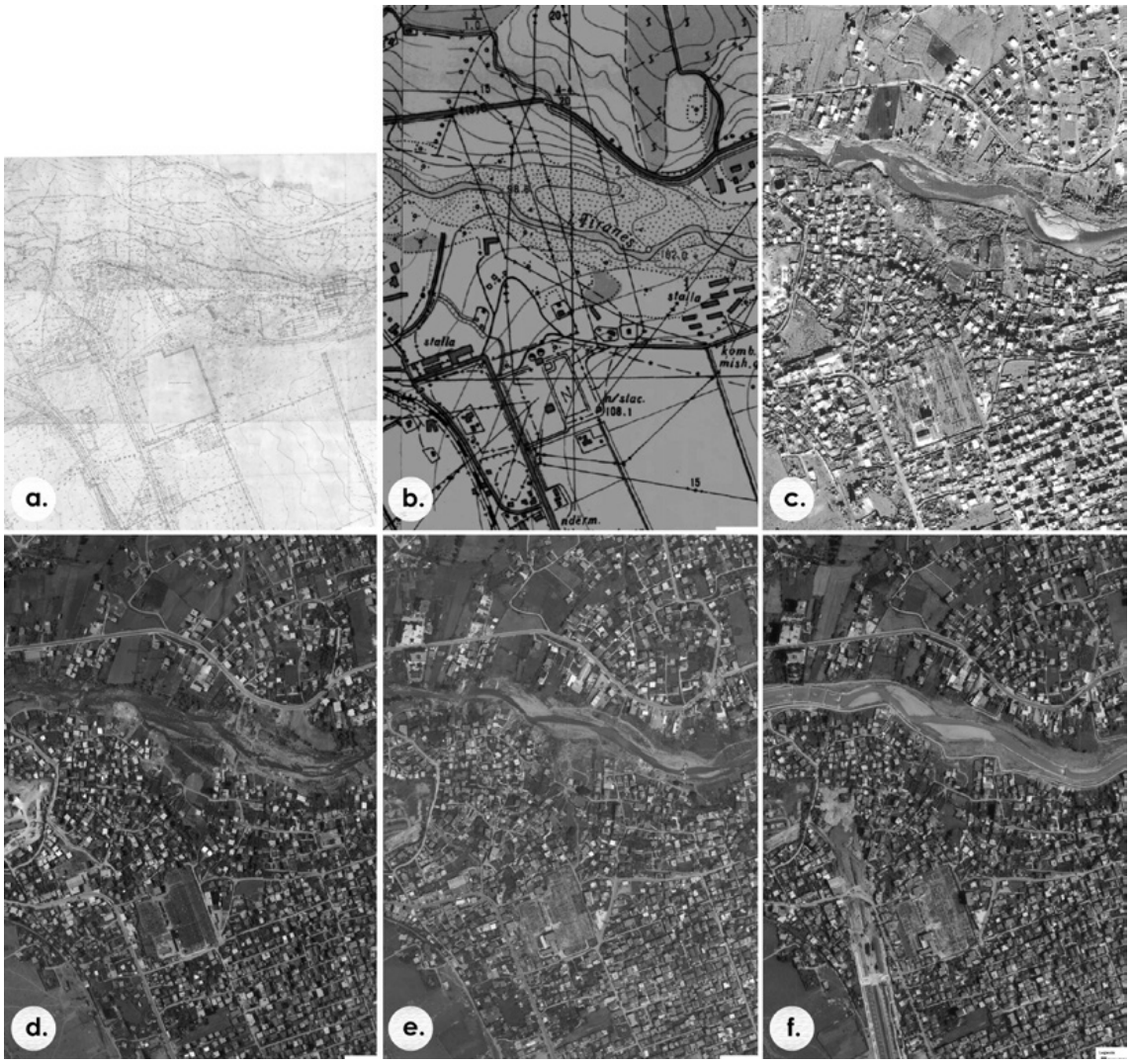
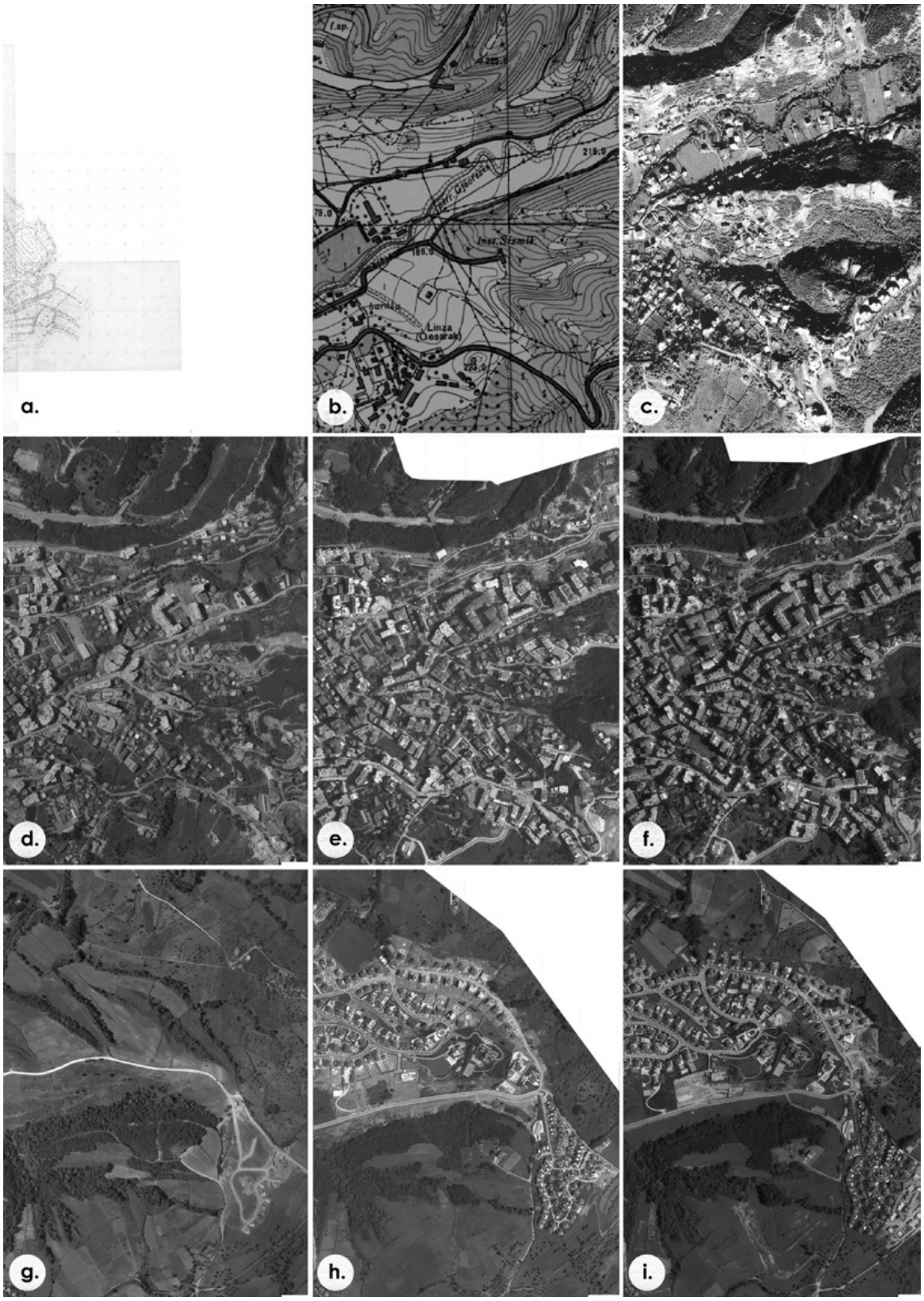


Figure 4. *Territorial Transformations in Case Study 3 and Case Study 4; a. Map of the area from CTBA; b. Map of the area in the '80s; c. Orthophoto 2005; d. Orthophoto, 2007; e. Orthophoto, 2015; f. Orthophoto, 2018; g. Orthophoto, 2007; h. Orthophoto, 2015; i. Orthophoto, 2018*



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The hydrographic system as an urban structure in the plain north of Naples

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The territory of the plain north of Naples that stretches between Lago Patria, the basin of the regi lagni and Volturno regions up to the province of Caserta has represented, in recent decades, the space of natural growth and expansion of the residential, infrastructural and productive tissues of the city and the province of Naples towards the countryside.

Characterized by a particular homogeneity and regularity in the geographical, morphological and orographic aspects, the dynamics that have characterized the transformations of this area, from the post-war period until today, have been the expression of a "oil stain" growth, compared to the what the planning techniques and tools have tried to build a bank to make up for the lack of a general vision and a collective project by politics and communities, as well as the spontaneism of the phenomenon of rampant abusiveness.

The current urban structure is presented as the overlap of a series of mutually indifferent systems: residential, infrastructural, productive and rural tissues coexist without integration, in the absence of shared public space. The study therefore aims to investigate the elements and systems of the historical structure of these territories, in order to highlight the reasons related to the use and the shape of the soil, and in particular to its relationship with the hydrographic system of surface waters, regimented in the past through the grandiose work of the regi lagni to make the marshy lands cultivable, so that the recognition of these reasons in the morphology of these territories can be a guide for possible future transformations.

Introduction

The *ager campanus*, the area of the plain north of Naples between the territory of Campi Flegrei in the south and the basin of the Volturno river in the north, has represented, in recent decades, the place that more than any other, in Campania , was the background to the dynamics of a bad, as unconscious and coarse, land management. Both in public policies and in the behavior of private citizens, we have witnessed a material devastation of these lands, perpetrated through rampant abusive, privatization and excessive overbuilding with the creation of real *autistic enclaves*[1] with respect to the surrounding territory, degradation and abandonment of agricultural and industrial production areas, up to the recent, very serious environmental and ecological frauds.

Starting from the second post-war period, the foundations were laid for «an uncontrolled and often abusive expansion, which prevents non-professionals from seeing the immediate recognition of the original urban centers» (Di Mauro, 2009: 31-36). This phenomenon, thanks to the "tourist frequentation"[2], saves the Campi Flegrei, the islands, the territories of the Vesuvio coast and the Sorrento peninsula, and probably this "forced" perimetration intensifies its intensity. Above all, however, it is not only the recognisability of the historical centers that has been affected, but that has been concealed is an entire territorial structure, of large scale, which for centuries has represented a real spatial "grid"[3] to which the structure of these predominantly rural areas has been structured, thus characterized by small towns and large open spaces, held together by a topography of a territory that does not know particular orographic limits, but which from time to time becomes substantial in signs, alignments, large axes, canals, representing the elements of a great unitary design built by man to inhabit and cultivate these places. In particular, from the observation of historical maps, the constant presence of the elements of water, basins or canals emerges as fundamental elements for the construction of the design of the territory.

Finally, I think it is important to highlight that when we talk about such devastations due to the known phenomena of the last decades, we are not interested in investigating the causes, but in knowing and recognizing the signs and elements of that open order, still visible, whose plot refers the dynamics of growth and expansion typical of the *civitas augescens* and *de-lirante*[4] that the Romans first experimented with in the "architectural foundation"[5] of these campaigns.

Methodology: cartographic research

A. Rossi, speaking of the methodological problems of urban research, states that: «this need arises above all from the need to establish the specific object of the research; that is, to specify a series of questions. The first and perhaps the only guarantee for this to happen - and therefore that our theories correspond to reality and are not the arbitrary accumulation of details and often artificial deductions - consists in starting the research on a concrete experience and then, in the our case, in the empirical reality of the city in which we live» (Rossi, 2012: 259-268). Having lived for many years in these territories, I have always felt from others, and perceived with my own sensitivity - first as a layman, then as a student and an architect - the feeling of a substantial loss of identity, form and value of these areas, which served as a counterbalance to the corresponding growth of private cubic meters, of residential fabric, of the absence of an integrated public space, of impoverishment of the fabric and of the

1 Reference is made to the reading of the area in F. Rispoli (2013), a cura di, *Forme a venire - La città in estensione nel territorio campano*, Gangemi Editore, Roma, reported in full at the end of this text.

2 Reference is made to the essay by L. Di Mauro, *La perimetrazione dei centri storici in Campania*, written on the occasion of the request by the Department of Urban Planning of the Province of Naples to perimeter the territory of the historic centers of the ninety-one municipalities in the province.

3 We refer to the grid as opposed to that of the chessboard, as defined by V. Pezza in the recent essay *Casa, Città, Territorio - La griglia e la scacchiera*, present in the bibliography.

4 M. Cacciari, in the essay *La Città*, describes the substantial difference between the Greek conception of the *pólis* and that of the *Roman civitas*: while the former can not grow beyond its walls because it is the seat of the Greek *éthos*, *civitas*, founded on the right, tends to always expand beyond their own borders.

5 Reference is made to the title of the text by M. Savini, reported in the bibliography, which carries out an in-depth study of the settlement principles of rural areas in the Bologna plain.

agricultural economy. To indicate the substance of this "lack", I considered it essential to reconsider the cartographic material available from the end of the seventeenth century to the second post-war period.

From the methodological point of view, I then proceeded to the research and comparison of these materials in order to detect the original plan structures on the vast scale, and their relationship with the substantial transformations of the last decades. Moreover, having investigated through other studies the importance of waterways[6] in structuring the structure of the territory, I wondered if even in this case the hydrographic system had contributed substantially to its physical form.

Forming process

It is interesting - even if not too surprising - to observe how, in a period of over two hundred years, the presence of the *primary elements*[7] of such a vast territory can be detected almost immutably: the regular paths of the Roman centuriation, the small towns rural, the basin of Lago Patria, the ancient *Clanio*, the coastline and the marsh of Licola: among these, elements that order the territory to the vast scale and elements that cross it[8], joining points or regimenting the waters. All parts that establish relationships with others as the nodes of a large territorial grid capable of governing the construction of the territory for a long time.

Since the mid-eighteenth century, modern cartography, with the famous *Carta del Duca di Noja* (1750-1775), begins to widen the gaze and to conceive the reality of the system of relations of the city of Naples beyond the canonical orographic borders to it iconographically linked in previous centuries: «the season inaugurated by the Duca di Noja with his map [...] sees the rapid succession of increasingly detailed and extensive representations of the territory, finally understood - just as the Carafa had indicated - which indivisible context of the city and the countryside, the potential for expansion of the urban fabric is highlighted, now available for a program of interventions on a larger scale, which will actually see the light in the Napoleonic age» (Buccaro, 2006: 21-32). It is with this charter that we therefore begin to consider the necessary relationship between cities and surrounding rural areas, which looks at the open territories of the countryside both for economic and fiscal reasons, and for the possibility of expansion of the urban system.

All the previous cartographic production mainly provided qualitative information about the distances or the approximate orographic conformation of a given area. It is however important to observe how the representation of waterways has always been an essential element in the description of these territories. Starting from the *Carta di Terra di Lavoro* by Blaeau in 1665 the coexistence of the Volturno basin with that of the *Clanio* with its branches, and of its mouth in the Lago Patria, in correspondence of which in the II sec. B.C. the city of Liternum arose, strongly characterizing the description of these places. The ancient toponym *Li Coli* (the ancient area of Licola) clearly indicates the predominantly marshy nature of these lands, which the Romans already, with the foundation of the ancient Liternum, had reclaimed and made cultivable. At different scales, in all subsequent representations, albeit with a series of approximations and inaccuracies, the basin of *Clanio* and its *lagni* with its mouth in *Lago Patria* appear as persistent and changing elements in form and size: observe the *Carta della Provincia di Terra di Lavoro* by Rossi - Canelli of 1714, the *Carta di Napoli e Gaeta* of 1716 or the *Carta di Terra di Lavoro and Molise* by Zatta of 1783, from which it is possible to detect the transformations carried out on the territory thanks to the grandiose

6 Here reference is made to the studies on the coast of Vesuvius contained in the text by V. Pezza (2005), *Città e metropolitana - Vesuvio infrastrutture territorio*, reported in bibliography.

7 Here we refer to the definition of *primary elements* given by Aldo Rossi in *L'architettura della città* , with regard to those fixed elements that do not depend on economic laws but only on their form, and try to establish a logical parallelism from the urban scale to the territorial one. L. Coccia writes in this regard: «Since the 1960s, Rossi has understood that the future of the city is in the areas of expansion and that the new design of the urban form can only be inscribed in the more general design of the territory, within which a system of distance relations will hold together a multitude of solitary monads that already began to manifest itself in those years and which would have exploded in more recent years » (L. Coccia., 2018: 19-31).

8 See the numerous essays by V. Pezza written in relation to the relationship between territory and infrastructure, between topographical surveys and *important* but not *structural* elements of the territory, and in particular to *Il Crater, il Vesuvio e Manhattan* in V. Pezza, *Città e metropolitana* (Napoli, 2005)

work of the *regi lagni* of previous years.

At the end of the eighteenth century a new approach was therefore established, which could be defined as scientific, which for the first time tries to codify a register of signs and languages suitable for the description and interpretation of the facts of the vast territory: the foundation of R.O.T. in Naples[9], with the extraordinary work carried out by Rizzi Zannoni, he laid the foundations of modern cartography, and in the years 1793 - 1794 the *Topografia dell'Agro Napoletano* and the *Carta del Littorale* represent the first documents on which to verify the nature of the territorial system. north of Naples. Starting from these years, a series of ever more precise and specific representations to describe the orography, the road and hydrographic system, the plants of the small urban and rural centers that make up the *ager campanus* follow one another. If in the *Topografia fisica della Campania* in 1797, the survey of the orographic and hydrographic systems makes the plain appear as a vast and indistinct expanse dotted by small towns and bordered to the south by the reliefs of the Campi Flegrei, to the west by the basins of the ancient Licola lake, of the Patria lake and their system of canals and to the north by the river Volturno, in the tables of the *Atlante*, built on a scale of greater detail, the structures of the urban centers, the main road system, the *masserie* of the conventual and parish complexes.

The main limit of these representations, beyond their extraordinary ability to read and codify the unprecedented reality, lies in not being able to bring back the set of signs that physically compose and order the spatial structure of these territories: if the reliefs and basins are represented with great capacity and expressive technique, the structures of the small urban centers seem almost "floating" indifferent in the expanse of the plain, held together by the main roads that connect them. The route of the branch of the ancient Via Appia takes together, from south to north, Secondigliano, Melito and Aversa up to Capua, while the transversal routes from east to west connect Aversa to Trentola and Melito to the territory of Giugliano crossing the plain dotted by numerous toponyms of the farms up to the complex of marshy canals extending from the mouth of Licola to Lago Patria, preserving the memory of the passage of the ancient Clanio.

In the *Carta de' contorni di Napoli* by Marzolla of 1845, the relationship between road system and urban centers is even more clarified and explicit: the orography is hardly represented, while the road layouts are particularly defined. First, the roads that connect the city from Naples to the north, with Caserta, Capua up to the Via Santa Maria a Cubito that appears substantially parallel to the coast line, and then to the Via Domitiana, and that crosses the plain of the *ager* by connecting Calvizzano, Qualiano and Vico di Pantano (ancient Villa Literno) up to the Volturno; secondly, the road system is transversal with respect to the coast line, which connects the centers from east to west crossing the vast rural plain and crossing the street S. M. a Cubito up to converge on the via Domitiana; a special mention goes to the route of the Consolare Campana road which, starting from the Via Appia, curves south-west connecting Giugliano with Pozzuoli passing through Qualiano, which rises right at the intersection of this road and Via S. M. a Cubito. The urban centers seem to consolidate as "remarkable points" at intersections and along the paths of the articulated mesh of the road layouts, and their settlement structure, represented in a synthetic way with the buildings in black, still manages to describe the specificity of a settlement system single, but not isolated, in the sense that it seems to belong and belong to a larger system of which it represents only a part. This system sometimes seems to coincide, partially, with that of the road axes, which much more often seems to simply pass through the urban centers it connects. The complex of river basins is superimposed on the road network, without interpreting or representing particular relationships, but it clearly shows the specificity of its elements: from the winding basin of the Volturno, which crosses the Capua to Castelvolturno, the *Regi Lagni* path, extraordinary work of hydraulic engineering that preserves the memory of the basin of the ancient *Clanio* and which encircles the plain until reaching the territories north of the Vesuvius, to the complex of the basins of the Patria and Licola lake with their system of canals parallel to the coast .

From the observation of all the pre-unitary cartography, here partially recalled, it is evident how the construction of these territories has passed through a slow process and

9 R.O.T. was founded in Naples in 1781.

has remained almost stable in its settlement characteristics through the centuries, but at the same time it is clear how such representations turn out to be always partial, because they did not include, for example, the boundaries of properties or elements of detail such as minor roads, interpoderals or channels.

The work of the R.O.T. continues throughout the nineteenth century, producing maps of great detail as in the *Carta dei dintorni di Napoli* of 1818, which represents an extraordinary work of relief of the provincial territory, but it is the institution of the single land registre of 1871[10] to sanction the great turning point for the cartography in Italy: observing the first papers of the late nineteenth century and the preparatory drafts of the Military Topographical Office, which soon became IGM[11], it is possible to recognize the complexity and clarity with which the reasons for a territory emerge, that of the *ager campanus*, only partially intuible and verifiable in the previous maps. The sheet 52, called *Capua*, of the *Carta delle Province Meridionali* of 1876 describes exactly the territory south of the Volturno basin up to the border with the Campi Flegrei and, for the first time, brings to light the set of signs and traces representing the foundation and construction over time of these lands by man and his interaction with natural, orographic or hydrographic elements. The comparison of this paper with its preparatory draft, *Riduzione al 50.000 delle levate al 20.000*, shows clearly how the whole territory of the plain of Campania, from the municipalities of the so-called "crown of thorns"[12] of Naples to those of the *agro aversano* substantially structured on the mesh of the ancient Roman *centuriatio* and on its continuous relationship with the growth of urban centers and rural systems. The mesh thickens and thickens in correspondence with the urban centers, as it thins towards the countryside and the coastline, where the same mesh rotates and thickens again to accommodate the system of drainage works: through the centuries the grid of Roman centuriation has represented a regulating instrument capable of governing the structure of a vast territory like that of the *ager campanus* because it is able to hold together, through alignments, axialities and correspondences, different elements, natural or artificial, and to emerge or remain sub-track and reappear at a great distance depending on the needs of land use.

If we look at the north-south axis that crosses Giugliano and Aversa, we realize that, starting from Mugnano, it assumes the character of the main road, on which the urban layout is structured, but when it comes to Giugliano it represents a secondary appendage that deviates slightly to the east of the axis orthogonal to it that instead represents the original trace of the plant, and then continue towards Aversa, where for the first stretch appears as an inter-farm road, then converge on the Via Appia that crosses the center of Aversa and meets Teverola, which develops on the east side of the axis, and then to Casaluce that appears to the west, and then reduced to a thin mark on the surface of the cultivated fields until we see, much more to the north, its precise alignment with the city of Capua.

It would be possible to describe, in a much more detailed and precise way than what has just been done, the complexity of the relations between all these facts of the territory starting from any point represented on these maps, whether it is an urban center, a property border or the 'crossing one of the large road axes on a territorial scale that make up its infrastructure, but I think the observation and study of these maps, which show how a system of essentially rural land division, is extremely eloquent, thanks to its ability to ordering on a large scale, has been able, in a long time, to structure and hold together, in a unitary design, urban plants, roads and cultivated fields.

Conclusion

Observing the first map of the IGM produced after the Second World War it is easy to

10 Reference is made to the research by A. Buccaro on the history of the cartography of the province between the eighteenth and twentieth centuries and published in *Iconografia delle città in Campania. Napoli e i centri della provincia*, present in the bibliography.

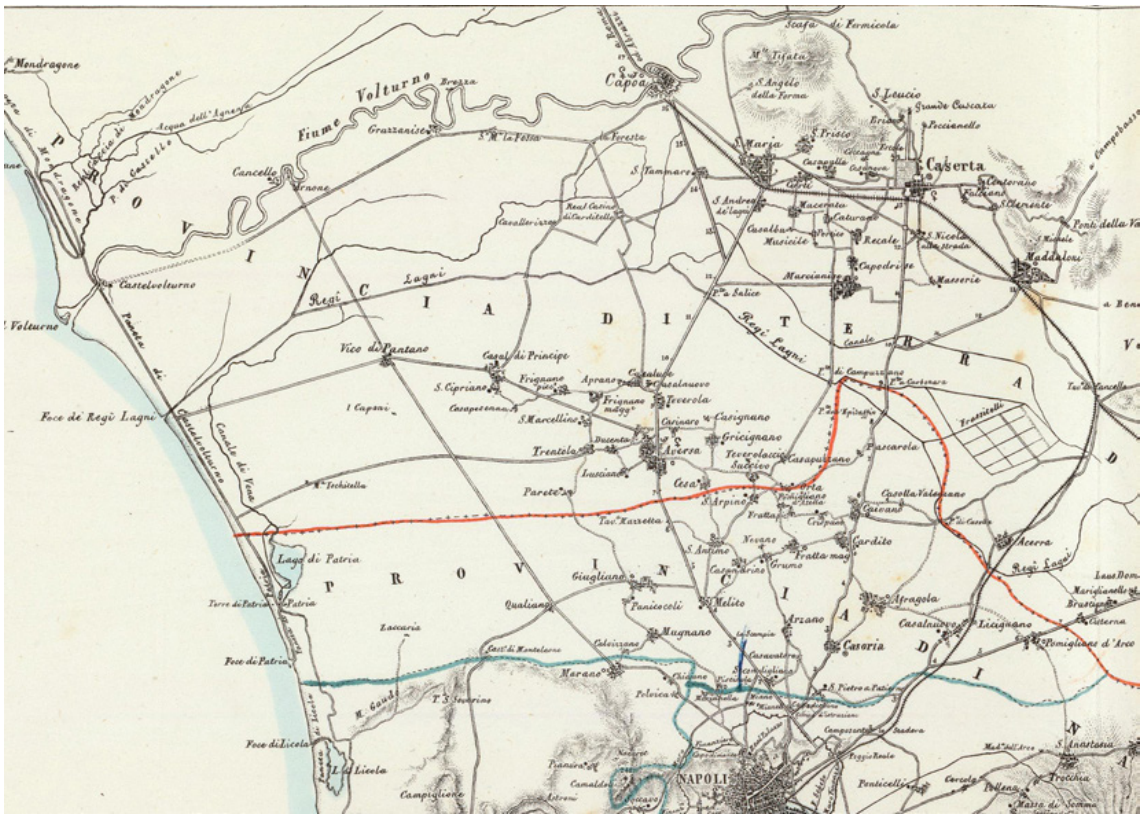
11 The office of the *Officio Topografico*, following the unification of Italy, will be moved to the capital of Florence in 1865, and in 1882 it will assume the name of *Istituto Geografico Militare*.

12 Definition of F. S. Nitti according to which the eighty-one hinterland municipalities of that time represented the crown of thorns that surround and suffocate Naples: this definition should be taken in the positive sense of integration of the municipalities of the province in the general planning policy of the city.

see how all the considerations made for the cards of the late nineteenth century remain substantially unchanged: it is possible to notice how the urban centers have preserved and consolidated their plan structure, the their relations with agricultural settlements and other centers and how their growth is always inscribed within a "spatially sustainable" development. It is the comparison with current maps and aerial photographs to show with extraordinary violence the indifferent irruption of an indistinct building fabric that, by looking in detail at the *giuglianese area* up to the coast, has substantially welded the urban centers saturating the peripheral spaces, built a series of pseudo-cities linear satellites along all the communication routes that cross the territory and produced the concealment, albeit partial, of the regulatory mesh that endowed the *ager campanus* with meaning and intelligibility. The effects of this very rapid and uncontrolled growth are well described below: «The city that expands north of Naples between the Patria and Fusaro lakes is attested in an area up to fifty years ago with an agricultural landscape design with defined rules and measures, subject then to a consistent road and railway infrastructure and to the progressive development of a dispersed building indifferent both to the agricultural landscape and to the road layouts. The new habitations do not show any sense of belonging: the occupied, fenced and privatized lots are autistic with respect to the surrounding both in use and in form. The space between these is not public and of all but "no man's land". A series of systems - agricultural, infrastructural and residential - coexist autonomously in a paratactic layering» (Rispoli, 2013: 13-19).

In conclusion, the reasoning thus far leads us to see how the loss of intelligibility of the settlement structures has essentially involved the loss of a system of order in the ability to govern and hold together the parts of such a vast territory characterized by a *discreet*, silent beauty. Rejecting the historicist logic of an interest in the recomposition of a lost order or the valorisation of a historical heritage, the attention to the design of these territories, in the persistence of these signs, due to reasons of use, division and construction of the ground, mainly represents the desire to investigate their possible ability to be guides for future transformations, through a discussion that puts at the center the necessity of its refoundation through large-scale projects that, without necessarily canceling what happened in recent decades, are able to to re-emerge those regulatory layouts such as new integrated public spaces, large alignments or simple tree-lined streets: «This type of practical application, that is the artificial transformation of the landscape, its geometric definition and orderly recomposition, this real measure of the work of the architecture with layouts and plans planimetric that go beyond the pure and simple localization of the building and the delimitation of the land that belongs to it, all this has been lost over time. But it also seems that there are no reasons why can not at this point positively propose itself again (until it becomes almost a new task for architecture in the face of the theme of the new city)» (Grassi, 2000: 97-110).

Figure 1.



727

Figure 2.

Figure 3.

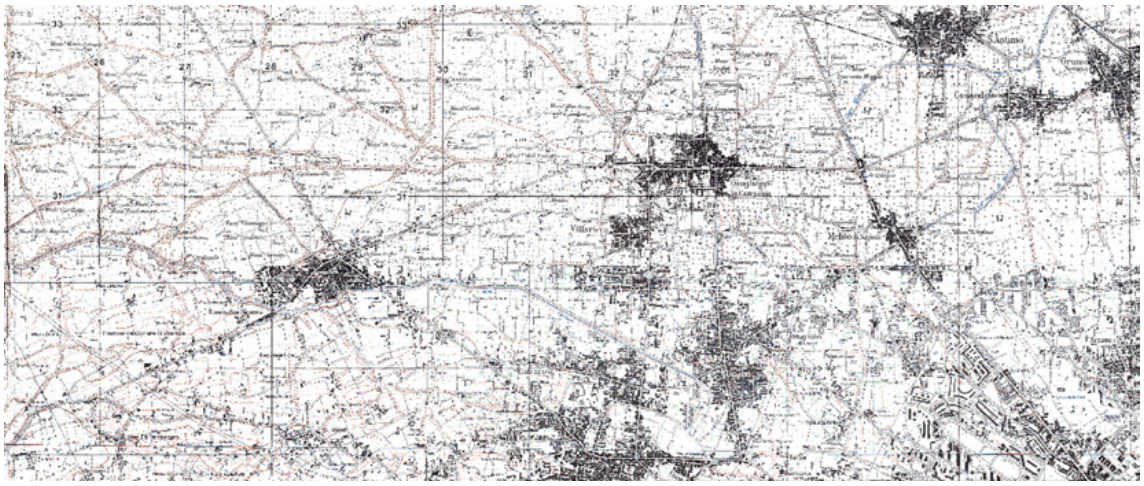
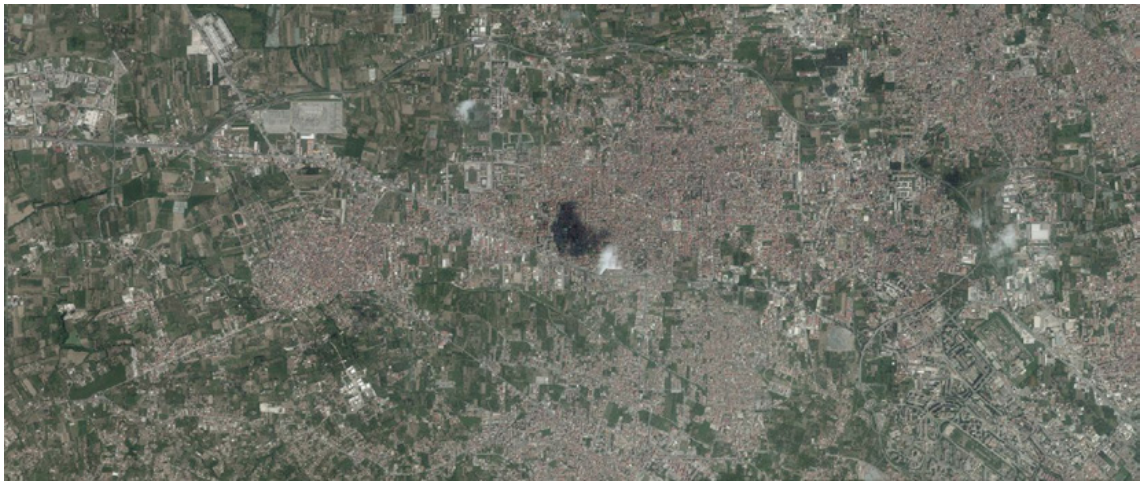


Figure 4.



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Bottom-up representations of besieged urban neighborhoods

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On the contrary to what one thinks, the extreme morphologies are not limited to the medieval depopulated centers perched on the Apennine ridges. Indeed, often on the fringe of metropolis great communication routes, paradoxically, compress with their technological necessity spaces of isolation in which extremely heterogeneous or even contradictory urban materials arise together. The urban populations living there reflect this exceptional condition. This is the case of the Crocetta and Cornaggia districts of Cinisello Balsamo in the suburbs of Milan, besieged by a highway and an urban stretch of the Turin-Venice motorway.

The critical areas of settlement are the result of a plan that was both ambitious and disconnected, and has enclosed high density housing in little space to accommodate immigration, poor services and, later, factories or office buildings looking for spaces between the large highways.

The identity that comes out from that shapes an image that is highly recognizable from outside but it is often perceived by the citizens in the form of a temporary residence to leave as soon as possible or interpreted through the abandonment syndrome. However, the concentration in little space of contradictions and criticalities can be read as a form of spatial experiment able to bring out unexpected and creative interpretations by residents and users of the neighbourhood.

The investigation of the two-way relationship between space and people, in the form of interviews, reportage and photographic documentary, can thus return a plastic identity that is evolving into definitely interesting ways.

The expanding northern Milan: suburbs at the threshold of the new century

The issue of urban suburbs, after the notice for regeneration projects of 2016 (DPCM 25 Maggio 2016), is back in the limelight in our country notably if considered from the perspective of the "Century of the city" (Bloomberg, 2015). If the prediction of the mayor of New York can also be perceived dramatically so that, after the Brexit, some scholars expect even London's secession from Great Britain, (Gillies, 2014) it is anyway true that many cities realize they will have to compete hard in a globalized contemporary world (Sassen, 2001). In this panorama, in comparison with the rest of the country, Milan seems to have been able to better manage the crisis and to attract investments from abroad, also thanks to Expo 2015 and a successful image campaign. But in the suburbs such a strategy can be hard to implement. Marginality and urban branding are not always compatible and suburbs cannot be left behind. Moreover it is difficult to manage an organism that physically overcomes the old administrative boundaries. The creation of the metropolitan city, in spite of many political hesitations, goes on precisely with this purpose.

In this regard, some critical cases at the edges of the city require a deepening that should investigate the morphological reasons for isolation and segregation reading them in connection with the current social trends and bringing out the positive sides that in many cases can come out. It is important therefore to identify the critical threshold where the city undergoes morphological and structural changes that introduce a new settlement pattern so different from the dense city and its compact organization. The case of Milan shows a city of mature urbanization in the middle of a vast metropolitan area formed by small and medium size towns that now reaches 8 million people. The stratified city finds a transitional space to the south, east and west in what have been defined, in European and North American cities, the "in-between territories" (Keil, Wood, Young, 2011). It is more difficult to claim a similar condition in the north where Milan is welded to the large belt towns of Cinisello Balsamo and Sesto San Giovanni. A strong element could be helpful as a reference to set clear physical limits that can be found in all the urban fringes. The motorway infrastructures, which surround almost all the contemporary metropolises, can be taken into account for this purpose. In the urban expansion of Milan, in fact, the various historical thresholds were first punctuated by the stages of the city walls (the Roman walls, both Augustan and Maximian, the medieval circle and the Renaissance bastions) and then marked by the elevated railway belt. But the last threshold is precisely the motorway system which, even if in sections and not continuous as in the large ring road that surrounds the capital (the "Gra"), marks the territory with a very strong physical presence.

The role of infrastructures

The physical characteristics and the technical needs of the new roadway infrastructures mark the territory with signs that are very different in comparison with the tracks of the usual nineteenth-century carriage roads. The speed reached by the vehicles requires slopes and above all very large turning radii, similar to the railway tracks. Straight sections are in any case better than winding paths that would slow down the performance of the vehicles. All these considerations have already appeared clear in what is considered the first highway in the world, the Milano Laghi (Vandone, 1923). Unlike all previous carriage roads it was restricted to motorized vehicles and was monitored at entrance and exit, just thinking of the problems that the loss of horseshoe nails could make on tires. Technological innovations required by vehicles were in any case even greater and special adjustments were necessary. The rubber wheels no longer compacted the ground but tended to erode the street surface with a pulling action. Therefore the old "*macadam*" system with its layers of progressive cobblestones that consolidated over time due to the action of the wagons wheels was no more appropriate. A new material invaded urban and rural land: the elastic and above all impermeable asphalt with considerable ecological after-effects.

Jane Jacobs also claimed the historical significance that needs of private transport had on contemporary city. The American case from this point of view is perhaps more dramatic in the contrast between the urban fabric made up of houses, parks, social places being

defended by the famous scholar and the traffic needs imposed by the modern metropolis mirrored by Moses. The issue discussed by Jacobs in the form of a contrast between the "erosion of cities" and the "attrition of automobiles" (Jacobs, 2000) returns extremely topical just now in Lombardy both for the current dimensional development of the infrastructures and for the debates about transport investments.

In the case of northern Milan we find an infrastructure of national importance such as the urban stretch of Turin-Venice motorway (A4) which, with a straight line, marks many of the first-belt municipalities. It is one of the oldest motorways of Italy inaugurated in this part as early as 1932. Even further north it was necessary to open, in the mid-90s, a northern ring road (A52) rather meandering to serve the towns of Brianza and their industrial needs. Near the municipality of Cinisello Balsamo, the motorway route meets Viale Fulvio Testi coming from Milan. This road axis was born with the unfinished industrial district Milano-Monza (Nurra 1909-10), a plan partially realized for a greater project of industrial expansion to the north of the city supported by major national industries (Breda, Pirelli etc ...) which proposed workers' residences, factories and railway connections at a scale not comparable with other cities. Its orientation came from Beruto plan and would have been reiterated by the Pavia Masera plan of 1912, then extended in the 20s and 30s. The avenue, even if smaller than in the original project, boasts dimensions and structure that show actually the entry of car traffic in the contemporary metropolis. Fulvio Testi runs first with three carriageways on each side flanked with tramways, service roads and rows of plane trees (with a total width of 60 meters) but just by Crocetta and Cornaggia districts it is easy to perceive the soft transformation from an urban axis into a territorial transport system: the highway 36 (SS36). In this section the crossings at ground level disappear to be replaced by subways with large junctions for the entry and exit lanes. The lack of traffic lights, which would slow down the car flow, is perhaps the most significant phenomenon to read this space and it has obviously social effects too. The outcomes are two districts compressed by motorways that surround them in a sort of siege.

Figure 1. Cinisello Balsamo: Crocetta and Cornaggia districts. Zenithal view.

The morphological frame can be observed very easily through a zenithal view of the two areas (Fig.1). The Crocetta district (located south-west of the intersection of the axes) takes a trapezoidal shape with the main base, east-west oriented, along the motorway while the Cornaggia district lies north-east of a sort of chiasm formed by the two arterial roads, assuming the shape of a triangle with the vertex facing south-west. Both districts complete their isolation westward with production facilities and a cemetery and eastward with the motorway junction between the two routes

Living in a neighbourhood on the fringe

Reading these neighbourhoods is relatively simple. The two districts, isolated from the rest of the municipality of Cinisello Balsamo, suffer from this lack of relations. The only connections with the surrounding area are pedestrian underpasses or cycle overpasses. Beyond Fulvio Testi avenue the municipal territory extends for a thousand meters but it gravitates around the adjoining municipality of Sesto S. Giovanni for its needs and has no links with Crocetta district.

The marginality of the context involves a concentration of decidedly distinctive social phenomena in a narrow space. The district Crocetta suffers now from a problem of "*labelling*" that identifies it as the space of degradation, social marginalization and concentration of immigrants but on the contrary to what one might think this is not due to the presence of social housing. Most of the new immigration has found accommodation in private houses that are rented at very low prices by a substantially inactive property, especially as regards maintenance. The phenomenon, underway for some years, has progressively increased over time in a vicious spiral whereby the presence of low-income people disqualified the area and the owners were not encouraged to make any investment in improvements. As a result, poor quality homes became appealing only to needy newcomers. Close to these rental buildings, located mostly on the side of Viale Fulvio Testi, there are homes owned by Italians, now often in old age, who took up their residence here decades ago and suffer now, with some discomfort, the social decline of the area. Many young couples with children, for the same reasons, have decided to look for other dwelling opportunities outside the district.

The smaller Cornaggia district is represented almost exclusively by the residents of the "Cornaggia housing association". Founded at the beginning of the 20th century as a mutual support organization, it has been turned into a housing association to build the residences of its members and currently manages the buildings. Also in this case it is an almost exclusively Italian population that suffers from the lack of contact with the rest of the citizenship. There is however a difference between the two neighbourhoods: the wider Crocetta district, with a minimal amount of public service, is better-balanced than Cornaggia, where the spatial segregation has more strongly restricted the resident population.

A shared project

It is in this context an attempt to investigate the areas was carried out as the final exam project of the course of analogical and digital photography at the Bauer professional school in Milan.

On this occasion the approach to the place and to the people took the form of a series of portraits, urban photos and informal interviews with dwellers and visitors in order to depict a "bottom up" outlook: in other words to portrait what may be the image of the area by those who are, in different ways, "stakeholder".

Among the social associations that make this neighbourhoods quite interesting the civic centre is definitely the most outstanding. Owing to the social and historical composition of the district, this space mainly hosts elderly people who meet here for social dinners, games of "Pétanque" (sport similar to bowls but less competitive) and Burako. The civic centre overlaps so with the senior centre. In this space there are also commendable initiatives such as the assistance to debt-burdened households, a support to find caregivers and the "Fuori Pertini" (a separate section of the "Pertini" civic library) in order to have a link with the municipal institutions. In a complementary way to the senior centre the club for

youth aggregation "Icaro" manages meeting spaces during the week with the support of educators for both teenagers and young people (aged 11 to 21). Meeting opportunities to play board games, a little library with magazines and comics, a small basketball court and a kitchen for friendly meals can attract Italian and foreign students in a convivial atmosphere. Furthermore there are interesting activities such as a small neighbourhood radio and a music workshop. An important project started here with the support of the councillor for cultural policies according to which a young street artists' collective, the "AAA Aerosol Art Area", painted walls, abandoned buildings and a pedestrian underpass with graffiti.

Public service planned other important proposals too. Comprehensive School "Balilla Paganelli" has intended to integrate new immigrants and their families. In order come up against the economic needs of the families, it developed the "school without rucksack". Mothers were so asked to sew small canvas bags to replace the satchels allowing the students to leave most of their books at school. In addition, other ongoing projects, such as the opening of a Montessori section, have also surprisingly succeeded in attracting users from other areas outside the neighbourhood. The presence of the family counselling then had a great success through a continuous work of personal contacts to involve above all immigrant women in a healthcare pathways oriented to the prevention and assistance of mothers and newborns. Finally in the smaller district of Cornaggia the centre "Amis" (Milanese Association of Sardinian Immigrants) serves as a meeting place for the locals but also as a space for cultural activities, among which the drama club "Oneiros" writes and produces successful shows, also performed in many other theatres of Italy.

Memories and places

Despite the evidence of the marks on the territory the morphology of these districts and some settlement dynamics request to be deepened with great attention. The technological needs above mentioned clear up how motorways have moulded the land with new shapes overlapping on the historic city but only partially. Some details remains unclear: the road axis of Vial Fulvio Testi, coming from the city in the south, has a torsion towards the east being placed almost parallel to the highway and then turns again to the north (Fig. 1). But why?

The analysis of historical maps is not very helpful as the Teresian land registry of 1722 shows simply open country with generic lots. Even the more updated maps of the Touring club, available from an amateur website (miol.it/stagniweb), which also should be very faithful in reporting roads, do not say much about this issue. Neither the 1908 map nor the 1930 one, which already reports the future A4, explains this outstanding element of the landscape.

In this case the memories of old people in the neighbourhood confirm some insights that a proper urban reading can suggest. The scale of the historical cartographies does not report what the citizens can still remember: the northernmost part of the avenue was originally an extension of Viale Monza in Milan that passed first through Sesto San Giovanni and then just crossed the old Cornaggia farmhouse (which gave the name to the district). The ancient route even cut in half the farm building (now a part is demolished) and then ran as far as Monza. It is therefore easier to understand the lay-out of Viale Fulvio Testi, which, after crossing the first industrial outskirts, avoids the centre of the municipality of Cinisello and rejoins the north part of the historic axis to Monza, which could no longer easily support the car traffic. This new route was exploited, moreover, by an interesting innovative agricultural enterprise (well-known at the time), the "Ovocultura Valmonte" (Laveni, Avati, 1930), which was placed on roadside of what would have been the future highway 36. Through informal channels it was possible to reconstruct the other border of the Crocetta district too. On the west side there are no large infrastructures but lands with functional and anonymous buildings, very few residences, abandoned industrial compounds and the old cemetery of Balsamo. Some people can remember that this zone was a marginal part of the old town where the sewage was conveyed into a "foppa", a typical Milanese sewage disposal plant, that always discouraged building activity.

Bottom-up representation: photography for a Lynchian interpretation

The answers that the contacts with the residents have provided are only a part of the contribution they can offer to read the morphological process that affects the neighbourhood. It can be much more interesting to collect their way of reading, interpreting and considering this part of the city. This is obviously a non-technical look and not mediated by the conventions of the official representation. From this point of view the challenge is to gather a spontaneous but strongly felt vision and, as far as possible, to give it back in all its freshness.

In this case maybe the most satisfying tool to document this experience is photography. Almost no text about space disciplines can give a vivid description without a photographic support. A photo set is always necessary just to quickly communicate the context, to give a synthetic element of reflection, to testify a situation of degradation or the need for a redevelopment. Unfortunately most of times, urban photography has only an ancillary function in research but photos can fully give back, through an immediate model of vision, the impact that strangers can have getting inside the district without losing the point of view of the inhabitants as well. Photos can be so a meaningful tool to describe a complex morphology with its spatial dilatations and compressions, the conflicts between built space and infrastructures, an height development of buildings and their extreme density.

The visual narratives that concern metropolitan suburbs have by now a long tradition and a consolidated success that can be traced back to Bill Owens with his famous "Suburbia" (Owens, 1973) and to Edward Ruscha with "Twentysix Gasoline Stations", "Some Los Angeles Apartments ","Every Building on the Sunset Strip "(Ruscha, 1963, 1965, 1966) until the recent documentary "Santo Gra" by Gianfranco Rosi. Such a genealogy of photographic narratives is extremely empathic in social and landscape surveys. All the quoted projects fluctuate between an attention to the middle class and an investigation of the aesthetic and formal values of the built space.

However, it is possible to go further by using photography also to reproduce and communicate the deep mental image closely related to a "bottom up" perspective. The experience of Kevin Lynch can be retrieved here in association with photography to understand the ways of citizen to their space. In other words icastic photos can be very successful to translate Lynchian concepts into images.

What Lynch claimed in the "Image of the city" (Lynch, 1960) emerges quite clearly in the contacts with the residents notably about the relationships between morphology and mental vision. With reference to the five points of Lynch Crocetta citizens clearly perceive the road axes as "Edges". It is not surprising that the most intense of them is Fulvio Testi avenue which, with six lanes, guardrails (and sometimes concrete walls), side roads, parking lots and a tree-lined traffic divider, expands up to 90 meters. When we consider that it carries a considerable amount of traffic and it is impassable to walkers, it is not difficult to recognize it as an "Edge" (Fig. 2).

Within the neighbourhood people can also identify in viale Abruzzi and viale Friuli significant Lynchian "Paths", not just because the size of the district does not allow to host many other streets but mostly because the introversion of the space compels to consider these paths as the preferential places where to concentrate the organization of social life. These two roads, that fit together with a "bayonet" connection, are the backbone of Crocetta and here we can find actually the club for youth aggregation, the civic centre/senior centre and the main building of the comprehensive School that manages all the other schools in the neighbourhood. (fig 3)

A micro "District" at the extreme border of Crocetta, just at the crossroads of the motorways, is more nuanced but evident. Most of the immigrant families are concentrated and often self-segregated in these high-rise buildings. It is curious how these residences are considered in any case as provisional, as for many people they are only the first dwelling opportunity in the emigration process. Many newcomers just want to leave as soon as possible following a natural wish to achieve integration simply by breaking the lease. This is a narrow and well-identified space in which, according to the social workers, Albanians and Romanians have been recently replaced by the arrival of Bengalis and Arabs and by an unexpected return

of Chinese (Fig 4).

Conclusions: problem or resource?

Compressed spaces and their morphologies urge a challenge which is still ongoing. It's hard to say how the question will evolve in the future. The project to extend the line 5 subway, which virtually evokes more than a century later the dream of the industrial Milano-Monza futuristic district, may perhaps bring a change in the real estate market and reverse the abandonment and the provisional role of some parts of Crocetta. The extension of the soon-to-be opened line 1 may likewise break the long-term isolation of the Cornaggia and change the current landscape. For now, the edges of the express roads host only a series of shops and malls. These are services designed to passing motorists: gas stations on average about every 300 meters, electronics and do-it-yourself stores, supermarkets, wholesale trade, furniture exhibitions etc ... This is a panorama that reflects very well the phenomenon outlined by Augé (Augé, 2007) about the rejection of marginal people into the banlieus and the ghettos by the contemporary city in parallel with the call to the shopping centres, the "non-places", that converge on the edges of large communication infrastructures.

The efforts of the public administration to revitalize the neighbourhoods with the involvement of the residents have recently led to the adhesion to the national "2012 City Plan" (DL 22 June 2012) which will ensure funds for the recovery of the old Cornaggia farmhouse, the construction of an autistic adults support centre, the covering of part of the A4 motorway, the expansion of market areas and the transformation of abandoned buildings.

It is too early to say what the results of this project will be, but perhaps in the stratified morphology of such areas, sometimes considered marginal, we will able to understand how to transform the suburbs from a problem to a resource (Ferrarotti, Macioti, 2009).

Figure 2. Night view of Viale Fulvio Testi in Crocetta district: a Lynchian "Edge".

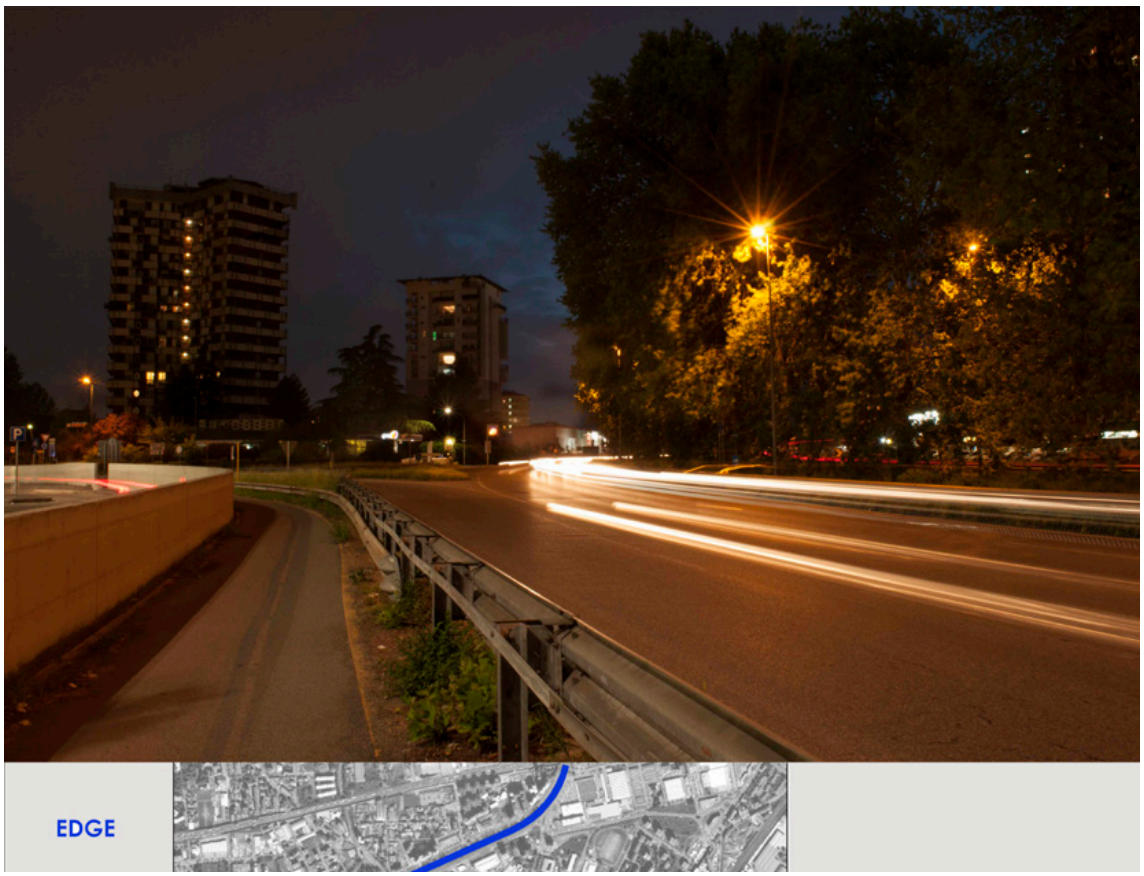

Figure 3. Senior Centre and the Comprehensive School on the sides of Viale Friuli. A Lynchian "Path".

Figure 4. High density. Residential building beside Viale Fulvio Testi motorway in Crocetta. A Lynchian "District".

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The stone settlements of Basilicata and the rock archetype

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Archetype of the excavation as a primal gesture of shelter and identity element of a geographic-cultural enclave, that has correspondences in many regions placed between the 30th and the 50th parallel, including in particular specific places in the Mediterranean, such as in Spain and France, in the Maghreb, in the Anatolian Peninsula, as well as in other karst areas of southern Italy. In this case, the research analyzes several ridge towns of Basilicata, whose territory is distinguished by the alternation of ridges and river valleys, at the center of millennial anthropization processes that especially during the Middle Ages structured a polycentric organism whose characters are still recognizable.

The case studies are been chosen according two elements: the first, regarding the settlement-territorial aspect, concerns the location of the towns in relation to paths and watercourses; the second, about the type-morphological aspect, concerns the relationship among the excavated settlements with the soil structure and its slope.

The aim is to identify and compare some of the main typical ways of settling in the architectural and cultural "lithic" areas, represented by the elemental approach of excavation - by subtraction of matter - up to the translation of the excavated space through its external projection as a building, which preserves tectonic vocation and expressive simplification. The understanding of this material-building-formal link, which concerns the different scales of built reality, can contribute to the definition of specific updated design strategies able to drawing - from permanences and mutations of the "lithic" palimpsest - methods and principles useful to affirm a renewed critical relationship with history.

Introduzione

La ricerca sugli insediamenti "litici" scavati, che qui si introduce, consente di indagare l'archetipo del riparo in una sua particolare accezione, quella della cavità naturale e della sua duttilità a divenire spazio architettonico, matrice di molti insediamenti arcaici fra i quali i borghi lucani esaminati. La loro coralità policentrica nel rappresentare differenti varianti di un unico pensiero architettonico, è fondata sul riconoscere nello scavo una potenzialità spaziale e abitativa –alla base del processo tipo-morfologico che connette la grotta al *lamione*– ed è espressa anche a scala del territorio dal modo in cui i borghi si relazionano alla struttura oro-idrografica e ai percorsi storici. Il *lamione* è il tipo edilizio dell'abitato rupestre apulo-lucano, l'elemento minimo direttamente derivato dall'esperienza in grotta. Da essa ricava il materiale, ridotto in blocchi, eredita la superficie media e le proporzioni, l'altezza utile interna, i caratteri espressivi. È il modulo spaziale e costruttivo riassunto nella struttura muraria di tufo e nella volta a botte, che si lega ai terrazzamenti come strategia di trasformazione del pendio e di genesi proto-urbana.

L'obiettivo è mettere in luce alcuni tipi insediativi delle aree architettonico-culturali litiche, generati dall'esperienza dello scavo e dalla conseguente traduzione costruita dello spazio scavato mediante la sua proiezione esterna. Quest'ultima deriva da un atto critico che traduce la vocazione della roccia in una serie di riflessioni sul muro e sulla sua apparecchiatura, incentrate sulla semplificazione espressiva del rapporto forma-costruzione. Un processo che appartiene in generale –e con tutte le sue sfaccettature– al mondo rupestre mediterraneo, racchiuso anche in aree della Spagna, della Francia, del Maghreb, della Penisola Anatolica, oltre che nei territori carsici dell'Italia meridionale. Un patrimonio di principi ed invarianti che, una volta estrapolati, possono contribuire ad alimentare speculazioni che abbiano ad oggetto l'aggiornamento dell'abitare secondo un approccio che renda riconoscibile l'appartenenza ad un *milieu* culturale millenario, nella dialettica tra continuità critica e l'introduzione di contrasti sintattici e linguistici.

L'archetipo dello scavo nella costruzione degli insediamenti litici

Le aree litiche sono un ambito della cultura architettonica nel quale i materiali, intesi come riconoscimento di una particolare attitudine della materia a divenire elementi costruttivi, innescano un legame quasi totalizzante con l'ambiente, perché nel loro progressivo affinamento la tensione tettonica dei materiali plastici viene interpretata in elementi e strutture i cui caratteri riflettono fedelmente la materia di partenza e la sua organizzazione fisico-geologica. Questo è vero sia alla scala architettonica che a quella della città; in quest'ultimo caso i criteri con i quali ogni edificio entra in rapporto con quello adiacente generano una specifica forma urbana ed uno spazio peculiare di relazione fra parti. In questo modo la morfogenesi insediativa è strettamente influenzata dal rapporto materia-materiale, come accade nel territorio murgiano *apulo-lucano*, ricchissimo di testimonianze rupestri (Fonseca, 1975, 1987). Gli insediamenti indagati in questo saggio riassumono tipi e varianti che attestano il continuo aggiornamento, spontaneo e critico, di un approccio costruttivo adattato alle mutevoli esigenze che nel tempo le comunità hanno maturato, dallo scavo –sottrazione di materia– all'estensione del suo spazio all'esterno con l'artificio della costruzione, realizzata con la stessa materia asportata trasformata in conci ed elementi speciali. Un confronto continuo tra ambiente, materia e architettura, non inteso come identificazione mimetica del costruito ma, al contrario, come dialettica tra natura e artificio che si esplica con una chiara distinzione dei ruoli. Un confronto che procede anche per salti e discontinuità dovuta all'accresciuta consapevolezza tecnica che si cela dietro la continuità –solo apparente– che dalla grotta conduce ai *lamioni*, ma che in realtà rappresenta una vera e propria frattura concettuale, pari alla differenza esistente tra l'abitare rupestre –maggiormente legato alla frugalità del ricovero notturno– e la complessità dell'organismo urbano –di cui le case a *lamione* su più livelli rappresentano la memoria dello scavo portata ad un più alto livello di comprensione delle possibilità statico-costruttive e sintattico-espressive del tufo.

Un processo che si nasconde dietro la ricchezza delle soluzioni con le quali le strutture urbane sono costruite e modificate, sulla base di poche variabili tra le quali spiccano la

conformazione del pendio, la pendenza del suolo, l'orientamento, l'ampiezza dell'area da terrazzare. A mescolare questi *a-priori* insediativi provvede il rapporto tra crinale, pendio e percorsi, come si dirà più dettagliatamente in seguito.

Il rione *Sassi* a Matera, in questo senso, è importante perché racchiude nel suo palinsesto millenario molteplici declinazioni domestiche dell'architettura rupestre in area mediterranea e non solo, dipendenti dalla morfologia del suolo e basati sui due archetipi del terrazzamento e dello scavo come sintesi tra architettura, città e paesaggio (Demetrio, Guadagno, 2001).

In tal senso, quando la differenza di quota tra i terrazzamenti è limitata e non sono presenti grotte naturali, i *lamioni* sono realizzati interamente fuori terra, mentre nel caso in cui ci sono grotte sufficientemente ampie e il dislivello è prossimo alla loro altezza interna, lo scavo non è una semplice operazione di sottrazione, ma agisce secondo astuzie plano-altimetriche escogitate per garantire l'illuminazione e l'aerazione nelle parti più interne. Due modalità proto-urbane che anticipano l'aggiornamento tipologico dato dalla chiusura dello spazio scavato con la costruzione della facciata, oppure, nelle fasi successive, dall'estensione della cavità all'esterno attraverso l'aggregazione di moduli-campata in muratura. In entrambi i casi, la separazione dell'abitazione dal percorso avviene spesso interponendo un recinto. Infine, quando la pendenza del suolo è accentuata e il dislivello tra i terrazzamenti supera l'altezza antropometrica assunta come dato spaziale, il *lamione* mono-vano diviene a sua volta modulo base del successivo sviluppo in altezza, per raggiungere il percorso del terrazzamento superiore (A. Giuffré, C. Carocci, 1997). L'elevazione in altezza dei *lamioni* e la loro successiva fusione come palazzo completa il passaggio dall'abitato spontaneo rurale all'organismo urbano maturo, il quale mantiene, almeno fino all'espansione seicentesca, l'*unità di vicinato* come risultato del progressivo accrescimento delle unità edilizie attorno ad ambiti esterni di pertinenza comuni –divenuti nel tempo *luoghi* nodali che riuniscono la comunità– ma i cui tratti essenziali sono già presenti in alcuni villaggi neolitici (Laureano, 1993).

L'estrema complessità della struttura urbana materana richiederebbe ben altro spazio di quello concesso. Tuttavia era utile delineare brevemente alcuni suoi elementi, permanenze ed archetipi, necessari ad inquadrare la stretta relazione tra scavo, materiale e costruito urbano (Del Parigi, 1994) che è possibile leggere in modo elementare nei casi di studio presentati, apparentemente minori ma in realtà molto importanti se considerati singole espressioni di un'unica cultura del costruire in area litica e che trova nella città dei Sassi il caso esemplare.

Morfologia dei borghi rupestri lucani

La morfologia del territorio lucano si caratterizza per la successione di crinali e fondivalle alla quale la struttura antropica si è adattata, in particolare nel modo con cui i borghi si legano inscindibilmente ai percorsi, riflettendo con la loro ubicazione il sistema idrografico, fungendo da nodi sincretici e interscalari di un *unicum* che trova la sua sintesi proprio nei processi urbani di seguito analizzati (Boezi, 1994). [FIGURA 1] Letti in questi termini, i percorsi storici della Lucania assumono un duplice ruolo, sia perché sono la diretta manifestazione dell'influenza esercitata dall'orografia, sia perché è possibile cogliere in modo compiuto il loro significato solo in funzione degli accentramenti insediativi, seguendo i corsi d'acqua come sistema secondario di riferimento (De Ruggeri, 1975). Tra di essi si distinguono la *Via Appia*, che attraversa la regione a nord-est fino a raggiungere la costa in prossimità di Taranto e la *Via Popilia*, che segue la costa tirrenica verso sud-ovest. Infine la *Strada degli Stranieri,* che taglia trasversalmente i due percorsi citati, ponendosi ortogonalmente alla direttrice nord-sud della *Via Herculia* (Dalena, 2003).

Il complesso delle interferenze tra scale diverse caratterizza i casi di studio, insediamenti di crinale scelti fra quelli nei quali è maggiormente presente l'influenza del tessuto connettivo viario e dei corsi d'acqua sulla forma urbana, generata a partire dalla comune matrice dello scavo, fino alla sua "traslitterazione" architettonica nella città in elevato.

I percorsi storici collegano i casi di studio come tessuto territoriale rupestre: sulla *Via Appia,* Barile e Rapolla, alle pendici del monte Vulture; sulla *Strada degli Stranieri* i borghi di crinale di Grottole, Grassano e Calciano, insieme a Montescaglioso; lungo il *Regio tratturo,* Acerenza, Pietragalla e Tolve; in corrispondenza dei tratturi che dalla *Via Herculea* scendono verso la

costa ionica, è infine ubicato San Giorgio Lucano, affacciato nella valle del Sarmento.

Scendendo nel dettaglio della struttura urbana, questi borghi mostrano un apparato interscalare che determina attraverso l'architettura la sintesi fra paesaggio e città, in cui le forme del suolo e la struttura insediativa sono la manifestazione di un'unica strategia dell'abitare.

Tra di essi, Acerenza, Tolve, Montescaglioso, Grassano, Grottole, Barile e Pietragalla hanno un nucleo rupestre scavato sullo stesso versante del borgo pianificato. La loro "economia tipologica", a tratti didascalica, consente di individuare la riduzione sintattica che la forma urbana esprime, configurando una sorta di "accezione del suolo" al quale appartiene interamente. [FIGURE 2-3]

Il tessuto di Acerenza e Tolve è strutturato attraverso terrazzamenti organizzati seguendo l'acrocoro, il cui profilo è descritto architettonicamente dalla successione percorso-aggregato. Ad Acerenza in particolare, il crinale del Regio tratturo Potenza-Bari è tradotto in un asse che chiarisce le dinamiche trasformative, completato dal percorso trasversale che connette il tessuto ai principali edifici pubblici, dominati dal duomo in posizione acropolica. Dalla lettura dell'attuale tessuto è possibile identificare un ordine pianificato del quale si intuisce il perimetro quadrangolare del nucleo medievale, introiettato nelle espansioni extramoenia fino a costruire una relazione di continuità con il nucleo scavato, posto lungo il versante nordoccidentale e caratterizzato da un sistema di rampe ricavate sui fianchi del monte, che mettono in comunicazione la fitta rete di architetture scavate prevalentemente impiegate come ripari per armenti o cantine.

Come nel caso di Acerenza, Tolve riassume i percorsi territoriali esemplificandone il tracciato all'interno della maglia insediativa, nella quale si distingue la pianificazione di primo impianto e le gerarchie conferite dalla collocazione dei principali edifici e spazi pubblici. La struttura del primo nucleo è caratterizzata da un sistema di terrazzamenti che celano gli spazi ipogei, contraddistinti, come negli altri casi esaminati, dall'alternanza di percorsi a quote diverse legati dall'edificato a schiera "fuori terra" che ricalca l'orografia del suolo. Il percorso *extra-moenia* accentra il successivo sviluppo della città, un tessuto cartesiano che riprende, in sezione, lo stesso ritmo terrazzato del nucleo antico. Rispetto a queste due fasi, il primitivo villaggio rupestre rappresenta l'archetipo insediativo del borgo recente. Una strategia che affiora con maggior complessità a Montescaglioso, dove la linea di crinale è inglobata nel tessuto come asse principale al quale si relazionano i percorsi secondari ortogonali che delimitano gli isolati a schiera. L'impianto è specializzato dalla piazza principale, sorta per annodamento dei due percorsi territoriali, dai palazzi, e soprattutto dall'Abbazia benedettina di San Michele Arcangelo, elemento emergente e fulcro visivo dell'intero fondovalle oltre che elemento fuori scala del tessuto. L'insediamento rupestre terrazzato è sviluppato sul versante settentrionale e anche in questo caso presenta la "fusione" tettonica tra lo spazio delle grotte e i *lamioni*. In molti casi gli spazi scavati sono collegati alla costruzione in elevato, del quale costituiscono piano di fondazione.

Lungo la *Strada degli Stranieri*, a Grassano e Grottole varia il rapporto finora esaminato tra città in elevato e città scavata. Se negli esempi precedenti il villaggio rupestre si pone in continuità al nucleo "fuori terra", nel secondo caso esso occupa marginalmente uno dei versanti attraversati dal crinale, isolandosi dal borgo. Grassano racchiude nella maglia edificata l'intersezione di tre percorsi di crinale, la cui convergenza è segnata dalla concentrazione dell'edilizia specialistica, caratterizzata da un tessuto a schiera che procede per terrazzamenti fino a fondersi con il tessuto rupestre.-

A Grottole due promontori collegati fra loro si affacciano sul compluvio idrografico. Sono uniti dall'insediamento rupestre che avvolge a nord est l'intera struttura montuosa, denunciando la comune matrice di appartenenza che tiene assieme il nucleo antico e il nucleo consolidato più recente. All'interno dell'abitato "fuori terra" le piazze e i principali edifici pubblici segnano i cambi di direzione dei percorsi e i salti di quota, ponendosi come elementi descrittivi delle fasi formative. La chiesa madre domina il promontorio principale, interamente trasformato dal tessuto rupestre che ne ha mutato la natura con una complessa sequenza di volumi architettonici che estrudono lo spazio delle grotte e le cui coperture sono allo stesso tempo tetto e pavimento del percorso superiore.

Il borgo di Barile ha un nucleo di cantine autonomo, sul versante opposto a quello della

città consolidata. L'intero centro occupa un promontorio aperto verso valle dominato dal convento e dal duomo, nodo di connessione tra il borgo del piano e il nucleo scavato. Quest'ultimo adotta un rapporto forma-costruzione che rilegge l'orografia del suolo con le stesse modalità rinvenibili nel *Sasso caveoso* di Matera, dove le singole grotte sono chiuse da facciate che ricalcano il margine roccioso.

Come nel borgo di Barile, a Pietragalla il nucleo rupestre più antico è separato dalla città di impianto medievale, ma con una notevole differenza nell'adattamento orografico: il tessuto rupestre non si fonda qui sul paradigma del terrazzamento che unifica le unità scavate, ma definisce una specifica logica che articola volumi isolati. I *lamioni*, usati come cantine e palmenti, affiorano dal sottosuolo raggruppati ma distinti, componendo una vera e propria unità di vicinato organizzata nelle tre dimensioni, perché i volumi costruiti sono "avvolti" dal terreno e dalla vegetazione spontanea, riepilogando struttura, forma e linguaggio. Nel punto più alto della collina, dalla parte opposta rispetto al nucleo rupestre, il borgo di fondazione si attesta sullo stesso percorso che conduce alle grotte, oltre il quale sono disposti a pettine i percorsi di impianto digradanti verso valle.

Gli ultimi tre borghi esaminati si differenziano da quelli indagati per la diversa posizione del nucleo rupestre rispetto alla città pianificata. In essi il villaggio scavato insiste sul versante opposto, determinando la formazione di due distinti insediamenti.

Rapolla è edificata su un promontorio isolato da due gravine, il cui nucleo rupestre presenta analogie insediativo-orografiche con Grottole. Ma diversamente da questa, i salti di quota sono ben evidenti e netta risulta essere la separazione tra copertura e percorsi. Una caratteristica ancora più evidente a San Giorgio Lucano, dove vi sono affinità con la transizione scavo-costruzione riconoscibile ad Aliano, Calciano e in parte a Grassano, ma soprattutto nella parte più arcaica del *Sasso caveoso* a Matera. A San Giorgio, inoltre, i volumi esterni mantengono la stessa tecnica costruttiva della parete-terrazzamento e sono spesso preceduti da un recinto che fa da filtro tra il percorso e l'ingresso interno. Un processo per fasi che qui, come negli altri casi citati, è contemporaneamente presente e perfettamente leggibile.

A calciano infine, l'architettura dello scavo è concentrata all'interno di un unico grande complesso rupestre fortificato, nel quale le strutture murarie terrazzate -e il sistema di rampe che le mette in comunicazione- è contiguo al fianco scavato, racchiudendo un complesso di grotte usate come ovili e stalle. [FIGURA 4]

Conclusioni

La ricerca in corso si prefigge l'obiettivo di portare alla luce alcuni caratteri essenziali di borghi contraddistinti da permanenze e variazioni fondate sull'archetipo spaziale dello scavo come *incipit* tipologico interscalare, declinato nei modi preliminarmente descritti. Un legame/conflitto con la forma del suolo, alla base di una millenaria cultura dell'abitare "litico", per la quale il gesto elementare dello scavare-cavare è la esemplificazione di una tettonica di natura e della sua successiva interpretazione come tettonica costruita. Una complessa strategia che accomuna il territorio analizzato, configurando una vera e propria *enclave* che custodisce le forme rupestri nelle loro diverse varianti, della quale Matera incarna il suo esito più complesso. La città dei *Sassi* quindi, secondo questa chiave di lettura, va considerata parte di un ambito geografico molto più ampio dell'eccezione alla quale spesso viene ricondotta perché, al contrario, proprio la sua appartenenza a questo sistema corale e molteplice ne accresce l'importanza, in quanto caso esemplare di una cultura dello scavo come matrice spaziale che si trova in forma didascalica nei casi esaminati e dai quali si differenzia per l'uso domestico delle cavità, meno presente nei borghi studiati.

Sintetizzando i tratti distintivi del territorio rupestre lucano sulla base degli elementi finora emersi, possono individuarsi alcuni caratteri ricorrenti, differenziati in base all'orografia e al rapporto con i percorsi. Il primo è l'orientamento a nord delle architetture rupestri e delle loro aperture, probabilmente allo scopo di favorire l'ingresso dei venti asciutti da settentrione, necessari alla conservazione delle derrate e ai processi di fermentazione e stagionatura di vini e formaggi. Il secondo carattere riguarda la mutua relazione tra borgo e insediamento rupestre, che può essere di contiguità o separazione: il primo caso si verifica quando l'isorien-

tamento e la conformazione del crinale permettono un processo di continua modificazione dallo scavo al borgo, lasciando inalterata la logica insediativa; diversamente, il villaggio rupestre resta isolato, al margine o totalmente esterno al borgo. La contiguità o la separazione tra i due insediamenti conferisce caratteri distinti, perché nel primo caso la morfologia è rappresentazione del processo insediativo nelle sue diverse fasi, come a Matera, mentre l'isolamento del borgo dal villaggio rupestre lascia intatto, attraverso quest'ultimo, il paradigma di partenza, cristallizzato come sintesi esemplare.

Nei borghi dove esiste continuità tra scavo ed architettura, la grotta presenta rapporti dimensionali trasferiti nel costruito fuori terra, fungendo da basamento sul quale si sovrappongono i diversi livelli dei moduli-*lamione*. Questi, ereditano dalla sequenza degli spazi rupestri l'interasse delle singole unità e la stratificazione dei piani terrazzati. Un processo spontaneo che parte dal sottosuolo e raggiunge i tetti attraverso l'aggiornamento dello stesso pensiero architettonico.

La minore pendenza del suolo comporta invece un adattamento dell'insediamento alla diversa condizione orografica, determinando la separazione del borgo "esterno" dalla sua parte rupestre.

Due condizioni che però danno luogo molto spesso ad interessanti intersezioni tipologiche accompagnate da specializzazioni d'uso. Infatti, mentre nei borghi nati in continuità con l'insediamento scavato, le grotte erano cantine o laboratori per la cottura della terracotta, negli insediamenti rupestri autonomi le grotte erano ripari notturni per ovini e maiali.

Dall'analisi emerge anche la seconda influenza dell'orografia oltre quella esercitata sulle strategie insediative. È infatti la scala architettonica a rendere compiutamente evidente il continuo adattamento del rapporto tra pendenza, terrazzamento, scavo, *lamione*. In questo senso, la ripidità del pendio è tradotta in grotte disposte su terrazzamenti successivi, una trasformazione primigenia del suolo che fa da sfondo ai successivi sviluppi architettonici di quei codici insediativi, rappresentati dalla chiusura dello scavo con la costruzione della facciata, dalla realizzazione del recinto come prima forma di estensione all'esterno dello spazio scavato, fino alla costruzione dei *lamioni,* moduli tettonico-spaziali dell'intero borgo.

In presenza di un pendio più dolce, diversamente dal primo caso, la sequenza scavo-costruzione varia per ovviare all'impossibilità di chiudere con la facciata lo spazio della grotta, a causa dell'eccessiva inclinazione del fronte di scavo. Un quesito risolto con architetture semi-ipogee caratterizzate dal ruolo centrale svolto dal tetto nel definire il linguaggio architettonico e urbano, sia attraverso l'estradosso delle volte a botte, sia mediante i tetti-pavimento, contemporaneamente copertura e spazio pubblico.

Da tutto questo si deduce il chiaro elementarismo tettonico con il quale vengono le strutture edilizie esprimono il proprio legame forma-costruzione. In cui il rapporto materia-materiale, con differenti livelli di complessità trasformativa, si riflette in una particolare "economia espressiva" riconducibile alla parete con conci a vista o celati dalla malta di calce, dove la copertura è l'estradosso della volta che mostra sé stessa, o trova ulteriore riparo nel tetto in legno che la copre e la protegge. Un patrimonio di principi, di permanenze e mutazioni, di conflitti con la morfologia del suolo al di là dell'apparente simbiosi materiale. Un patrimonio conoscitivo che può contribuire a tracciare i confini di una riflessione sull'abitare dalla quale emerga la trama nascosta della civiltà del luogo, non inteso come sterile culto del passato al quale radicarsi, ma al contrario per tradurre in termini nuovi la custodia della sua essenza.

Figure 1. La struttura del territorio e il tessuto viario-insediativo rupestre.

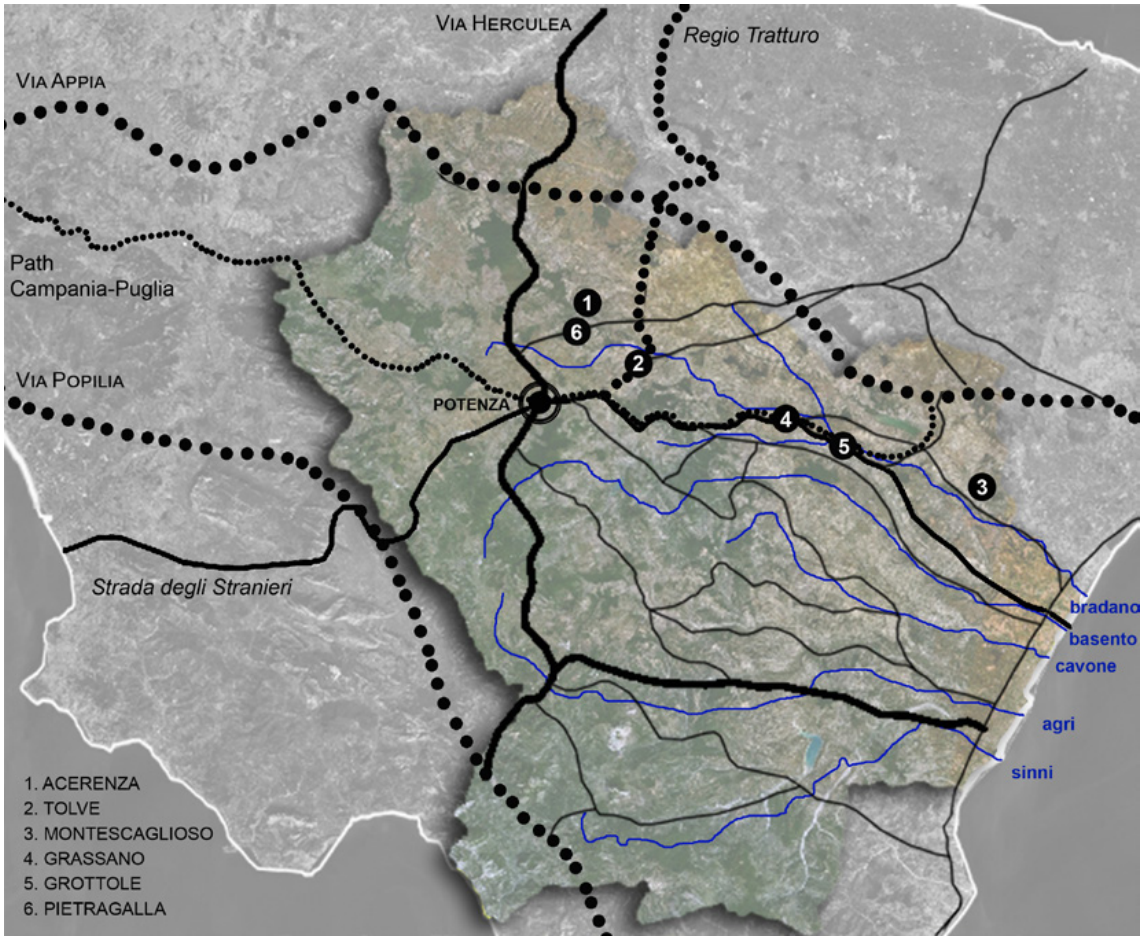

Figure 2. Studi iniziali sulla strategia insediativa dei casi di studio. Negli schizzi centrali, la parte in blu indica l'insediamento rupestre.

Figure 3. Studi iniziali sulla strategia insediativa dei casi di studio. Negli schizzi centrali, la parte in blu indica l'insediamento rupestre.

Figure 4. Classificazione preliminare dei tipi insediativi.

TIPI INSEDIATIVI - quadro sinottico

TIPO 1

Casi di studio	Relazione con i tracciati antichi	Caratteri insediativi (analisi preliminare)	Tipo insediativo (analisi preliminare)	Varianti (analisi preliminare)
Acerenza	Regio tratturo Campania - Puglia (tratto Potenza-Bari)	Testa di crinale e acrocoro	TIPO 1 L'insediamento scavato è ubicato sullo stesso versante orografico del nucleo urbano consolidato. Quest'ultimo ne reinterpreta la logica insediativa in rapporto alla pendenza del suolo	VARIANTE 1a Insediamento scavato in continuità alla testa di crinale sul fianco nord (è morfologicamente determinante nella strutturazione dell'organismo urbano)
Tolve	Regio tratturo Campania - Puglia (tratto Potenza-Bari)	Testa di crinale e acrocoro		
Montescaglioso	Strada degli Stranieri	Testa di crinale		
Matera	Via Appia	Crinale con promontorio		VARIANTE 1b Insediamento scavato lungo il fianco del crinale (a margine di un borgo strutturato in base ad un percorso matrice territoriale)
Grassano	Strada degli Stranieri	Crinale		
Grottole	Strada degli Stranieri	Crinale con promontori		
Barile	Via Appia	Crinale secondario		VARIANTE 1c Insediamento scavato ubicato al limite opposto del nucleo urbano più antico
Pietragalla	Regio tratturo Campania - Puglia (tratto Potenza-Bari)	Crinale		

TIPO 2

Rapolla	Via Appia	Crinale secondario	TIPO 2 L'insediamento scavato è ubicato Lungo il versante opposto a quello del crinale orografico al quale il borgo appartiene	VARIANTE 2a Struttura aggregativa posta lungo il fianco montuoso
San Giorgio Lucano	Tratturo monte-costa (tra Via Herculia e valle del Sinni)	Crinale		
Calciano	Strada degli Stranieri	Crinale con promontorio		VARIANTE 2b Insediamento puntuale, concentrato sulla testa del crinale

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Pioneer examples of planned garden housing settlements in Istanbul from 1950 and still in process

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There are 10 settlements equivalent to garden suburbs in Istanbul that were designed and implemented between 1950 and 1960. They are planned on the developing axes of the period for medium- and low-income civil servant or employee families of certain government agencies. In addition to develop a new typology for that periods Istanbul, they propose solutions to increasing populations housing problem. During the period they were built, they were at the non-occupied places of the city, but since then, the city is growing due to rapidly changing political and socio-economic factors and the settlements that are at the city center now- are still in transformation processes. Typo-morphological analysis of each neighborhood tell us a different transformation story according their location, their proximity to different functions, their density etc.

One of the 10 settlements, Kouyolu was planned by a well-known Turkish architect back in the fifties and was the model for others. Its located on the development line of the citys Anatolian side. Today, the area is experiencing simultaneous changes from suburban to urban, from housing to business, from low-density to high-density. Our research concentrates on urban, spatial and social evaluations carried out for each of 843 houses with garden on the neighborhood in order to see their level of transformation. The purpose of this typo-morphological analysis is to produce information to determine spatial qualities from which we can continue to learn in order to maintain their sustainability.

1. Introduction: Background and objective of the research

Istanbul hosts a combination of different residential urban fabric variety such as historical heritage buildings, squatter settlements, high-rise housing, gated communities, social housing etc. Old residential areas are subject to enormous changes due to exogenous factors (urban renewal projects implemented by the government and justified by earthquake risk) and endogenous factors (the demographic, cultural and social changes which urban neighborhoods undergo with forms of migration, social mobility and structural poverty). Furthermore, new residential settlements are built as a result of the growth of the construction industry, which has been the driving force of the economy in the last decade, with little concern about sustainable livelihoods of urban communities and the broader issues related to urban morphology. Against this background, this paper suggests that a close examination of long-term settlements in Istanbul and the drastic changes they were subject to can shed light on the specific spatial qualities and their implications for long-term sustainable housing structures as embedded within a broader urban morphology.

The period from 1950 to 1960 was an important period for the housing architecture in Istanbul. It offers insights to understand the formation of the housing typo-morphology of Turkey. There are still about a dozen settlements equivalent to 'garden suburbs' in Istanbul that were designed and implemented in this period. They were planned on the developing axes of the period for medium- and low-income civil servant or employee families of certain government agencies. In addition to develop a new typology for that period's Istanbul, these settlements propose solutions to increasing population's housing problem. During the period where they were built, they were at the non-occupied places of the city, but since then, the city has grown due to rapidly changing political and socio-economic factors and the settlements –that are at the city center now- are still in a process of transformation. Typo-morphological analysis of each neighborhood tells us a different transformation story according their location, their proximity to different functions, their density, their infrastructure, etc.

One of the 10 settlements that the team of researchers have studied in-depth, Kosuyolu (the largest and densest one -for his period- on Anatolian side) was planned by a well-known architect back in the fifties and can be considered as a model for others. It is located on the development line of the city's Anatolian side. Today, the area is experiencing simultaneous changes from suburban to urban, from housing to business, from low-density to high-density. Our research concentrates on urban, spatial and social evaluations carried out for each of 824 'houses with garden' on the neighborhood in order to see their level of transformation. The purpose of this typo-morphological research is to produce information to determine spatial qualities from which we can continue to learn in order to maintain their sustainability.

2. Methodology

The research[1] started with mapping studies and field study of planned housing settlements from 1950's, with high spatial qualities in order to locate them in Istanbul and identify their current state. Then we concentrated on the research on Kosuyolu settlement by reviewing the literature for its history. The publications of Turkish architects and urban planners have been used for studying and classifying information and analyzing the settlements. The mixed methods of the research consist of field observations and semi-structured interviews. This process was then followed by urban fabric and land use analysis, topography and slope analysis, volume, function and density analysis. The method developed to define the state of preservation of the building will be presented below. After what we have learned from this site we developed the method to be specific to the conditions of each singular site, because each of them tells us a different story related to the place.

1 The data used on this research is collected from: Oncel, D., Ozaydın, G., Barkul O., Cankat, A., Otkunc, A. (2014-2018) ; Oncel, D. (2017-2018 Spring Semester) The Concept of Typology in Housing Architecture, Master Class, Graduate School of Science, Mimar Sinan Fine Arts University (MSFAU) ; Aydınsoy, M. (2017) ; Bilgic, E. I. (2016); Mimar Sinan Research Center, MSFAU, Summer School Workshop (13 July-10 August 2016).

The following questions were asked in the analysis of the settlements:

- How does urban morphology change over time alongside livelihoods in these settlements?
- Is it possible to solve the problems raised by the increasing urban density while still preserving the garden housing settlement morphologies?
- What are the urban dynamics that affect the infrastructure and provoke changes in these settlements?
- Can those settlements can be sustainable structurally, spatially, socially, ecologically?
- Did those settlements affect their periphery's morphological and typological structure?
- How changes in legislations affect the social structure of the settlements and their local community?

In order to answer these questions, Istanbul housing settlements of the period 1950-60 are stated with plans and photographs, analysis focuses on their common features. Whereas the goal is to understand how the contemporary life transforms housing, we also observe how the change of life differentiates housing patterns.

3. The changing political economy and regulatory framework for housing in Istanbul

1950s witnessed significant political and economic changes in Turkish history. "After a two-party system was established in 1946 the Democrat Party came to power with the elections on May 14, 1950. Development strategies were now to emphasize the role of private sector" (Tapan, 2005: 105). Being also aware of the politics and regulation changes facilitated the understanding of 1950-60 period's architectural environment.

From the important factors related to architecture of this era, Tapan (2005) mentions the points below: First, the rapid growth of cities made comprehensive master planning a necessity. Second, the construction industry expanded rapidly to answer increasing demand. Third, a law governing buildings was introduced in the Grand National Assembly in 1951. In an attempt to regulate and discipline architectural activity, the ministry of Public Works issued new regulations for urban planning and architectural competitions. Finally, the Turkish Chamber of Architects was established by the Law no 6235 of 1954 (Tapan, 2005). According to Balamir (2003: 35), "Migration to towns, housing shortage, and lack of sufficient accumulation of capital gave way to urbanism that operated with relentless pragmatism and speculative interests".

Istanbul is the most important socio-economic, tourism and educational center of Turkey. During the last half-century, its population increased from one million to approximately 15 million. Due to its strategic location Istanbul has a very dynamic urban structure. Considered as a financial center, Istanbul experiences socio-cultural, economical and structural changes as the employment opportunities and the immigration to the city increases. But the provision of housing, public services and infrastructure couldn't keep pace with rapid and continuous population and subsequent urban sprawl. The expansion of the city in the 1970's followed the construction of the bridges over the Bosphorus and their associated peripheral highways.

4. The rationale for choosing the 10 settlements

Between 1950-70, which is one of the important periods of the Republican Architecture, the state has implemented planning for housing for civil servants, workers and peasants, and most state banks provided financial resources to make this possible, on the public land allocated from the municipality. Because of the lack of low-priced housing with sufficient quality, the government facilitated a real estate solution itself. This type of residential planning has produced many examples in a short period of time, but it was not an adequate solution to the housing problem in the cities where the population was increasing rapidly.

The settlements (from 1948 to 1962) studied in this research were progressive and socially sensitive for their period, which enabled the society to live on better terms, but they lost some

of their original qualities in the context of today's changing urban dynamics. In contrast to the times when they were built, these homes are rather in the center of the city that grew up and they became neighborhoods under the intense pressure of increasing rent and speculative activities.

Highway structure is one of the determinants of urban macroform of the city. The result of the pressure created by the development of the roads system on the settlements can be observed on the plan as the fragmentation within the urban ensemble. The first and second Bosphorus Bridge constructions and connecting roads are in the vicinity of these neighborhoods and in their areas of influence. As a result, all new peri-urban residential settlements in the period when they were built remained in the city center today.

The 10 settlements are: (1) Sumer Houses, (2) Perpa Houses, (3) Bomonti Workers' Housing, (4) Journalists Neighborhood (Gazeteciler Sitesi), (5) Guzel Houses, (6) Merbank Houses, (7) Levent, (8) Etibank Houses, (9) Selamsız, (10) Kosuyolu (Image 1). These settlements were chosen as object of study, because they represent high quality examples of Istanbul's urban development and housing culture from the 1950's. Our aim is to examine the modern and local architectural development in Istanbul both in chosen settlements and also in buildings via typo-morphological approach. Some of the settlements are partially demolished; some of the settlements have lost the original aspects of their design characteristics, they are rapidly changing from residential to commercial; and some of the housing units have been transformed into shops and restaurants.

5. The formation and main features of the chosen settlements

Sumer Houses, Perpa Houses, Bomonti Workers' Housing, Journalists Neighborhood, Guzel Houses, Merbank, Etibank and Levent are planned garden housing settlements from European side of Istanbul. Between them Levent come into prominence with its size and garden city concept. It was built on farm land and originally intended to be workers' housing to serve nearby industrial sites. Real Estate Bank developed its first important housing settlement project on the military zone known as Istanbul Municipality Levent Farm. Before 1950s, the industry of Istanbul was mainly depicted as small industry. The first planned industrialization act started after the Master Plan, which came into force in 1954. According to this plan, Levent, which was a fertile farming land and a plot for weekend excursions, became one of the districts allocated to the second or third place industrial establishments.

The settlement plan of the Levent Neighborhood was designed by Kemal Ahmet Aru and Rebii Gorbon. The settlement of 391 houses consist of independent twin and row houses contains also one movie theatre, a common area and stores on the ground floors of surrounding houses. In 1951, the first stage of construction was completed and three other stages was designed and constructed with small modifications. The last phase of the development was completed in 1958. Other phases of the construction process consisted of the following housing units: 411 detached units in 1st Levent, 1319 detached units in 2nd Levent, 277 detached units in 3rd Levent.

In general terms, the district was mainly designed as garden housing of one or two storey houses with small gardens. During the construction period, Levent Housing was mainly designed for the middle economical class and succeeded this goal for a long time (Ozkan, 2006). Today it is located on the development line of the city's European side and it is a significant representation of the variation in urban morphology. Although this neighborhood was planned essentially as a residential zone, today, most of the houses located along Buyukdere Caddesi are allocated to commercial activities. Furthermore, it stimulated the development of the city toward the north along the main radial road (Buyukdere Caddesi), which later became the most important axe of the new business center of the city. The area is also experiencing simultaneous changes from slums to apartments, from factories to mix-use (office-shopping center-luxury housing), from social housing to business, from low-rise to high rise.

Selamsiz and Kosuyolu are two settlements located on the development line of the city's Anatolian side of Istanbul. The selected sampling area show the common morphological characteristics as the plan show their location, settlement pattern, their relation to topography

and road network in the case study area. (Image 2)

For Selamsiz, after a joint competition process launched by Real Estate Bank and Istanbul Municipality, houses with small gardens catering to the middle class, the jury determined the house types and a tender is initiated. As a result of the tender, the building of 50 houses in Uskudar Selamsiz was approved. Today planned garden housing settlements are under pressure of transformation via large scale housing projects designed for upper classes.

6. The Case Study of Kosuyolu

6.1. Kosuyolu's History

Following the period of National Architecture, Koşuyolu Housing settlement is one of the important realizations of Late-Modernist Architecture (Image 3). It was built by Real Estate Bank and Istanbul Municipality in scope of the law, on the Anatolian side of Istanbul at 1951. Its settlement plan was designed by Kemal Ahmet Aru, and architectural projects by Sait Ozden and Leyla Turgut. The western side of settlement's the main street (Kosuyolu caddesi) was designed by Seyfi Arkan for Municipality employees (Akay, 2014). The construction of 100 five or six room houses in Kosuyolu was completed in 1951; the application of 315 houses in the subsequent stage was finalized in 1954. Kosuyolu worker's houses are smaller than the houses of the Real Estate Bank. According to the information obtained from the old residents of Kosuyolu, there was some kind of social distinction between two neighborhoods. Both neighborhoods had separate educational facilities. A mosque was built later on the side of the Real Estate Bank houses. Two bazaars were planned in the areas that can be considered as the center of the neighborhood, but one of them has lost its function today.

As a reflection of the Rational and Modern Architectural conception, Koşuyolu houses embodied the ideas about how social residences should be and other modernist arguments concerning housing such as accessibility, hygiene etc. The settlement cannot find the opportunity to expand more but it is still in use today despite the economic rent pressure in its vicinity. Today, around the Kosuyolu neighborhood, there are buildings that are mostly housing estates and apartments. Although Kosuyolu is not very close to the first bridge and the belt line, it can be said that it is still in its impact area. There are no high-rise buildings around Kosuyolu today, and one of the rare preserved groves of Istanbul is the northern border of the area.

Today, the settlement is changing although it is under conservation. Under the deed restrictions, no structure can be built beyond given floor restrictions. So the pattern is conserved in general, but the transformations can be seen especially in architectural qualities. (Suoglu, 2009) During the research process, for the purpose of understanding this change, all of the 824 houses have been reviewed and classified; and we have made out that instead of residential –which was the dominant function of Kosuyolu architecture-, today, it can be said that, a more plurifunctional concept is being developed in the settlement. The main cause of the change is the conversion of houses to office buildings. But it is very meaningful that Kosuyolu pattern is conserved, and we can still find a few samples of Kosuyolu Housing, which bring the architectural ideals and concepts of the period in which they were built.

6.2. Usage Changes in Kosuyolu Houses

At their design stage, 98% of the buildings in Kosuyolu were planned as housing. Research conducted by Sener and Yildiz shows that in 2000, 79% of the buildings constituted housing, 17% are commercial, and 2% are related to education. According to the research conducted by Suoglu in 2009, the percentage of housing has decreased to 68.5%. The result of our own research in 2016 shows that the percentage of housing (94% individual house, 6% residential + commercial or residential + business) has decreased to 47.3%, proving that residential use is rapidly transformed into other uses. The uses identified during the field observations are residential, business (offices), commercial (restaurants, cafes, shops), health (clinic, doctor's office, health center, dialysis center, elderly care house, etc.) and education, (school, study house, foreign language course, nursery, play house etc.).

The architectural identity of the Kosuyolu neighborhood is being protected through legal processes but the changes in usage and in particular, transformations to business and commercial space remain as the main threat. Suoglu (2009), in his master thesis on "Formation and Evolution of Kosuyolu Settlement" conveys his observations on the legal processes and the structural state of the area:

The first plan notes for the region are dated from 1966. According to these plan notes, the building laws for the region are expressed as follows (Kadikoy Municipality Zoning Directorate Plan Archive):

"The building depths have been increased to 12 m in the available parcels and to 10 m in the available parcels.

Building heights have been increased to 9,50 m for the parcels taking the façade from Ibrahimaga-Altunizade road (today's Kosuyolu Caddesi) and 6,50 m for other parcels.

The properties of the building types prepared by Imar Limited Partnership shall not deteriorate in the additions to be made.

Roof characters will be preserved in the additions to be made. An attic can't be constructed."

On the plan from 1997, which is still valid now, the building laws are as follows (Kadikoy Municipality Zoning Directorate Plan Archive):

Three-storey buildings can be constructed in block layout in Kosuyolu Caddesi and two-storey buildings can be constructed also in block layout in the area behind this street (maximum construction height 6,50 m from the road level).

Block length is maximum 12 m.

The distance between the side gardens is 3 m and the distance of the front gardens will be based on the current block direction.

Attention should be paid to the preservation of the building characters (especially the cantilever characteristics) of the area, for the new additions and constructions.

At basement floors, the entire parcel can be used if used entirely as a garage, with the condition to keep the building alignment at the front façade".

Although these measures aim to protect the architectural character of the neighborhood, the remark on the plan from 1997 "the whole parcel can be used if used entirely as a garage" can be used as a pretext to eliminate the whole garden, therefore it allows to impair the "garden house settlement" identity of the neighborhood. However, the structure described in the last plan notes implicitly pave the way for the change of function and usage, because a full parcel size basement garage is the need of a workplace rather than the need of a house. In addition, during our research on site, we confirmed that it has been allowed up to two basements in the new buildings. The permits and concessions made at Kosuyolu which is already in the center of the city and under rent pressure make it easier for the region to turn into a commercial area.

The most frequent usage change seen in recent years in the Kosuyolu neighborhood is seen as commerce with buildings that are transformed from housing to workplace or shops. In recent years, we observe that many businesses that have been granted restaurant or café management permits have rented houses and changed their use with various modifications. These businesses provide some kind of physical space sustainability by not completely demolishing it, but they also create -with profit concerns- closed spaces by interfering especially the gardens.

As a result, although some of the interventions made by business owners help the survival of the buildings, they also have a negative impact on socio-cultural and ecological sustainability. The transformation of the buildings from housing to business is mostly realized by demolishing the existing ones and constructing new structures. This situation negatively affects the sustainability of physical spaces.

6.3. Preservation Status of Kosuyolu Houses

At the end of the field work done in the Kosuyolu neighborhood, several status of preservation was encountered in different categories according to the accessed data. One of these categories is "Preserved" and it is encountered in a very few cases. The other

two categories are "Transformed" and "Rebuilt". These two categories are divided among themselves into to subcategories.

The method that we developed to define the state of preservation of the buildings of the Kosuyolu settlement

propose to study 5 different levels of transformation:

• Preserved: The building is fully preserved with all its details.

• Transformed - D: The building is not rebuilt, the floor space is partially protected, the upper floor is not added but the coal bunker can be enlarged and used, the architectural character is preserved, the level is preserved, the infrastructure can be partially changed, the garden is used.

• Transformed - C: The building is not rebuilt, the floor space is partially protected

(There may be parts added to the second floor), there are floors or parts added, the level is preserved, the architectural character is partially preserved, the garden is partially used.

• Rebuilt - B: The building is rebuilt, the floor area has increased, the number of floors has increased, the level has changed, the architectural character is partially preserved, the garden use is limited.

• Rebuilt - A: The building is rebuilt, the floor area has increased, the number of floors has increased, the natural level has disappeared, incompatible with the architectural character of the neighborhood, the garden has disappeared.

According to these criteria, the data below is reached when the buildings in Kosuyolu are evaluated.

• Preserved	: 17	%2,06	(red)
• Transformed - D	: 131	%15,89	(orange)
• Transformed - C	: 185	%22,45	(yellow)
• Rebuilt - B	: 148	%17,96	(green)
• Rebuilt - A	: 343	%41,62	(blue)
Total number of houses	: 824		

The most obvious conclusion of the collected data is that the category 'A' is predominant to others. As a result, we can see that nearly half of the neighborhood was rebuilt. So the buildings do not maintain the original spatial character of the neighborhood. Expression of this information on the site plan allows interpretation from many different angles and readings which can produce new information (Image 4). Briefly, these reciprocal readings can display correlations as follows:

• Between the function of the building and the state of preservation

• Between usage change ratio of buildings, their locations and topography

• Between the amount of transformation and location change of the neighborhood's center

• Between proximity to parks and green areas and the preservation level

• Between the proximity to transportation and commercial function

• Between the size and the number of floors of the building transformed to commercial space

• Between the position of the building on the corner or in the middle and its form of transformation

7. Conclusion

We evaluated changes in planned garden housing of Kosuyolu in Istanbul with the prospects that the results of the study can be utilized to contribute its sustainability. Through the mediation of this research, it was seen that the housing settlements of 1950-60 period actually includes many common points with the contemporary housing of 21st century. Kosuyolu housing settlement adopted the changes without losing their unique identity. That means, these settlements of 1950-60 still are actual, healthy, sustainable environments with their many features.

It is crucial to understand concepts and connections regarding existing urban morphologies. This will allow us to analyze the formation and development of urban tissues in order to foresee design strategies for contemporary urban habitat. The database on

planned garden housing settlements in Istanbul produced information that can be used to develop new sustainable models to answer present demand in Turkey. Sustainability can be achieved in several ways: sustainability of urban morphology, sustainability of residential function, sustainability of neighborhood life (Yildiz, 2015). There are settlements (like Kosuyolu) where the buildings changed while functional and social sustainability is maintained. There are other settlements where buildings also changed but the green spaces are preserved.

The important task for architects, urban planners and designers is to act as articulators of spatial visions. They do that by understanding human activity on space, so they can propose later on interventions that might improve existing conditions. Studying pioneer examples of garden housing settlements in Istanbul provides us valuable information to achieve this task.

Figure 1. 10 Pioneer examples of planned garden housing settlements in Istanbul and their relation to urban infrastructure.

Figure 2. Selamsiz and Kosuyolu settlement, their location, settlement pattern and their relation to topography and road network.

Figure 3. Aerial photos of Kosuyolu settlement from 1966, 1982 and 2017.

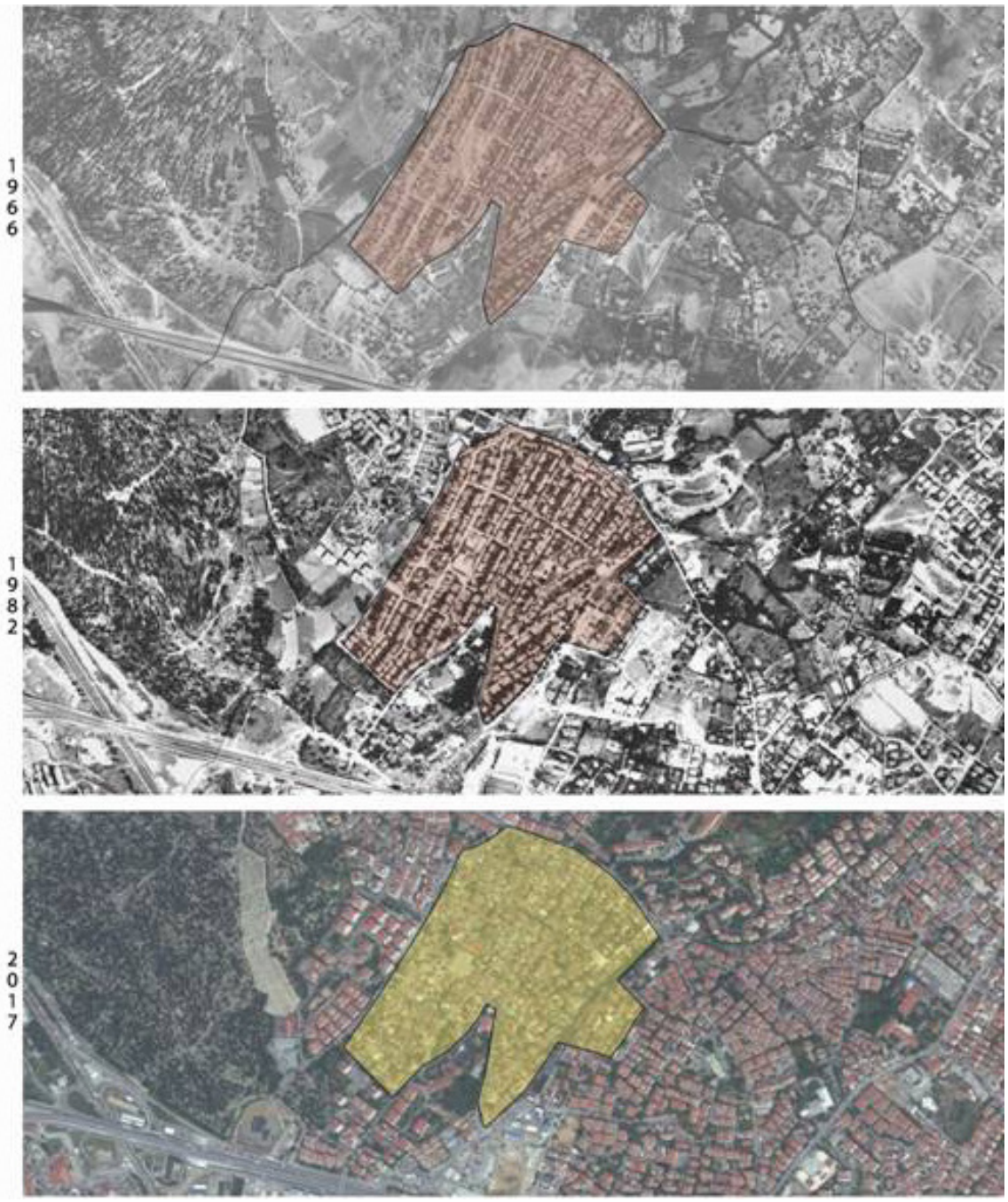
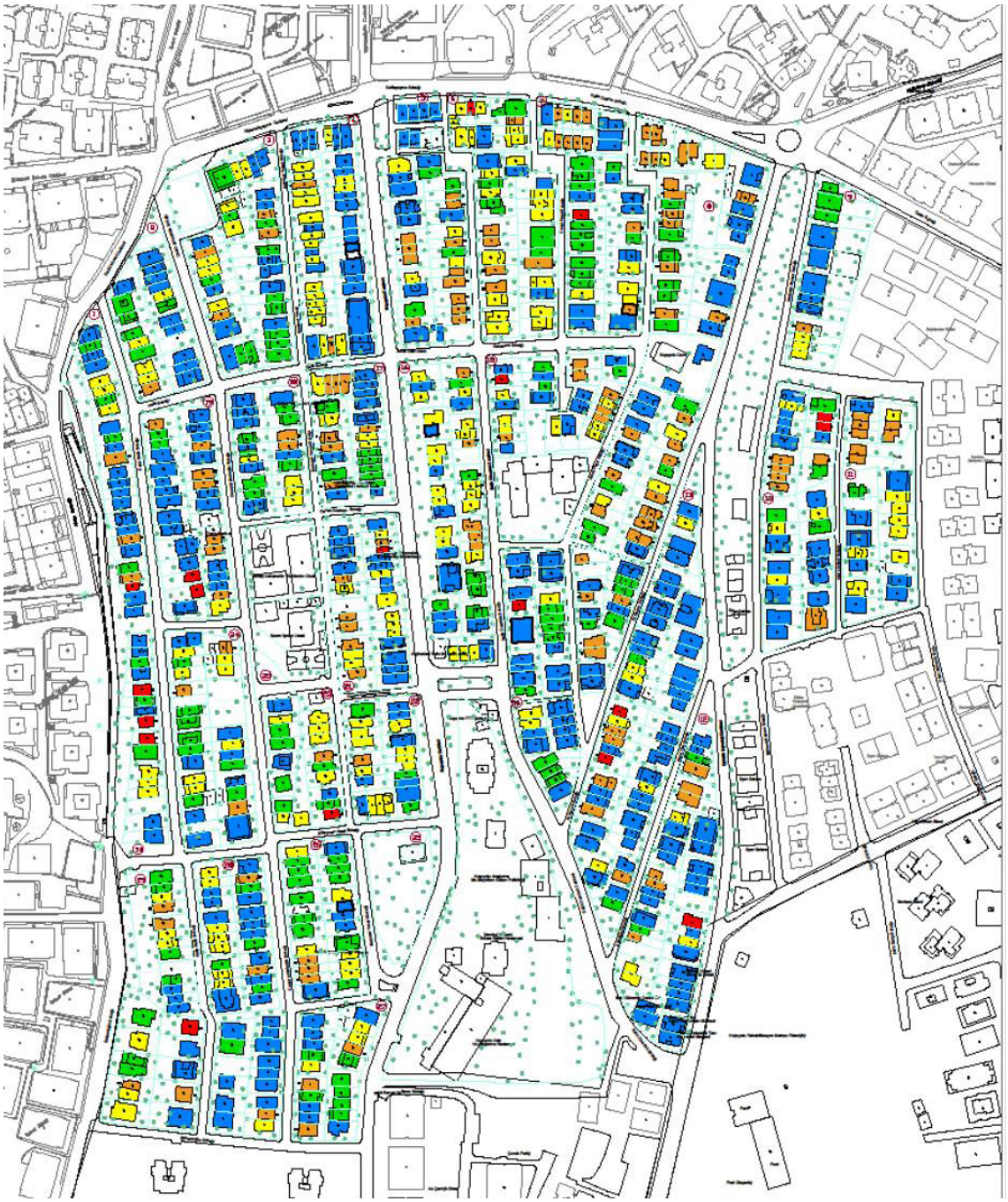


Figure 4. State of preservation of the buildings of the Kosuyolu settlement.



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Urban development and the informality of Tirana city

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Albania has faced different economical and political factors, external and internal ones, which influenced its development, especially the changes of regime in 1990. Albanian development, in the last decades, is characterized by emigration and internal migration, both population displacement happened in an uncontrolled way. The internal migration brought to the rapid growth of certain Albanian cities, like Tirana, Durres, etc. Tirana, as the capital city, has quadrupled the population facing a spontaneous urban sprawl. Informal settlements were surrounding the former city due to unprepared government and local administration for these changes and rapid growth; also due to lack of appropriate legislation to take under control the development of the territory.

The informal settlements were lacking basic services and infrastructure, transforming and urbanizing the former agricultural land. The informal constructions were not build only in the outskirt, but although in the existing urban structure, modifying the existing urban form. All this informal development brings with it social, economical and cultural problematics.

This paper aims to present the structure of different morphological urban patterns, which better represent the informal development of Tirana and surroundings. The identification of the urban patterns will be based on different physical, social and cultural aspects. Reading the evolution of the urban structure, evidencing the role and influence of the informality, is very important for future decision-making of the city regulatory plan. The methodology used for this research will follow a phenomenological approach towards the understanding of the urban process, based on inquiries of different types like observational, desk research, field study and descriptive research.

Introduction

Albania has faced different economical and political factors, external and internal ones, which influenced its development, especially the changes of regime in 1990. In the last decades, Albanian development characterized by emigration and internal migration, both population displacement happened in an uncontrolled way. The internal migration brought to the rapid growth of certain Albanian cities, like Tirana, which, as the capital city, has quadrupled the population facing a spontaneous urban sprawl. Informal settlements were surrounding the former city due to unprepared government and local administration for these changes and the rapid growth.

It is important to analyze and study the actual urban morphology of the Albanian cites for better understanding the way the settlement systems are structured and all the aspects related to it. The urban areas are a dynamic system in continuous transformation, it is important to identify the key moments where to focus the analyses of this continuous process. The urban sprawl that characterize the development of Tirana, after the '90, with the changing of the political regime, accompanied by spontaneous and uncontrolled urban development, underline the importance of this process which reflect the relation between the anthropic phenomena and the built urban environment.

This paper aims to present the structure of different morphological urban patterns, which better evidence the informal development of Tirana and surroundings. There are different aspects helping on identifying the urban patterns, like physical, social and cultural aspects. Reading the evolution of the urban structure, evidencing the role and influence of the informality, is very important for future decision-making of the city regulatory plan. The methodology used for this research will follow a phenomenological approach towards the understanding of the urban process, based on inquiries of different types like observational, desk research, field study and descriptive research.

Albanian context

The end of the Second World War signed the totalitarian socialist regime as a political leading force. The centralized regime oriented and planned the development of the whole country, distributing in the territory the main economical, industrial and agricultural aspects, to make these works the demographic distribution and internal migration was strictly controlled. Almost 80% of the Albanian population had to live in the rural areas; arable land doubled in size within the period 1950-1989, while the average residence area per person was 6-8 m^2 (A Potsiou, 2010). The ownership and private property was not allowed, everything was owned and managed by the government. This condition embodied different aspects, and influenced different decision-making in several sectors, although in the city planning. One important aspect is the car ownership; people could not use private transportation, so every movement was based on public transport, bicycles or walk. This influenced the urban planning too, not providing parking places in the urban infrastructure and not considering the traffic problems.

The owned private property by the government, gave the opportunity to the state to manage all the agriculture land, centralizing the use of it. This gave the possibility to expand the cities, industrial areas and all other functions, as the central Design Bureau (part of the National Building Institute) planed to, without any obstacle. Urbanization, as any other field of economy, was keep under controlled by the state. During the communist period, the state tendency was to develop the rural zones. The control on territory was also achieved by introducing the yellow line concept which made the division between rural zones and urban ones (Aliaj, Lulo, & Myftiu, Tirana the challenge of urban development, 2003), in order to promote the concept of 'the working class' the urbanization pace speed up a lot during the totalitarian regime. Later on, this pace of urbanization changed this tendency. In the communist period, the state has a social obligation towards the worker, to provide him a house.

The accelerated urbanization process, during the first years of communist period, dictated by the quick industrialization of the country, fulfilling so the need to provide accommodations

to the working force close to their working places. On the other hand, housing needs increased drastically due to very low renting tariffs (housing stock although was owned and managed by the state). A major reason in that big demand for housing was also the lifestyle and the mentality of those years. The number of families increased very quickly, during 1970 - 80 the growth was 35% as compared to the population growth, which was 25% (A Potsiou, 2010).

During this period, Albanian government isolated itself interrupting economical exchange with the entire "capitalist world". The government disseminated different slogans trying to indoctrinate the population. The isolated economy and the totalitarian regime brought different limitation and problematics in all the sectors.

Detailed urban studies and rational plans were prepared by the central Design Bureau, which was composed by selected experts. Despite the quality of the studies, urban planning was used as a tool to orient the development of the urban area of the cities. The extinction of private property in Albania gave free hand to planners, since the only actor in urban development was the state. The tendency was to keep the city compact and not spread it towards the peripheries, since the only transportation means were public transport (few lines), cycling and walking.

After 1980, also with the death of the dictator Enver Hoxha, all the economical and technological depression, accompanied with all the political changes in the East Europe, brought the country to radical changes after 1990.

Socialist urban pattern

For the National Building Institute, acting in Albania during the regime, the territorial division of the "capitalist" countries was seen with criticism, all in relation to the economy and profit, not a human scale, this inducted the Albanian professions at the time to develop other territorial divisions, or at least, to explain the proposed division differently (Faja & Alimehmeti, 1983). The development tendency, at the time, was not in line with high-dense residential areas. The following units composed the territorial subdivision: residential block, residential complex and residential neighbourhood.

Residential block – the smallest structural unit, composed by some multistory residential buildings including the most indispensables necessary services (kindergarten, grocery stores). Residential complex – composed by some residential blocks, with daily service needs (kindergarten, elementary schools, commercial, sports). Residential neighbourhood – the biggest territorial structural unit, composed by some residential complexes with periodical services (kindergarten, elementary schools, administrative services, health, culture, commercial).

The dimensions of the residential block depend on the number of the inhabitants and the surface of the site. With the intent to have a rational and efficient use of services, the number of inhabitants was controlled. The average number of inhabitants per residential block was 1500-3000 inhabitants.

The surface of the residential block is in close relation with the density of the residential buildings and their height, although from the morphological condition of the terrain, and the climatic conditions. Considering residential buildings up to 4-5 floors, in normal conditions, the surface of the residential block is about 3-5 ha, with a density of 600 inhabitants/ha. The residential block composed so by residential building and the surrounding surface; the greenery area with sports grounds; infrastructure and commercial areas.

The residential territory takes almost 60-70% of the residential block; this percentage depends on the building floors and the physical condition of the territory. In the residential territory are included although the green spaces in-between the buildings, spaces that serves for playground for children and relax areas for the inhabitants, these areas should not be smaller than 7-8 m^2/inhabitant (not including the infrastructure).

The common green areas, including kindergartens, relax and sport areas, should be around 7-8 m^2/inhabitant. These areas should be opened and well exposed to the sun, with the possibility to serve even for the evacuation in extraordinary situation (Aliaj, Housing Models in Albania between 1945-1999, 1999).

The yards of the residential buildings have different shapes, opened, semi-opened and closed. The most used are the opened ones. The closed ones are used for wind protection and offering a safe space for children.

The commercial space, as an important area and or its function, usually is positioned close to the road, not included to the residential building, but in some compositional schemes, it is a junction between two different residential buildings. Those areas should have enough space in the surrounding for the normal functioning and enabling the sufficient lane for the people passing by, although enough space for the furnishing in the 'behind'.

The design of the residential blocks and complexes is based on different compositional schemes: the (closed) perimetral/circumferential, in a row and the combined of both, distribution of the residential buildings. The residential complexes are mainly designed with the combined schemes of buildings.

The cities were growing and it was very important to decide and design the "right" densification of the residential blocks, not only for the political, economic and social aspects, but although in respect of the comfort like: the noise, ventilation, common spaces, green areas, playground, etc.

Urban development in transition

In 1990 the political development in Easter Europe and the changes of the Regime in Albania brought a transitional period where all the dynamic in governing the country changed, but also the mindset and the culture of the population. Liberalization initiated many processes, a private sector emerged and decentralization of state responsibilities was initiated. In 1991 in Albania, the transition from state to private land management started with the privatization of agricultural land to rural residents. In 1993-1994 took place the restitution of urban properties to former owners and privatization of housing stock to the occupants (Pojani, 2011). Several privatization laws have been implemented.

Seeking a better life conditions and employment, as a fundamental human right, started the process of free movement of people, characterized by emigration, toward the developed countries, and the internal migration, toward the main cites where the economy was flourishing. The demographic phenomenon of migrating in Albania increased the demand for housing, causing a boom in construction sector that the state found difficulties to control. Lacking experience and knowledge about "private ownership rights" and the importance of keeping records updated, people started to move freely from the rural areas and the 'shrinking' cites and to settle illegally either close to developing urban areas.

As cited previously, cars came in use after the '90, influencing the sprawl of the city towards the peripheries and the surrounding agricultural land. The number of the cars increased extremely. The car still perceived as a status, while other transportation ways seems dedicated for poor people. Despite reducing distances, the increasing numbers of cars evidenced the need of parking space, to a precious value of land for housing and the unplanned former city for parking place. Also, this evidence the need for new infrastructure to face the traffic problems, and link different places.

New housing were built in periphery and surroundings, as well as inside the former city. In the periphery were build entire residential neighborhoods, instead in the inner city new buildings were inserted in the existing urban fabric causing the change of the urban structure.

Referring to UN-HABITAT it is estimated that, approximately, 6-8 billion USD has been invested in informal development construction in Albania, and 40,000 hectares of land are occupied either illegally or informally. Approximately two thirds of buildings in urban areas in Albania are informal developments, almost new constructions built after the the social and political change (A Potsiou, 2010).

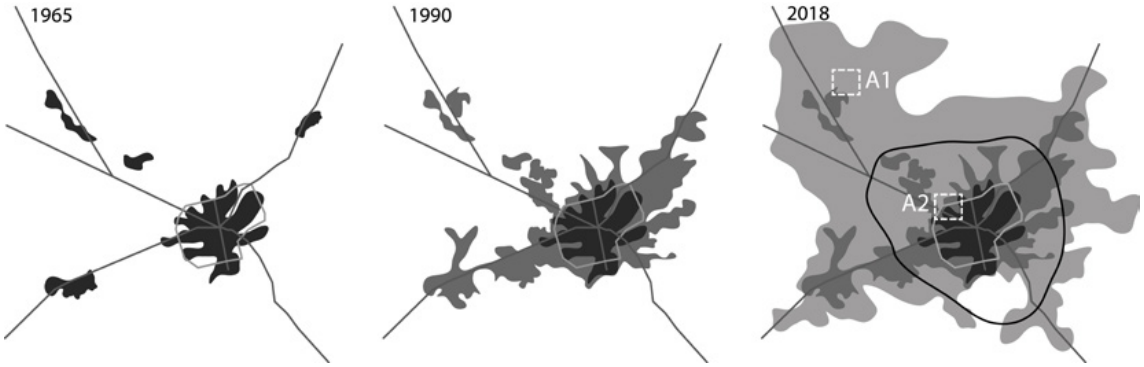
Tirana

In the transition period, 1990-2018, Tirana follows the worldwide trend of urbanization and resembles more and more a dynamic and complex metropolis. It is the main city of Albania acting as an attractor for many aspects. In almost 25 years, Tirana quadrupled the

number of the residents and faced an imposing urban sprawl. Beside the historical, political and administrative center, which even if in a continuous process of change somehow has a consolidated urban form, the other parts of Tirana have an impermanent urban structure. Tirana is a city of twin fantasies, of order and chaos, of the attempt for rationalization (rational urban planning of Italian and Socialist period) and laissez-faire attitude (Veleshnja & Pllumbi, 2015).

In this period of important changes, Tirana faced the most important urban alterations and urbanization "stress" in the country due to its position as the capital of Albania. As the most important city in the country, Tirana becomes the core target for migration of the population from other small cities. The urbanization step in the early '90 stuck between 7%-9%, translated in no less than, a doubling up the city surface and tripling of its inhabitants (Bërxholi, 2000). For the public authorities was quite impossible to find a balance among the huge and fast need of citizens and a flat transition process in market economy. This kind of misinterpretation was not only due to lack of information but most of the times was a mind-set issue which produced the perfect situation for people who took advantage of the confusion and made the first step on using public property without any legal provision. The government, during this period, was not able to control the situation in order to fulfil the accommodation needs and prevent informality.

Figura 1. Tirana, spatial development (A1, A2, study cases).



The internal migration of the population brought to a conspicuous need for housing. The population of Tirana increased rapidly, the central and local government were unprepared and unexperienced to this demographic phenomenon. There were no clear instruments to regulate the densification of the former compact city, and the urbanization of the surrounding areas. The lack of governance capability (intentional or unintentional) created the condition for the population to find a solution for housing basing at self-arrangement, giving birth to different typologies of buildings and informal settlements.

Understanding Urban informality

The urban sprawl, characterized by the informal settlements, urbanized the surrounding areas of the city. The word *informal* (informality) was used to explain the urban development, it is important to understand the meaning and how this terminology is used elsewhere.

The notion of informal housing firstly used in the researches carried out in Latin America during 1970-80, involving different fields of expertise. This terminology, at the time, was used primarily to explain the nature of informal work and did not directly confronted the spatial aspects of urbanization (Roy & AlSayyad, 2004).

Urban informality expresses the manifestation of informal processes in the urban environment. Theoretically this phenomenon is accompanied with some others notions like slum, culture of poverty, urban poverty, immigrants, marginal, etc. Despite the physical aspects of the forming locus of urbanism, the urban mode of life involves a more general acceptance of social factors. Density, which often accentuated friction and spatial

segregation; heterogeneity, which often resulted in social instability and insecurity; anonymity which often led to the emergence of individualistic survival mechanisms among urban residents, who were assumed to have come from the less conflictual countryside (Wirth, 1938).

De Soto proposed creating "liquid capital" from "dead capital" by "legalizing" or "formalizing" "extra-legal" or "informal" assets through a system of property entitlement. Such a liberalizing framework is based on what De Soto has called "deregulation, de-bureaucratization and privatization…to reduce the role of government and focus the state's energies on law and order, defense, money supply, infrastructure, and protecting private property so as to unleash the power of market forces to accelerate economic development (De Soto, The Mystery of Capital: Why Capitalism Triumphs in the West and Fails Everywhere Else, 1994).

Urban informality in Tirana

The urban informality that the city of Tirana faced during those years shows different expressions compared to the global context. The physical aspect is determined by the mentality of the social groups that were developing those self-organized areas. There is one important aspect of the Albanian mentality; the dwelling is a sacred thing. All the earnings, savings and remittances from the emigration were investing on housing. Due to tis fact, the new informal housing stock does not express itself commonly as slums. Those building does not show any particular architectural language, but mainly they are curated and well maintained.

The urban informality finds different expressions on the built environment, in the following will be shown the attempt to categorize these different expressions and how is modified the urban pattern. The urban informality can be divided in two main categories: *the urbanization of the surrounding agriculture land (sprawl)* and the *informal interventions in the urbanized area of the former city (additions)*.

Sprawl

The city of Tirana was contained within e yellow boarder line, decided by the Central Design Bureau up to 1990. The surrounding agricultural and arable land was the easy target of the new immigrant toward Tirana city, close to it, but not in it.

The agricultural land was organized in parcels contoured by the irrigation systems of channels, which also served to the coming population as the physical border of the parcels they self-owned. The coming population merely moved in groups, people from same place, or same family origin. Although, moving to new places, surrounded by unknown people brought to an architectural defense solution, high fences with many protective solutions on the top it. This contingent transformed totally places like Kamza, from almost 90% agricultural land, with few housing and some industrial areas to a total urbanized area. Some data from the registration shows evidence that there are living 125,632 inhabitants in the new municipality of 37.18 km^2, with a density of 3,379.02 inhabitants/km^2.

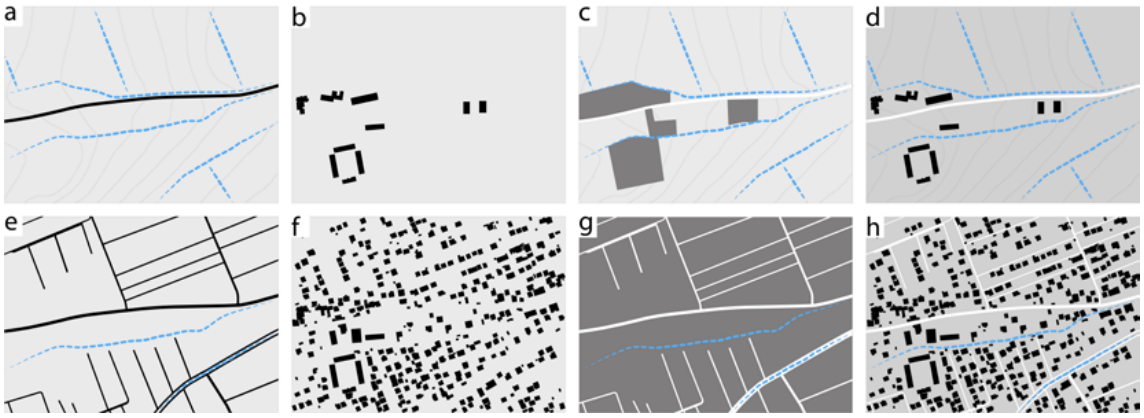
This migration gave the possibility to people to come close to an important developing city of Tirana, but the area they were developing were a marginalized are. Many people were continuing their country habitudes, maintaining active the use of agriculture and farming for self-needs. The self-organized area was lacking the infrastructure, as there were a total absence of the government (Aliaj, Dhamo, & Shutina, Between Energy and the Vacuum, 2010).

These new areas were not providing any services to the population, nor any public space. Not any of the standards of urbanization were implemented. After many years of urban informality, many actors entered in scene trying to investigate liberalization as a process of socio-spatial restructuring, manifested in such things as informal urban development. Different actors like NGOs or Government, were understanding and evidencing that older modes of urbanism are being replaced by "new" forms of urban informality that challenge the "blasé" urbanites, the segmentation of the urban areas (Sennett, 1969). There is a long

and difficult process of legalization going on, in parallel with many other instruments there are furbishing those new informal urban areas with infrastructure and services.

The informal urbanization of those areas, as a way of life, needs to be approached from different aspects like, the physical structure, a system of social organization, a set of attitudes and ideas of individuals or groups (Wirth, 1938).

Figure 2. Sprawl, evolution of the morphological pattern of the former agricultural land: a-e road and irrigation system, before - after; b-f buildings, industrial buildings before – residential 'villas' after; c-g buildings footprint zoning, before – after; d-e urban pattern, before – after.



The new urban pattern, those areas provide, shows the total urbanization of the former agricultural land surrounding Tirana, presenting nowadays low-dense buildings. The informal housing, in those areas, merely are expressed with 2-3 floor villas, surrounded by the private yard. The structuring of these areas have two facilities, the regular geometrical division of parcels, following the agricultural ones, and the unfinished process of legalization, which gives free hand to decision-makers. The improvement of the physical environment of those urban informal areas is an on-going process; still a lot needs to be done on the social and cultural aspects.

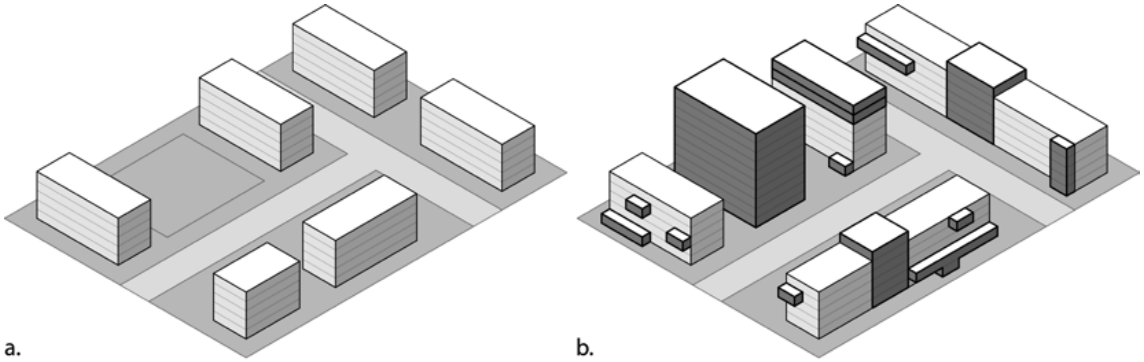
Additions

The ownership patterns faced major changes too. Successive to the law of 1992, "On the Privatization of State Dwellings", all the communist residential building blocks could be privatizing, according to the specific laws and regulations, meanwhile the land on which the buildings were established could be shared ownership by the dwellers of that building. Up to 1994, 99% of the state owned building blocks were privatized (Andoni, 2000).

Due to the political and economical changes, the communist residential building block has been gone through many challenged processes to fit the new society needs, the property pattern and the open market regarding housing issue. These challenged processes in most of cases were not "friendly" in terms of space and they vary from renovation to total abandonment. In difference with these extremes of the post-communist era all over the ex-communist countries, in Albania in the most cases the transformation has been done through the extensions or the addition to the existing residential building block. Many factors had their contribution in the way that the communist residential building blocks were being transformed, almost all of them in an informal way.

According to the annotations done on the frame, the informal interventions can be classified referring to their physical internal and external features, like follows: *Horizontal transformations*, *Vertical transformations* and *Infill transformations*.

Figure 3. Additions, the typology of the informal interventions in the existing urban areas: horizontal transformations, vertical transformations and infill transformations.



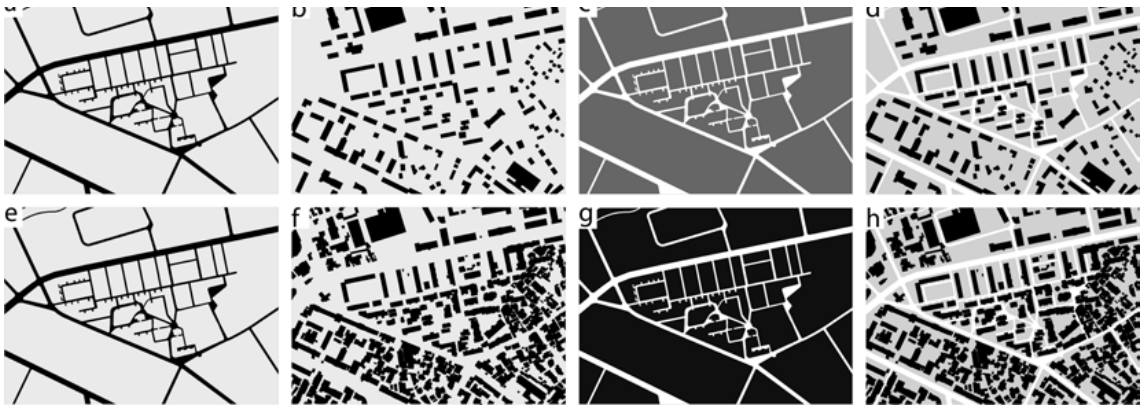
Internal transformations have to do mostly with modifications in the function of the apartment, usually from residential apartment to a commercial one in the ground and first floors. In some cases, the internal transformation is done in parallel with horizontal extensions of the apartment, to provide accommodations for residential usages too. This is the typical case of private usage of the private property.

External vertical transformations can be realized in the form of: a continuous multi-storey extension lengthways the complete height of the construction, random extensions in the upper-floors and terrace additions.

Infill transformations are construction interventions in the public land inside the communist residential building block. Infill transformations typically are positioned divided from the communist flats as individual single or multi-story constructions. Even though they are not interventions done to the existing building they are a morphological item, establishing the urban tissue created due to these housing typology, instead of the block as a construction item.

The morphological pattern of the former Tirana city has changed drastically. Originally presenting quite well organized urban pattern, with a clear infrastructure system, this does not mean offering qualitative public spaces and well functioning traffic system (in a lack of private transport). The former urban structure, fulfil quite well all the urban standards, mainly in numbers, not necessarily qualitatively. With the transformations and additions, the former city has become very complex, lacking extremely spaces for normal daily activity. The city has become very compact, offering commercial activities all-around, but lacking all the other urban standards, as the legislation dictate.

Figure 4. Additions, evolution of the morphological pattern of an area within the former city: a-e roads system, before - after; b-f buildings, before - after; c-g buildings footprint zoning, low dense before – high dense after; d-e urban pattern, before – after.



Conclusion

This paper try to present the evolution of the urban development, in Albania, especially in Tirana city, and which are the key aspects that more influenced its urban structuring. All the steps evidenced in the paper aims to help, for a better understanding, the actors involved in the process of the decision making for the city of Tirana.

Despite the theoretical and global aspects that guide the process of regulatory plan and the decision-making, there is crucial to understand very well the context and the social groups that live in. Although, all the political and economical factors that guided the process of the urban development up to this period. The informality in the urban development is one of the main aspects where to focus the researches, because it dictate not only the morphology of the physical environment, but also the social and cultural aspects. The stratification, not only of the physical built environment, but also of the overlapped communities, with all the problematics related, are important factors that influence the future urban development.

The complex urban structure of Tirana city is developing toward a multiple nuclei model, but still presenting various deficiencies. The deficiencies has to be identified in each part of the city and contextualized, because the city of Tirana present a heterogeneous urban fabric.

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Proto-urbanized Mongolian landscape

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The boundaries between nomadic and sedentary society have always been poorly defined within the Mongolian landscape, and their relations have always been characterised by a dual aspect: a deep hostility for their reciprocal lifestyles and, at the same time, a strong interest for their mutual economic systems, considering indeed the production complementarity.

Omitting the large settlements dating back to the proto-Mongol and Mongol period – of which the traces are currently subject of archaeologists – attention has now turned to the morphological characters of proto-urban settlements established in Mongolia since the early 20th century.

Despite these settlements have always attracted little interest by the scientific community perhaps because are based on settlement experiences so-called informal/spontaneous are currently at the centre of attention as involved in urban regeneration programs mainly aimed at retaining the residents, discouraging the exodus towards the metropolis of Ulaanbaatar. Based on this consideration, the paper attempts to develop a 'design reading' of some of these settlements by investigating their typo-morphological aspects, with the aim to inform new sustainable planning strategies, to the scale of landscape and thus of the urban settlement.

The boundaries between nomadic and sedentary society have always been poorly defined within the Mongolian landscape, and their relations have always been characterised by a dual aspect: a deep hostility for their reciprocal lifestyles and, at the same time, a strong interest for their mutual economic systems, considering indeed the production complementarity.

Omitting the large settlements dating back to the proto-Mongol and Mongol period – of which the traces are currently subject of archaeologists – attention has now turned to the morphological characters of settlements established in Mongolia since the early 20th century[1] (Fig. 1). Despite these settlements have always attracted little interest by the scientific community – perhaps because are based on settlement experiences so-called informal/spontaneous – are currently at the centre of attention as involved in urban regeneration programs mainly aimed at retaining the residents, discouraging the exodus towards the metropolis of Ulaanbaatar. Based on this consideration, it is deemed that the acknowledgement of the morphological characters of these settlements could allow conceiving new sustainable planning strategies, to the scale of landscape and thus of the urban settlement.

In details, the triple administrative level on which the entire Mongolian territory is set, must be acknowledged first of all:

- 21 *aimags*[2] (provinces), each of them centred on a settlement, whether centre or capital of the *aimag*; (1st order settlements);
- 331 *sums* (districts), each of them in turn centred on a settlement of district type (sum centre); (2nd order settlement);
- *bagh*, municipal sub-districts; (3rd order settlements)

The settlements that begin specializing the Mongolian landscape since the last century are in line with the logics of the afore-cited administrative divisions and in turn, related to five main settlement categories. These categories allow to catalog informal settlements according to the main functions and production activities that have determined the foundation of the settlements themselves. There are:

(i) commercial and agricultural cities, which arose in favourable environmental conditions for sedentary activities and along the main communication routes. With regards to commercial and agricultural cities, Alicia Campi states: «...the few known historical settlements in Mongolia that pre-date the Manchu Chinese period...These cities are in the traditional heartland of Chinggis Khan and his tribe and in areas of Mongolia which had contacts with pre-Mongol peoples. Some of the cities mentioned in the essay are the city of Karakorum, great capital of the Mongolian Empire erected in the Orkhon Valley, historically known as first pole at territorial scale settled in Mongolia, reached through a road branching out from the ancient Silk Route, it is crossed by the Orkhon River and characterised by the presence of a vast pasture area; the city of Khovd, which rises to the west of the country, in an oasis area, along a road branching out from the Silk Route; the city of Avarga, first capital of the Mongol Empire founded near the Kherlen River, in an area characterised by the presence of medical mineral springs and good pasturelands»[3].

(ii) monastic cities, which rose near monasteries built between the 16th and 19th

1 Moreover, the reasons that led to the foundation of cities in Mongolia before this period, seem to be less clear. «The history of urbanization per se has never been researched. There are allusions to the process of city-building in local Mongol histories of the country's national and provincial capital centres...The Mongolian historian Sanjdorj has investigated borde horse markets and the special settlements connected with Chinese traders appearing in Mongolia as early as the late 1500s and 1600s (Sanjdoji 1980:28). Mongolist C.R. Bawden has written that: permanent centres of population began to grow up around the monasteries, especially Urga, and administrative centres such as Uliastai (Uliyasutai or Uliasutai), Khovd (Hovd) and Khiakta (Kyakta), and from the eighteenth century onwards markets and farms made their appearance there (Bawden 19698:13). However, the story is known only in bits and pieces». Campi A., The rise of the cities in nomadic Mongolia, in O. Bruun, L. Narangoa, Mongols. From country to city. Floating Boundaries, pastoralism and city life in the Mongol lands, Copenhagen 2006, p. 21.

2 With regards to the meaning of *aimag* (*ayimaq*, *ayimagh*, *aimak*): «Originally meaning 'class' or 'type' the word *aimag* was used by the 18th century for the four traditional divisions of *Khalkha* and then for the provinces of Mongolia and the sub-regional units of Inner Mongolia».
Atwood C.P., Encyclopedia of Mongolia and the Mongol Empire, New York 2004, p. 5.

3 Campi A., *Op. Cit.*, Copenhagen 2006, p. 26.

century, along the main communication and trade routes. With regards instead to monastic cities, Alicia Campi states: «Cities that developed from Buddhist monastic sites in the 16th-19th centuries represent a significant number of Mongolian cities. However, this fact should not be exaggerated. It must be remembered that there were over 700 active monasteries in the pre-communist period. The vast majority of them did not result in the establishment of permanent towns, so the fact there was a monastery in a region did not necessarily mean it would lead to a sustainable urban settlement». Based on this aspect, it is important to note how: «Most sites of monasteries were chosen because those sites were geographically suitable for permanent dwellings, and in fact may have been built on or next to sites known to have historically supported sedentary life. *Erdene Zuu* Monastery developed in this manner. The monastic sites which have survived to the present era generally were situated on good communication and trade routes»[4].

(iii) military cities, mostly founded near military fortresses and located in territorial strategic control positions;

(iv) political cities, meaning newly founded settlements as erected intentionally by the Mongolian Government during the communist period to satisfy administrative needs. They are particularly diffused in the area of the Gobi desert where mostly *aimag* with an oblong shape – and with aimag's capitals located in the upper part of the provinces in order to be more sheltered from Chinese invasions (from south) and be near the steppa – can be found;

(v) industrial cities, founded around mid last century with the aim to lead Mongolia towards industrialisation. Many of these cities rise at north of the country near the main mines and agricultural areas.

Based on this classification of merely functional character, let's to analyse the urban morphology of some of these settlements by selecting one for each category. The selected cities are mainly located in the area at the border between *Tov aimag* and *Dundgovi aimag*, and correspond to: Bayanchandmani (agricultural city), *Zunmod* (monastic city), *Choy* (military city), *Mandalgovi* (political city) and *Baganuur* (industrial city).

From the Mongolian landscape structure to the building aggregate

Considering these settlements are characterized by informal courtyard fabrics[5], the analysis focuses on four scalar levels: the relation between urban settlement and environment hosting it, the urban organism, the urban aggregate and building type. In particular, it is possible to notice these settlements are mainly located in flatland or valley conditions, between the steppe and the Gobi desert, and that take place straddling to the main route structuring the entire Mongolian landscape: i.e. the route east-west oriented and identified as main ridge-top route of the Mongolian landscape itself (Fig. 2a). The urban settlements analysed are mainly structured by two main routes, extending at vast scale and oriented north-south and east-west, respectively. Those north-south oriented[6] play the role of matrix routes (1st order) of the fabrics, and in the specific case of *Bayanchandmani* and *Zumnod*, are developed in parallel to the water streams that cross the fabrics. Those oriented east-west instead[7] are configured as transversal routes to the matrix routes (2nd order) and thus as secondary structures of the settlements.

On the basis of a compared reading of the different settlements analysed (Fig. 2b), it is possible to notice that, when the two routes intersect, within the settlements a large

4 Campi A., *Op. Cit.*, Copenhagen 2006, p. 33.

5 meaning only partially planned.

6 and that within another the publication of the author (Scardigno N., 2018, Landscape as *forma mentis*. Interpreting the integral dimension of the anthropic space. Mongolia, Franco Angeli: Milano) are identified as secondary ridge-top routes or river-side routes, according to the soil morphological conditions, and hierarchically configured as 2nd order routes within the Mongolian landscape as branches of the main ridge-top route (1st order route) that crosses from west to east the entire Mongolia territory – and that sometimes play the role of connecting elements between the same ridge-top route and the almost parallel silk road to south.

7 always recognized within the same monograph on the Mongolian landscape published by the author and identified as sort of cross-ridge routes (3rd order routes) – and thus with a development almost parallel to the ridge-top route – or simply identified as local connecting routes (4th order routes) at vast scale.

spaces is configured – see *Choir*, *Baganuur*, *Mandalgov* and *Zumnod* – or as in the case of *Bayanchadmany*, a change of morphology occurs within the fabric: a data, this latter, which – probably – testify the fact that the current urban tissue of the settlement is the result, at least, to two distinct evolutionary phases.

Furthermore it has been noted that except for *Mandalgov*, whose administrative area occupies a nodal position within the settlement, the specialistic function/area[8] that generated the foundation of the settlements, tend to occupy an anti-nodal position in all cases analysed: i.e. a peripheral position in relation to the same urban centres, mainly located along the routes north-south oriented of the settlements, reaffirming in this way the role of matrix routes of the settlements themselves.

In addition to the main two routes, the fabrics are structured on the basis of two further order of routes: planned building routes (3th order), i.e. routes usually branching off from the matrix route, and along which the courtyards are aggregate to configure long blocks; and – as result of a progressive maturation of the fabrics – so-called connecting routes (4th order), that is routes joining planned building routes on the settlements edges and by interrupting the unity of blocks and thus the linear aggregation of the courtyards – the case of *Baganuur* is particularly emblematic in that sense.

About to the courtyard unit, a basic type can be recognized – with regards to the size and organization of internal spaces – featuring an almost square shape with side of about 25-35 metres. It can be accessed directly through an entrance carved out from the south or north fence wall – according to the shape of the block and courtyard orientation – and presents inside a dwelling with pitch roof or a *ger* – or both – generally positioned along or near the north fence wall, or on the side opposite to the entrance, facing south. A small wood structure hosting the toilet is generally located in peripheral position inside the fence, occupying the corner between the east or west fence walls and the wall featuring the courtyard entrance (Fig. 3a). Courtyards shaped as extended rectangle are also diffused within the urban fabrics. In this case, the long side of the fence develops along the planned building route or in-depth, favouring in the last case, the formation of less serial blocks. In the rectangular-shaped courtyard, the organisation of the spaces inside the fence remains almost unaltered.

With regards to aggregate forms, there are mainly three types of blocks within these urban fabrics (Fig. 3b):

(i) block type, obtained through the simple serial-linear aggregation of fences – with sizes typical of the basic or rectangular model – with long sides corresponding to the north and south sides of the fence, and constant thickness of the entire block (about 30 meters). In fact, in this case, the courtyards are located adjacent to each other – i.e. have two sides of the fence in common – except for the courtyards placed at the heads of the blocks. In this type of blocks the access to the courts is always carved out from the south fence wall;

(ii) double blocks, obtained through the linear-serial aggregation of courts, doubling the latter with respect to a common wall between two courtyards and that therefore plays the role of overturning element.

This type of block is mainly constituted by the aggregation of rectangular courtyards developed in-depth, following a significant re-proportioning of the north and south sides of the fences, meaning those facing to the two planned building routes. This condition would suggest an internal division of properties, which took place afterwards the founding phase of the fabric.

If on one hand, both the entrance and internal distribution of the courtyards on the south of the overturning line follows the same logics of the 'block type', the situation changes if we refer to the courtyards located north of the overturning line. In fact, in these cases, the courtyard entrance is carved out from the north fence wall, the dwellings are placed in proximity of the same north wall in order not to compromise the south orientation, and the toilet structure is located near the south wall – corresponding to the overturning wall – away from the dwelling;

8 which could be linked to particular environmental conditions (agricultural soils and industrial quarries) or to the presence of historical architectures (monasteries or military structures).

(iii) double or triple blocks, obtained through the linear-serial aggregation of courtyards, doubling or tripling the fence element along a path configured as *cul-de-sac* inside the block. It is certainly a more organic form of block, compared to the two previous ones. The fences are of square and rectangular shape, in order to allow the permeability of the block.

Due to the fact that no plans are available showing the evolution process of these urban fabrics, it must be assumed that the *cul-de sac* element has been determined after a clogging process of the block itself; a process that led to specialize the courtyard unit placed at the end of the *cul-de sac*. For example, in the case analysed, one of the two courtyards at the end of the *cul-de sac* is over-sized and with blind wall; the other one is characterised instead by an oblong shape with entrance in axis to the path.

Rationalization of settlement principles

Such a preliminary analysis of the semi-permanent informal settlement has the aim to knowingly orient the current design experience of proto-urbanized Mongolian landscape. Particularly, basis on the analysed case studies – and so on the base of a casuistry that could be clearly implemented, and therefore that can let to revise some current considerations – a graphical conceptualization of the settlement principles has been elaborated by typing the general behaviour both of the urban settlements end of urban aggregates. By observing the fig. 4(a) we can notice essentially three declination of the informal settlement: (a1) urban settlement determined by a double axiality; (a2) urban settlement determined by a double axiality and crossed by a river basically parallel to the matrix route; (a3) urban settlement determined by a double axiality and placed along the river bank, with the river that run basically parallel to the matrix route. Concerning instead the urban aggregate, three typical condition might be recognized in the fig. 4(b): (b1) an elementary aggregate obtained from the simple serial-linear union of enclosures; (b2) a double aggregate obtained from a serial union of enclosures arranged in 'closed series' (i.e. serial-linear succession of enclosures joined to the next); (b3) aggregates obtained from the serial-not linear union of enclosures along a '*cul de sac*' path.

Figure 1. Collage of some semi-informal settlements of Mongolian landscape.

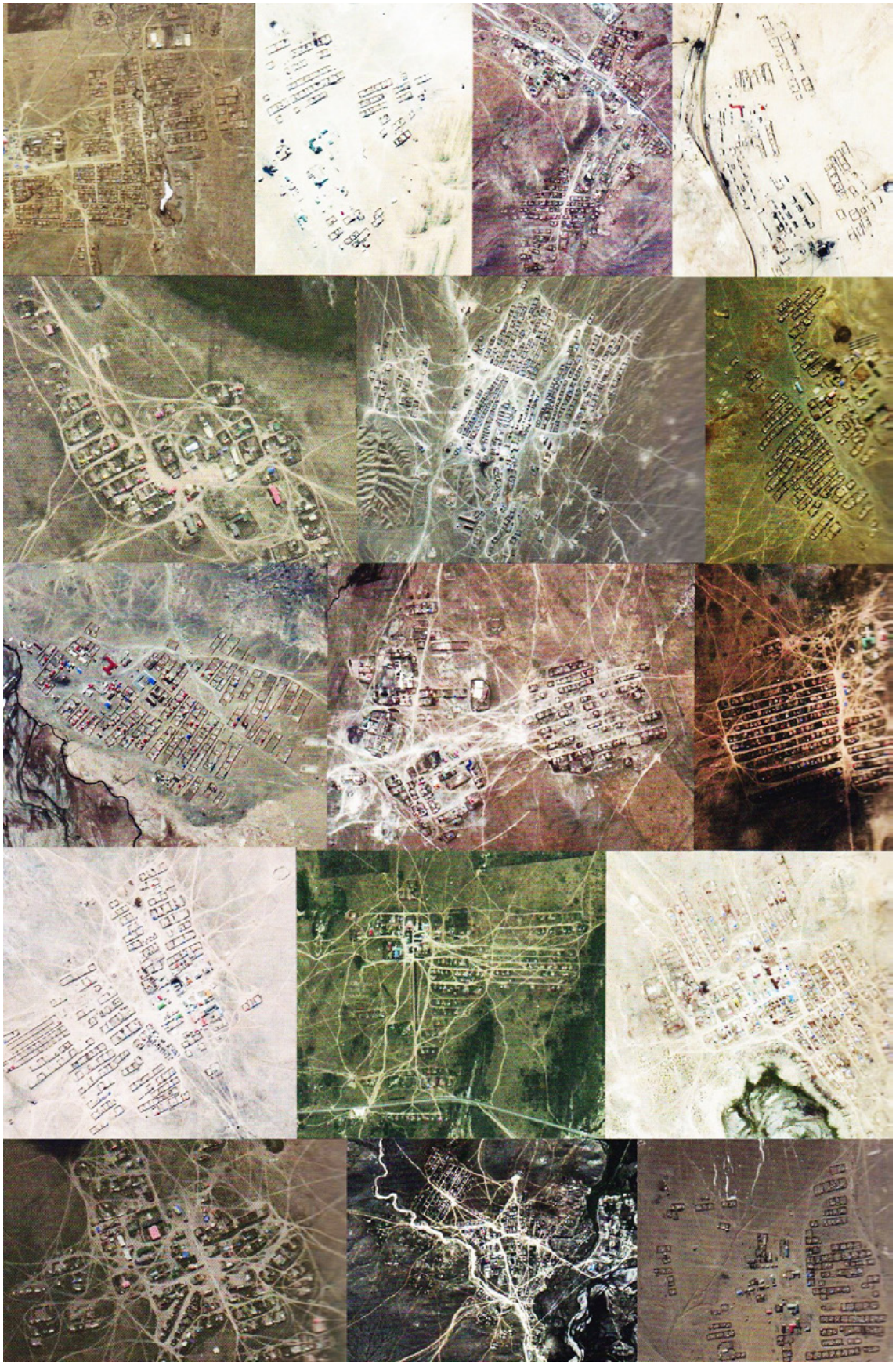


Figure 2. Relation between urban settlements analyzed and landscape infrastructures (main Mongolian's ridge-top route west-east oriented and indicated with a black continue line; and secondary ridge-top route or long river route, north-south oriented and indicated with a black dashed line): a. Bayanchadmany (valley settlement); b. Zumnod (valley settlement); c. Choir (flatland settlement); d. Mandalgov (flatland settlement); e. Baganuur (flatland settlement).

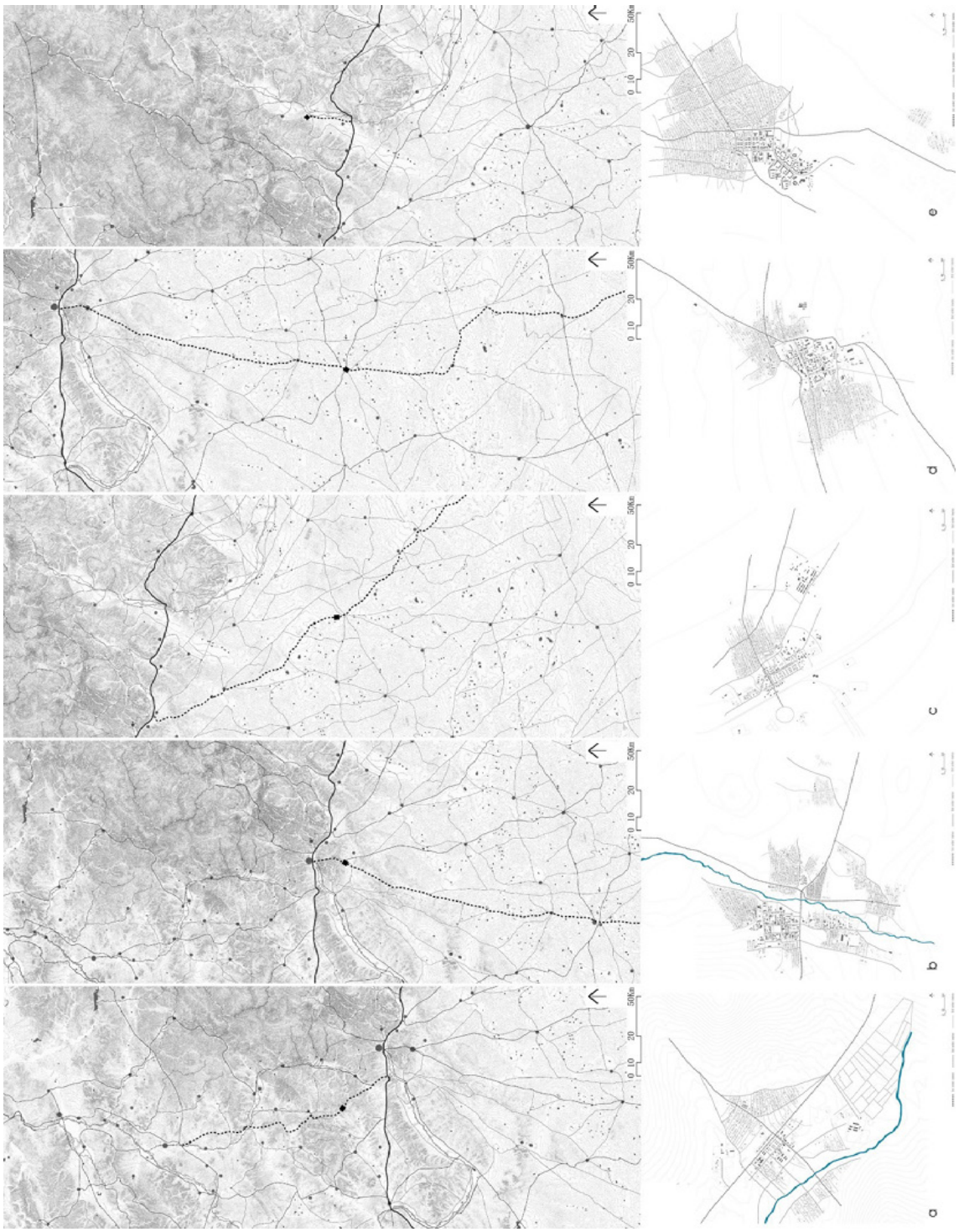


Figure 3a. Courtyard unit as building type: (a1) example of an empty courtyard belonging to a family - of semi-settled culture - that moved with the ger in another place. It can be notice how a small wooden structure (toilet) occupies the South-East fence corner; (a2) example of a courtyard with inside: a ger oriented to the South and placed close to the North fence 'wall'; and a small wooden structure (toilet) that occupies the South-East fence corner; (a3) example of a courtyard with inside: a ger oriented to the South and placed close to East fence 'wall'; a rectangular roofed house (made of bricks or wood) oriented to the South and placed in proximity to the north fence 'wall'; and a small wooden structure (toilet) that occupies the South-East fence corner; **3b.** (b1) urban block 'type': obtained through serial-linear aggregation of courtyards; (b2) double urban block: obtained through a serial-linear aggregation of courtyards with a doubling of the same along an 'overturning' wall of the fence; (b3) double or triple urban block: obtained through a serial-linear aggregation of courtyards with a doubling of the same along a route which is configured as cul-de sac within the plot.

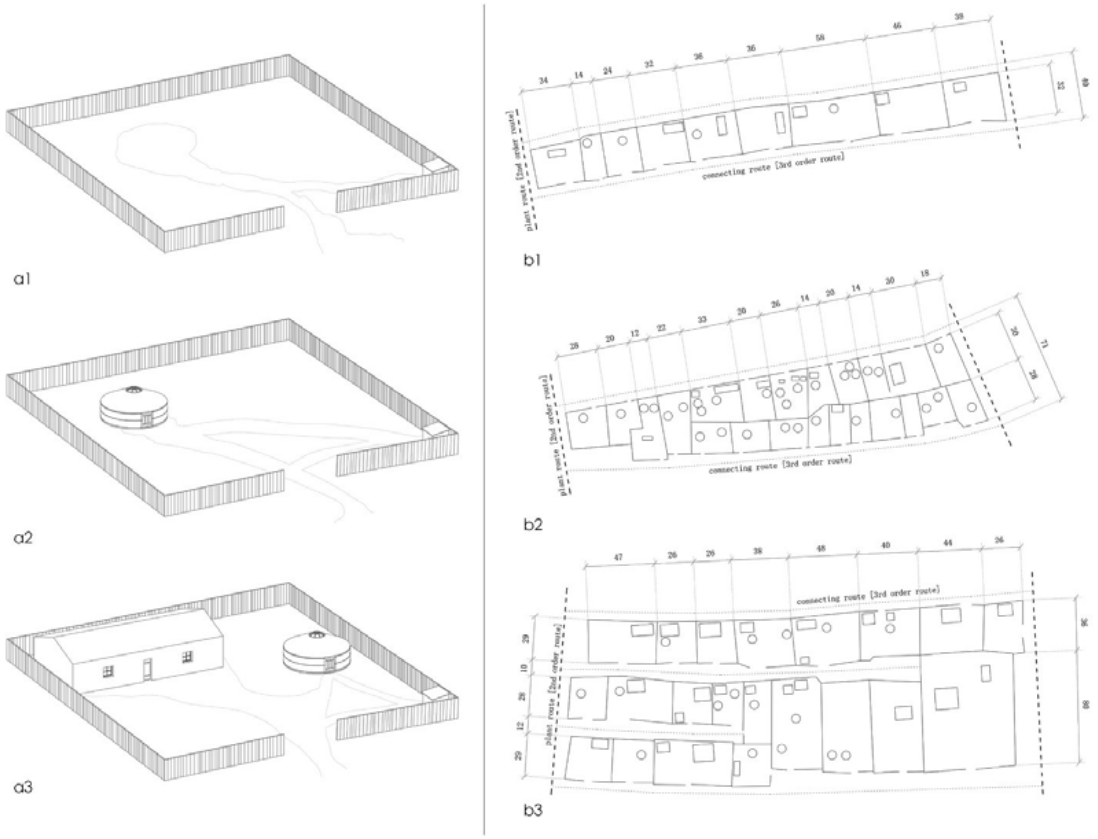
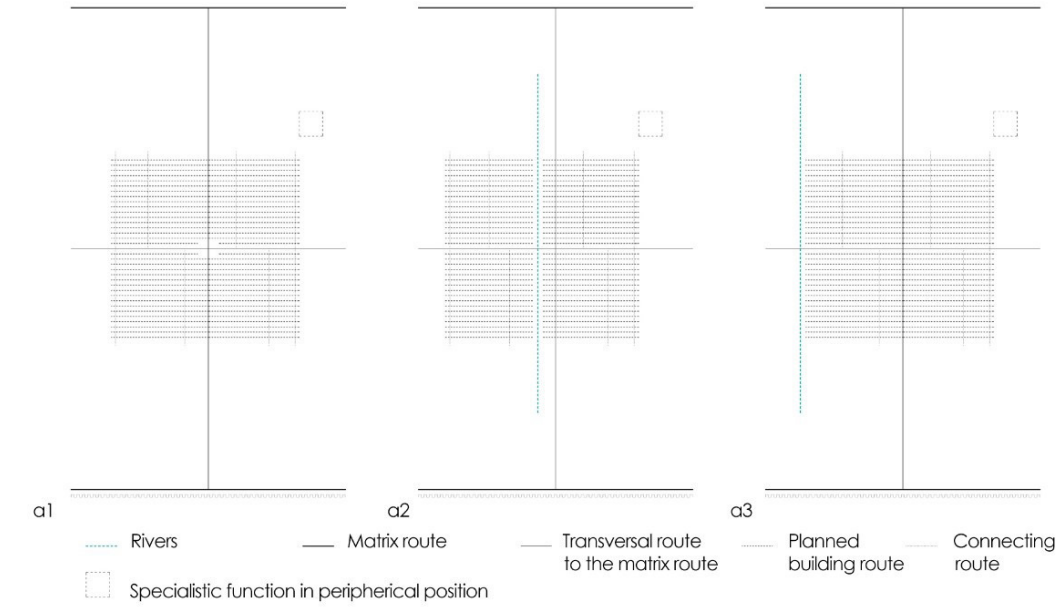
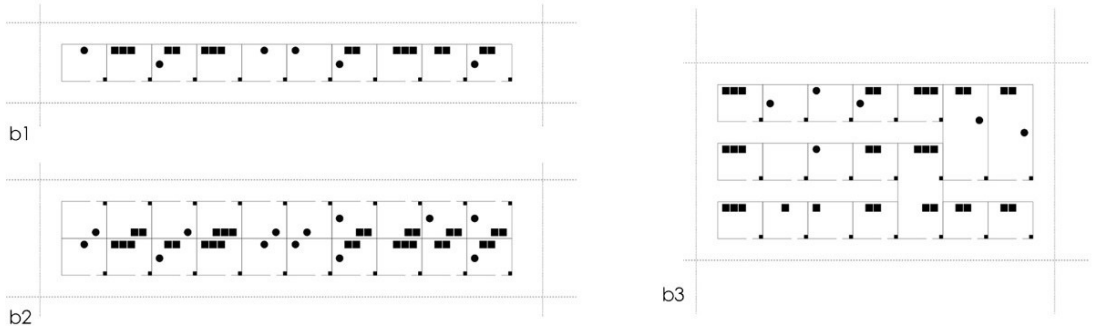


Figure 4a. Rationalization of three typical condition of urban informal settlement;
4b. Rationalization of three typical conditions of urban aggregate.





Sheep track as "project matrix" of a landscape ‘in becoming’

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The essay synthetize the working program of an ongoing research focused on the theme of recovering of the settlement heritage linked to the track routes of the Apuglia region. Particularly, starting from a theoretical speculation concerning the meaning that the ‘landscape project’ should have, the scientific contribution proposes the assumption of the ‘track route network’ as a planning matrix through which to actively recover the several morphological-settlement conditions of the Apulian landscape. The intention is to identify methodological and design indications (to be collected possibly within a real design manual aimed at recovering settlement systems) capable of encouraging design practices addressed towards a systemic recovery (securing, re-adapting, re-functionalization) of the Apulian landscape settlement heritage, making them available through a slow and itinerant form of tourism.

Landscape project

For an architect, dealing with the theme of landscape is never easy. Perhaps because we are conditioned by the exclusivity of those disciplinary sectors basically hyper-specialized that, as such, inevitably tend to exclude any form of synthetic-transformative matrix: the project. That is a 'thought' which is translated into forecasting actions of the physical environment, of objects or families of objects and which – because of its nature – while maintaining the relativity of anthropic action as a non-dominant ethical condition, is configured as *summa* of knowledge and judgments operating in order to experience a truth that is revealed through the modification of the things' state.[1]

However, with respect to the globalization of the landscape architecture discipline[2], it is today more then ever necessary to insist on the rooted 'nature' of the landscape project that is – as the well-known British landscape historian John Dixon Hunt reminds us – above all "art of the place"[3]: referring to its potential ability to re-interpret vocations, circumstances and natural/cultural occasions of a place itself. How do you 'read' these places? Through which cognitive tools can we interpret the transformations which are the result of the interaction between the anthropic component and the natural component of the landscape? These are the questions to think about, especially if we consider: firstly, not appropriate to get into the aporia of pragmatic-intuitive cognitive processes, and secondly to assume the project activity as a continuation of an already executed 'project' (fruit of a spontaneous or critical awareness) as well as the beginning of a future project.

In other words, this means to break free from the obsession of the present as the only referential 'repertoire' on which to base the design reflection, and rather intercept those 'lines of force' that tie together the different times of the anthropic and natural processes. Obtain laws of 'becoming' capable of regulating the relationship between the anthropic component and the natural component, that is, components from whose dialectical interaction is solved what Aristotle defines the 'becoming entity'. In our case, the landscape itself, of which, 'substratum' and 'form' represent its 'principles', the existent coefficient that 'generates' the law by means man establishes his relationship of existence with the world, that is the components in which the becoming entity is resolved: the 'sense' by which the landscape is, and becomes[4]. Therefore, in dealing with the theme of the contemporary project for the landscape, it is necessary that the project itself consider the landscape's sense, namely that the project is able to critically interpret the intrinsic structure of the landscape's morphology, therefore, what the landscape's substratum becomes, the landscape's determination that coming on, the final limit of its becoming.

In other words, if it is true – as mentioned above – that the project corresponds to a sort of operative knowledge that unifies the designer's knowledge, this latter cannot be limited to the mere acknowledgment of perceptive principles nor in their elaboration at the historical or psychological level. Rather it is a knowledge interested in the 'form' historically conferred and phenomenologically recognized to the relationships between nature and culture.

This type of theoretical reflection on the theme of landscape project introduces a more depth consideration of the Apulian landscape and in particular of that type of landscape literally signed by the presence of sheep tracks and by the related architectures that

1 Gregotti V., 2014, H.J, Il possibile necessario, p. 16

2 in this regard let's to consider the provocative statement of the French geographer and philosopher Augustin Berque: «Never has there been so much talk about landscape as in our era; never have we had as many landscape architects (in the sense of landscaping professionals); never have there been so many books published reflecting on landscape. In short there has never been such a flourishing of landscape theory...and never have landscapes been so devastated. We are blabbermouths highfaluting rhetoric about landscape, whose talk is completely hypocritical because our action produce the opposite of what we say. The more we think about landscape, the more we massacrate it».

Berque A., 2013, Thinking through landscape, pp. 3-4

3 Hunt J.D., 1998, Paesaggio e reinvenzione del luogo, in: ARC Architettura Ricerca Composizione, p. 12

4 Aristotele (a cura di Emanuele Severino), 1995, I principi del divenire, p. 60

develop along their course.

Reading of the landscape through an 'equation'

Let's start by saying that routes are those structures that affect on the progressive definition of a landscape. This, due to a rather obvious consideration: the impossibility of experimenting any activity in a place without, before, reaching the place itself. Therefore, the act of crossing a landscape can be considered as the first 'structuring act' of an environment in the process of becoming anthropic; this act may or may not be followed by other structures. In the specific case of the transhumance phenomenon, it appears to be substantially attributable to two anthropic phases. A first phase identified by the need to travel (*percorrere*)a landscape in order to reach one or more places, and a second phase of pseudo-anthropization of the landscape itself – as it is not capable of structuring it – corresponding to a form of appropriation of a given portion of territory – always along the way – with the aim of using its spontaneous productivity[5]. We can talk about a civilized phase of nomadism, in which the seasonal migration of flocks takes place from one place to another, having proto-stable sites mostly belonging to a naturalistic layout and therefore only relatively affected by human presence. In other words, we are referring to a man-user who, by adapting himself to what he finds, determines the occasional quality of the stop.

Based on this premise, let's now to investigate the relationship that exists between the sheep track and the transhumant society, trying to specify, in terms of 'sense', each of the two terms.

If on the one hand the itinerant breeding practice can be considered as the economic response to an environmental situation hostile to the primary agricultural activity – and therefore comparable to a primitive model of life and culture linked to geographical-environmental conditions that are not easy, in terms of orography, climate and productivity –, it is the sheep track, as a route and structuring element of the landscape that has determined the type of transhumant semi-nomadic society[6].

Sheep Track : Transhumant Society

A society practicing the 'nomadism'[7] as an existential condition which, in some ways, disregards the humanitas of the settlement and that by moving along with its animals in search of lands to graze, seems to confirm how: it is not the human act to determine the landscape – or at least it is only in part – but rather it is human culture that arises in correspondence of the nature event. Therefore, it is like the nomadic thought, that is the thought of a transhumant society, corresponded to a form of critical thinking operating – critically – in the immanence plane of a collective judgment derived from the condition of satisfying an anthropic need, and which, as the philosopher Andrea Tagliapietra says, by searching for "an out with respect to the force of gravity of the sedentary thought"[8], must responsibly deal (the subject is always the thought of a transhumant society) with its own realization in places.

5 Caniggia G, Maffei G.L., 1979, Composizione architettonica e tipologia edilizia. Lettura dell'edilizia di base, 1979, p. 205.

6 The nomad, according to the contemporary philosopher Andrea Tagliapietra, is: «... he who hasn't fixed place, who is not settled but is such as he must *nemein*, 'graze', a word that plays in the etymology of the nomadic term and describes the search, by the nomadic people, of the pastures for their own herds and flocks. It is the opposite of 'pagan', which is the one who lives in a particular village and who cultivates the surrounding lands. But *nemein* also refers to the meaning of *nómos*, that is in Greek language law. The *nomos* is therefore the immediate form in which the political and social ordering of a people becomes spatially visible, the first measurement and division of the pasture, that is to say the occupation of land and the concrete order that is contained in it and that from it derives». Tagliapietra A., 2018, Cartografia intellettuale dell'Europa la migrazione dello spirito. Libro dello Studio. Lampedusa. La cattedrale di Solomon, vol. 1, pp. 363-364

7 which, as Eugenio Turri remember to us, corresponds to an underlying level of man, as an expression of his lower evolutionary stages and which is independent from the city's *humanitas*. Turri E., 1983, Gli Uomini delle tende, p. 21.

8 Tagliapietra A., *Op. Cit.*, 2018, p. 364.

To orient this type of geophilosophical research of the place – i.e. a research based on a thought materialized in the relationship between territory and land[9] – is the 'sheep track'. That is an element (a route) of a structured network of routes dedicated to the transhumant activity: routes that in the shape of constellations of a firmament of traces on the earth's surface, structure the landscape, formalizing it, that is representing its 'meaning' and 'essence'. But the landscape, as a structure, comprises these three characters: totality, transformation and self-regulation. That is, those characters that are reflected in the notion of 'type' which is, as Matteo Ieva reminds us, «... a conceptual tool, an idea of something that is not yet but that will become with the execution of the work» and that allows the designer to bring its interpretative nature back to consider, on the one hand, the visible form of the architectural object (or of a landscape condition), and on the other the meaning that is attributed to this form on the basis of the experience.[10]

Based on this notion of type, the relationship between sheep track and transhumant society in the Apulian landscape[11] could be re-considered within an equation that aims to conceptualize the contents of the single terms and consequently the content of their dialectical relationship:

Sheep Track : Transhumant Society = Type of Route : Social type

It is deduced that the sheep track, as a specific type of route[12], has determined the consolidation of a transhumant society, i.e. a society strongly specialized in customs and settlement practices.

Today, considering the almost total decay of transhumance practices, also because they are discouraged by controls on production processes now centered on chemical-analytical evaluations of products, it is necessary to ask to ourselves, as designers working on the landscape scale and interested in enhancing the disused settlement heritage: how to update the sense of this system and then through which actions to design the Apulian landscape as becoming entity.

Conclusion

This essay aims to orient towards a concrete designing reflection. In other words, the idea is that to assume the 'sheep tracks network' as a designing matrix through which to re-define different morphological-settlement conditions of landscape. In particular, the type of research activity is chronologically articulated as follow: (i) recognizing of the sheep track network thanks to the conspicuous literature on the matter (documentation of the *Regia Dogana delle pecore di Foggia* and of the *reintegra dei tratturi*); (ii) analytical identification and study of the type-morphological features of the building heritage (currently in use and in disuse, for example: *borghi*, *jazzi*, churches, fences, taverns, towers, *masserie*, productive gardens; etc.) present along the sheep tracks, and subsequent cataloging of buildings; (iii) comparative analysis of case studies explaining the morphological variants derived from the relationship between the sheep tracks and settlements.

These first three phases, in addition to being supported by the existing – also normative – documentation (*Quadro di Assetto Tratturi di Puglia*, cartographic documentation of the *SIT Regione Puglia*, etc.), are currently developed in the form of direct surveys of the settlement systems. The material produced will be filed on the basis of: the relationship between topographical condition and architecture, the building typology and therefore the construction techniques adopted, the state of maintenance of the

9 Deleuze G., Guattari F., *Qu'est-ce que la philosophie?*, 2005 (1991), p. 82 (Traduzione in lingua italiana di Angela De Lorenzis in Gilles Deleuze e Félix Guattari, Che cos'è la filosofia, 1996, p. 77)

10 Ieva M., 2018, Architettura come lingua. Processo e progetto, p. 59.

11 especially in the central and northern part of Apulia.

12 that in following mostly natural paths, it has remained almost unchanged over time both because it responds to specific morphological conditions of the soil and because of the extremely conservative character of the pastoral civilization.

building and in general of the settlement system (orography-route-architectural artifact and production activity) and to its transformative potential. To conclude with the phase (iv) which intends to identify methodological and design indications that, in the form of intervention guidelines, are able to stimulate a design practice aimed at recovering (securing, re-adapting, re-functionalizing) the identity of Apulian landscape's settlement systems, making them available through a slow and itinerant form of tourism. The written and graphic produced material will be collected within a real design manual aimed at recovering the settlement systems.

Figure 1. Map of the sheep tracks published by '*Commissariato per la reintegra dei tratturi di Foggia*'.

Figure 2. Aerial view of a settlement at the foot of the Garagnone Castle ruins close to Poggiorsini (photo taken from Google Earth).

Figure 3. Aerial view of a jazzo along a sheep track of Alta Murgia (photo taken from Google Earth).

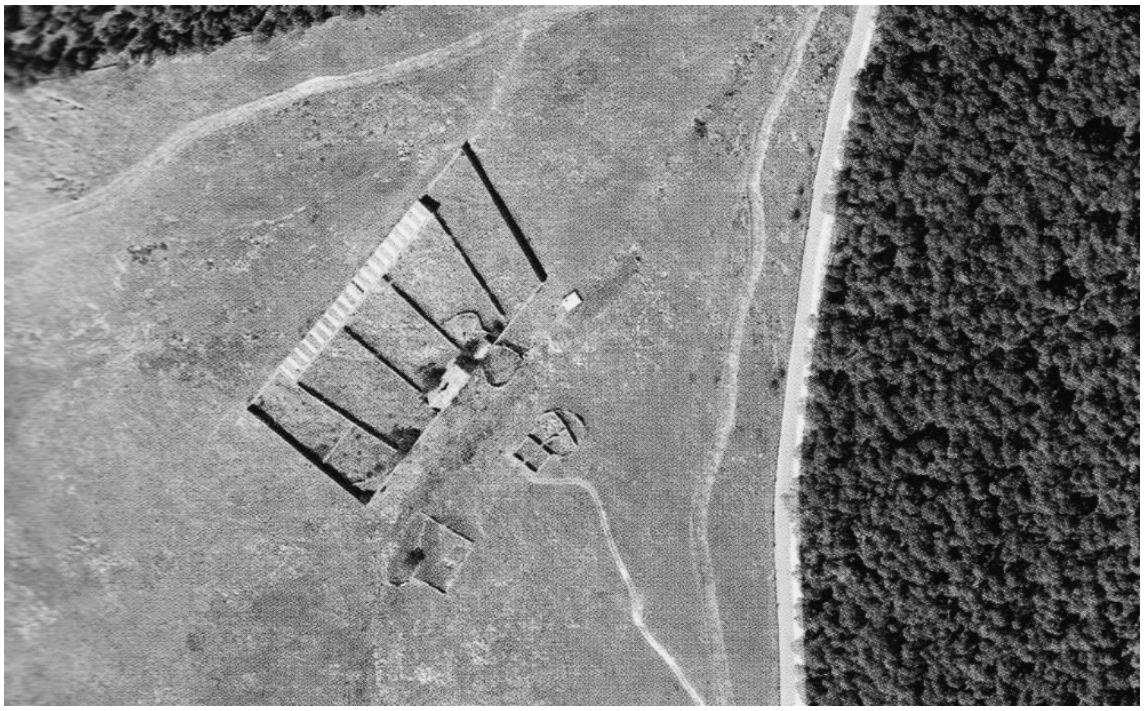

Figure4. Seep track used for walk and pilgrimages towards the Murge (photo taken from the book by Saverio Russo: *Tratturi di Puglia. Risorsa per il futuro*, 2015).

Urban sprawl of informal settlements in Belgrade, Serbia. Models for standardization and reflections on recovery

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One of the main challenges for sustainable urban development of Belgrade with its 1.7 million citizens is prolific informal development and uncontrolled urban sprawl. These phenomena were initiated mainly because of rural to urban migrations, however they continued more intensively in the 1990s, not only because of regular migration, but as after effect of forced exile of people from Kosovo and Metohija and refugee crisis in ex-Yugoslavia wars.

The informal settlements occupy rural land in the outskirts of Belgrade, mostly by main in and out transit corridors. The characteristics of these neighbourhoods is unexpectedly high standard in residential buildings, even luxury, in contrast with unfavourable environmental conditions, the lack of urban standards and highly increased coefficients, absence of technical infrastructure or at least existence of the inadequate one, shortage of basic social and public utilities and public spaces.

Underlying conditions why so many people live in informal settlements are the high cost of "formal" housing (issues of affordability), as well as there may be discussed to less degree some aspects of residential preference. The empirical research is carried out on the examples of several urban plans for standardization, regulation and legalization of these settlements in Belgrade, which established a model for resolving the situation, with a goal to obtain better living conditions and limit the informal growth by employing urban planning tools.

Introduction

Within the Serbian urban system, Belgrade has always held a distinctive position. When saying Belgrade, it is actually referred to the Belgrade Metropolitan Area that encompasses a territory of 3,226 km2, or 3.6% of the territory of the Republic of Serbia. It is organized in 17 municipalities, as a complex and heterogeneous system of settlements. Belgrade's population (according to Census 2011) is 1.7 million, or 23% of the population of the Republic of Serbia. It is a well-known fact that mass industrialization in the period following the World War II triggered intensive development of the city of Belgrade and changes in its spatial-functional structure. Consequent urbanization process hastened in the post-war period of recovery (Slaev et al., 2018) and this urbanization was of a primary (elemental) rather than of the planned type hence influencing "the changes in composition of activities of the surrounding settlements, and their adhesion/ annexation to Belgrade" (Todorić, 2013:60). Among general underlying reasons of urban sprawl and those applicable to the context of Belgrade, one can distinguish: population growth; development of transportation and road networks; and housing preferences. However, the more specific reason of urban sprawl in Belgrade and in Serbia during the socialist period was inability of the state to efficiently cope with satisfying housing needs of the large numbers of new urbanities. Namely, the population influx created great pressure on Belgrade's housing stock, which was during the period of socialism (from 1945 until 1990) partly treated through state companies and institutions that were entitled to develop flats for their employees. While certain categories of immigrants, in particular those who were accommodated in state-owned housing, had been effectively integrated into the life of the city, other categories had been forced to build their own homes, often illegally, in certain parts of the city periphery. The state policy thus resulted in the development of two peripheries of Belgrade – one which was relatively well-serviced and organized, and the other one which was autonomous, with a composition of privately-owned houses but largely devoid of infrastructure and other facilities (Maričić, Petrić, 2008). In response to this, the number of illegally built houses rose spontaneously during the 1970s and 1980s (Grubovic, 2006). Until the late 1980s, more than 98% of illegal builders in Belgrade were immigrants from rural areas and between 70 to 90% of them belonged to the working class (Saveljić, 1988). During the 1990s, the process of illegal construction further enhanced. As a consequence of civil wars at the territories of former Yugoslavia, another considerable wave of immigrant population came to Belgrade and Serbia, which included people that were internally displaced from Kosovo and Metohija. The statistics of the period succeeding these immigrations shows that, on average, every sixth citizen of Belgrade was immigrant and every fourteenth came as a refugee (Maričić, Petrić, 2008). Generally, a larger proportion of immigrants, especially refugees came to suburban municipalities of Belgrade. The housing deficit in Belgrade, confronted with the need for accommodating the new populations, has caused significant residential pressure on the suburbs and agricultural land at the outskirts of Belgrade, especially alongside main in and out transit corridors (e.g. the Zemun corridor, the belt of motorways to Surčin, Batajnica, Novi Sad, Avala, Zrenjanin, Ibar road, etc.).

The focus of this paper is on the empirical study how urban plans in Belgrade have tackled the issue of regulation and legalization of informal settlements. With this in view, and particularly through analysis of housing affordability and residential preferences, a proposal is made towards standardization model for informal settlements having in view the given contextual aim.

Informal settlements, affordability of housing and residential preferences

Illegal (irregular, informal, "wild") construction/development is related to the construction of new houses, development of annex to the buildings, the adaptation or reconstruction of housing or some other (business, auxiliary, etc.) object but without previously acquired building permit. Informality in housing and land occupation is multidimensional phenomenon that involves noncompliance with urban norms and regulations, often accompanied with inadequate provision of public services and equipment (Smolka, Biderman, 2012). According to some authors, the term "illegal" is the most appropriate to describe development of

objects or buildings without building permit, at least within the Serbian urban context. Yet, for the purpose of this paper, there shall be used the term "informal" settlements because its connotation "brings more positive attitude towards the issue, when planners and other experts may learn a lot from this kind of development and even if it is not possible to completely stop informal settlements, there can just be stimulated their positive and discouraged the negative effects" (Žerjav, 2009:15).

Informal developments are not a recent phenomenon in Belgrade – more or less they have always been featuring its urbanization process. However, the proportions of informal buildings in Belgrade have breached "acceptable limits" after the early 1990s (marked by collapse of socialist housing system with the privatization of the public housing stock and the withdrawal of the state from further financing of the housing construction accompanied by mass immigration of refugees from the former Yugoslavia (BiH and Croatia) and internally displaced persons from Kosovo and Metohija. The limits of informal construction have always been marked by local circumstances, mentality and habits of the population (Žegarac, 1999). Among the key reasons why the population in Serbia lives in informal, suburban settlements of larger urban centers, are certainly a long-term absence of state housing support for low-income households and severe unaffordability of housing market. Since informal housing construction represents for many people an "exit housing strategy" (Hegedüs and Tosics, 1996), or a form to solve their housing issues themselves, which, in addition to lower land prices, provides them a possibility of saving through self-building and building in phases, self-built illegal housing emerges as the "unofficial social housing policy" and it has been tolerated as an inevitable side effect of the official housing system (Petrović, 2013:245).

The housing affordability problem in Serbia can be observed through available statistical data on the housing expenditures of households and the market prices of apartments in relation to the available households' incomes. According to the 2015 Household Budget Survey (HBS), households in Serbia spend a monthly average of 22.6% of their total disposable income on housing related expenditures (SORS, 2016). On the other hand, the results of the 2013 Survey on Income and Living Conditions (SILC) indicated that housing deprivation from the point of view of housing costs making a burden on the budget of households in Serbia was far more pronounced, i.e. that these expenditures amounted to about one third of disposable income (SORS, 2015:61). According to 2013 SILC, the share of individuals who consider that housing costs represent a significant burden on their family budget increases to over 80%, and among single parents to as much as 86% (SORS 2015:62). The latest economic analyses of the housing affordability from 2013 showed a modest share of wealthier households in the housing market in Serbia, whereas at the same time there was a significant group of potential beneficiaries of various forms of social housing (MCTI, 2015). According to these data, the ratio of median net annual household income to median apartment price in the given year was about 1:9 for the purchase in cash, or about 1:13 if the apartment was purchased with a bank loan, whereby among the larger urban settlements in Serbia, housing unaffordability was most pronounced in Belgrade (1: 9.7) (See: Table 1)

Table 1. Housing affordability indicators in Serbia and Belgrade in 2013

	Serbia	Belgrade
Market rent, 55 m^2 flat, EUR	200	300
Purchase price of a new 55 m^2 flat, EUR	61,633	80,018
Monthly loan instalment, EUR	253	328
Average monthly net wage, EUR	388	478
Average monthly household income, EUR	559	689
Average annual household income, EUR	6,715	8,270
Price of a flat:annual household income	9	9.7
Market rent:household income	0,36	0.43
Loan instalment:household income	0.45	0.48

Source: Ministry of Construction, Transportation and Infrastructure of the Republic of Serbia, 2015 (Based on data from SORS, the National Bank of Serbia, and imovina.net)

With the onset of the global economic crisis, and especially after the year 2008, there has been a significant decline in the Serbian real estate market. The Statistical Office of the Republic of Serbia's data show that the number of completed housing units in Serbia in the period from 2008 to 2015 was almost halved (from 19,815 in 2008 to 10,306 in 2015). Despite the decrease in supply, the market prices of apartments recorded a continuous decline in the observed period, indicating a significant reduction in housing demand. According to the National Mortgage Insurance Corporation (NMIC), the average achieved price of residential real estate per m2 in Serbia from 2009 to 2016 was marked by a clear decline, which was particularly pronounced in the Belgrade region.

Although the dominant share of dwellings in Serbia is privately owned (98.3%), housing needs of the total population are largely unmet (Petrović, 2013; Bajić, 2017), moreover, there is a problem of "poor homeowners". For example, in Serbia, the risk of poverty of the members of renting households is lower than the one of the owners - 18.2% versus 24.9%, which is in contrast to the EU data - 26.8% versus 13.7%, respectively (SORS, 2015:29). At the same time, the current social housing allocation model, which has been formally established since 2009, is rather residual in practice, given the negligible share of social housing in the total housing stock (less than 1%), very limited state funding and scope of construction, and the orientation of provision towards the most vulnerable beneficiaries (mostly Roma population and refugees).

Residential preferences, which presume giving a priority to certain type of housing by residents themselves, have been lately analyzed within Belgrade (sub)urban context (Petrić, Bajić, 2015; Petrić, 2017). Some aspirations towards residential environments are driven by the same motives regardless whether people are living in cities, towns, suburbs or rural areas, and those are: presence of job opportunities (especially for the younger population); a healthy economy; decent housing; good public services and attractive and safe environment (DETR, 2000). In Belgrade, the typical urban culture and strong preference for central city areas created high pressure on the traditional urban territories in the city core (Slaev et al., 2018). It is still very much the case that people who can exercise their residential choice would rather opt for the inner city living in Belgrade, where land is scarce but urban facilities and amenities are concentrated. On the other hand, socio-economic status or the lack of financial sources would drive people to look for a cheaper housing at the urban periphery (Petrić, 2017). In addition, some have to choose residential areas at the city periphery due to unemployment issues in the inner city and unaffordability of its life commodities (Krisjane, Berzins, 2012). The research which was conducted in 2014 showed that total score on residential preferences' dimensions in Belgrade's selected urban and suburban areas depends much more on perceived neighborhood attributes (overall facilities provision, and especially public transport system organization; feeling of safety; and happiness with contacts with neighbors) than on personal or housing background variables (duration of living in the present neighborhood; and type of occupancy).

Characteristics of informal settlements in Belgrade

Belgrade informal settlements are built on the city outskirts, forming a ring around the wider central city areas. Their development happens typically along the dominant traffic routes, e.g. by the main in and out transit corridors. This causes uncontrolled urban sprawl with spatial, economic and political outcomes in broader sense (Božić, Danilović Hristić, 2005; Danilović Hristić, 2014). Informal settlements of Belgrade are developed on the agricultural land, which was not planned for expansion of residential area hence the parcels/ plots with inherited agricultural land use are inadequate by their shape and encompass for housing. The plots are fragmented, i.e. subdivided and sold (keeping just the minimum access roads) and the process is not formally implemented through the Cadaster so that one plot has multiple objects with different owners. Also, some already formed villages on the outskirts of the city of Belgrade are annexed to the city due to mass building being initiated in them, usually without a plan.

The second form of the illegal/informal construction is when, despite the existing planning documents for urban settlements, their set of rules, parameters and standards have been completely neglected or breached especially in terms of vertical and horizontal regulation (number of floors and the position of constructions on the plot), in terms of Floor Area Ratio, densities, and often in terms of usurpation of public land for which the public land-use has not been implemented on time.

The third form of illegal/informal construction is linked to the older settlements, for example those which are closer to the central city zone, which have been neglected on a long run and could not be a part of the urban renewal and reconstruction process since the infrastructure corridors were planned in them, latter being abandoned here and relocated somewhere else, and in the meantime, the population needs in these settlements initiated informal construction and development of annex to the buildings without previously acquired building permit.

Common feature of all informal settlements in Belgrade is the lack of public facilities, primarily those of social and health care, e.g. kindergartens, schools, public health institutions, as well as their substandard equipment with infrastructure utilities and public transportation. Missing are also the facilities of commercial use, i.e. local shops.

The relief also influences different typologies of informal settlements, for example in parts of the city which are on the plain terrain (in the north and west) or in the terrains prone to slides (south and east parts of the city). Individual settlements which are developed on the flat terrains beset on traditional urban typology, with clear orthogonal grid of streets, so that they are much easier to be rehabilitated and it is easier to apply planning rules to them. On the other hand, the terrains with potential landslides, adverse slopes, flooded terrains without adequate defense from high water levels, terrains with high levels of groundwater, etc. have huge problems in the existing settlements, and their rehabilitation requires great financial investments.

Other disadvantages refer to construction of informal settlements within the corridors of infrastructure (e.g. under a power line, near the power substation of larger capacity, overlaying the existing underground lines), and near the transportation corridors – motorways, regional roads, railways, or in the vicinity of the airports. In particular, it is necessary to point out that in Belgrade there is an issue of usurpation of the public land which is reserved by the urban plans for development of infrastructure and transport corridors. Many times, Belgrade authorities were forced to give up planning solutions for construction of public infrastructure for which there was funding already provided and had to invest in planning their relocation on other sites. Also, illegal construction of residential areas in Belgrade is a threat to potential extension of the airport's landing runaway. Additionally, some informal settlements are located close to incompatible land uses with the housing, e.g. close to landfill sites, dumps, cemeteries, industrial and production zones, etc. For example, illegal construction approached a complex of the Nuclear Institute Vinča where there is temporarily stored radioactive waste.

The development of some informal settlements or of their parts may represent a threat to the areas of Belgrade which enjoy the status of protection of a cultural or natural heritage (e.g. important archaeological site in Vinča, a Neolith site in Banjica, protected area of the mountain Avala near Belgrade, etc.), likewise the zones of protection of the main water sources for public water supply.

Models for standardization, regulation and legalization of informal settlements in Belgrade

The attempts to form models which will help curbing the issue of urban sprawl of the informal settlements in Belgrade have been made through urban plans. Here it is referred to the *Plan of General Regulation of Belgrade* and several Detailed Regulation Plans. By the Plan of General Regulation of Belgrade, adopted in 2017 and encompassing the total area of 51,776 ha divided into nineteen specific units of Belgrade municipalities, it has been planned for present spontaneously formed blocks that make up the peripheral part of urban tissue to gradually transform through improvements and increasing implementation of the proper standards. This process is slow and it happens simultaneously at a number of locations in the city. Preparation of urban plans and establishment of sets of rules will allow

rehabilitation of present construction and definition of rules for new construction hence this model is compulsory for a majority of informal settlements unless they have already been elaborated through Detailed Regulation Plans. For a small number of villages in the flatlands section of the city, since they are based on inherited or extended urban matrix, it is made the possibility of "direct implementation" on the basis of the recommendations of the Plan of General Regulation of Belgrade.

The rules for rehabilitation (standardization and regulation) of urban blocks which were illegally formed are presented in Table 2. They are typologically classified according to the zones of single and multi-family housing, and deductions are based on extensive professional experience in preparing *Detailed Regulation Plans* for rehabilitation of informal settlements. As analyzed through this typology, so far the majority of informal settlements of the peripheral zones consist of single-family houses. On the other hand, multi-family housing is primarily concentrated inward, i.e. closer to the settlements which are developed according to the plans.

Table 2. Rules for construction for allowing rehabilitation of urban blocks which are not developed according to plans

Rules for construction for rehabilitation of urban blocks which are not developed according to plans	**Single family housing zone**	**Multi-family housing zone**
Floor Area Ratio (for angular constructions it can be increased for 15%)	30% to 50%	up to 60%
Lot coverage (for angular constructions it can be increased for 15%)	up to 1.2	up to 2.8
Maximum height of constructions/number of floors *Gf - ground floor *1, 2, 3, 4, - number of floors *At - attic	height range up to 9 m, Gf +1 + At	height range up to 18 m, Gf + 4 + At
Conditions for the green and open spaces	• minimum 50% of the plot is in green/open spaces • minimum percentage of green areas in direct contact with the soil (without underground constructions/their parts) is 20%	• minimum 40% of the plot is in green/open spaces • minimum percentage of green areas in direct contact with the soil (without underground constructions/their parts) is 10%
Parking	Parking solutions have to be provided on the plot, either through construction of garage or by making the open parking space on the plot, according to standards	
Minimum level of infrastructure	• Construction must have connection to the water and sewerage network, and to electricity or other alternative energy source; • Until the realization of urban wastewater evacuation system it is allowed to use individual or common septic tanks, in accordance with the technical norms prescribed for this type of facilities.	

Ever since the 1990s, for the purposes of legalization and rehabilitation of informal settlements, there was endorsed decision on preparation of Detailed Regulation Plans (formerly Regulatory Plans). This planning process intensified in the past 10 years so presently there are not so many informal settlements of Belgrade which have not been covered by relevant planning documentation. This process has been demanding; it placed a burden on the city budget likewise it was exhausting for urban planners. For example, encompass of some of the adopted plans for bigger informal settlements within the inner urban zone of Belgrade was more than 4,000 ha, or 11.5% of the city territory. Considering the average costs for development of a plan, which are approximately 4,000 EUR/ha (including VAT), it can be calculated that the city of Belgrade budget had to provide some 16 million EUR for developing just the planning documentation within the specified period of 20 years. Average

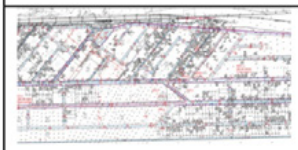
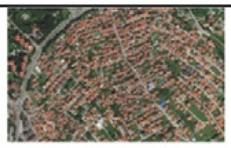
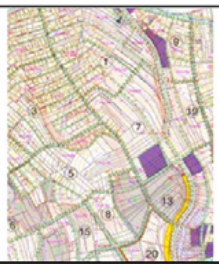
duration for development of a plan (altogether with the procedure of professional control of the plan, public insight process and plan's adoption) lasts between 1.5 to 2 years.

The greatest challenge in planning for remediation of informal settlements is the issue of public areas and public land uses. Even though residents of these settlements notice the lack of public land uses and they demand such equipment of their settlements, once their private interest could be even to a least bit endangered, they object to planned regulation of streets, which is at the expense of their plots (although planners strictly take care that the demolition of the existing illegal buildings comes down to the absolute minimum). Also, in case that residents have to have a part of their property being subject to expropriation in order to endorse planning decisions that promote public purposes, e.g. kindergartens, schools, ambulances, etc. in their settlements, during the process of public insight into the plan they tend to object such planning decisions (Danilović Hristić, Stefanović, 2013).

For the purposes of locating facilities of public services, urban planners first check whether a plot of land is owned by the State or by the local government, and if there such "soft" location exists, they opt for it. The second option would be to choose land which is "empty", i.e. one which is not yet "threatened or attacked" by illegal construction. The third and the most expensive one is choosing a location on disadvantageous terrain, which anyway has to be rehabilitated and encompassed by the public works, for example at a potential landslide, close to the watercourses, etc.

Table 3 presents an overview of Detailed Regulation Plans endorsed for selected cases of informal settlements of Belgrade, as structured according to the terrain morphology.

Table 3. The examples of informal settlements of Belgrade and adopted Detailed Regulation Plans for them

Terrain morphology	Examples of informal settlements and planning documents for them		
Lowland: Altina 1 and 2 (467ha) Plavi horizonti (152 ha), Šangaj (220 ha), Batajnica (715 ha), Busije (260 ha), Kamendin (65 ha), Grmovac (295 ha) Krnjača (730 ha)...	Plavi horizonti	Altina	Krnjača
			
			
Hillsides:	Jelezovac	Padina	Mali mokri lug
Grocka, Vinča, Leštane (total of 4800 ha), Padina (200 ha), Mali mokri lug (199 ha), Jajinci (a total of about 590 ha), Jelezovac i Sunčani breg (220 ha) parts of Mirijevo, Žarkovo, Rakovica and Kumodraž village			
			

Conclusion

The promotion of compact urban living in contrast to urban spawl is the way that is knowingly supported by urban policies all over the world. In some countries people's preferences and housing affordability induce additional sprawl. In the South and South Eastern European countries, the occurence of illegal (informal) settlements at the periphery of cities is a well known phenomenon that is triggered by population growth that needs to be accommodated through development of new residential blocks and settlements (not seldomly through individual initiative since the state is not able to provide affordable solutions), as well as by development of new infrastructure systems.

The analyses of the informal settlements of Belgrade show that the major problem to be resolved is how to enable construction of roads according to regulations for positioning all needed infrastructure lines and how to accommodate these settlements with needed services of a social standard. This represents a problem because houses are often built so close one to another, i.e. without regard of the regulation lines. The majority of objects in these settlements are free standing family houses, with elevation of floors from GF+1 to Gf+4, with high densities. On the positive side, the levels of soundness and standard of most of the objects here is high – they are built of durable construction materials, and some buildings are quite luxurious (with swimming pools, etc.).

With emphasis on the issue of standardization of Belgrade informal settlements' development, in this paper there were presented models for single and multi-family housing zones. These models, which are based on contextual empirical knowledge, consisted of rules for construction that promoted rehabilitation of urban blocks which were not developed according to the plans. Similarly, by overviewing the potentials for recovery of informal settlements in Belgrade there could be noticed the positive impact of Detailed Regulation Plans which help remediation of informal settlements through full recognition of the necessity to safeguard public land uses whilst minimizing the impact on interests of the private owners who already built without permits.

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The informal city as a different way of urban regeneration

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This paper looks at the informal city and particularly about the main aspects and potentialities of this urban structure in Italy. Europe has been examinating Italy for many years about the ineffectiveness of solutions adopted to integrate some comunities, such as the gypsy community, that still live in camps. These structures do not represent an appropriate living conditions and radicalize the isolation of the social group included. But, as Antonio Tosi wrote, tha camp rapresents also a structure of social and cultural relations and a living idea different from the apartment building. The camp represents, in spite of its deficiencies, an idea of community.

The same idea is typical of other western informal shanty towns and even of some parts of the city where, because of economic and urban reasons (i.e. rents are cheaper and/or the urban structure can be used to re_create an idea of spread village) specific ethnic groups take up residence.

Starting from a design experimentation, developed with the Municipality of Neaples about the Cupa Perillo Camp in Scampia, the paper looks at the informal city as a new way to activate an urban regeneration of the areas where this groups live, considering this people not as elements to absorbe or integrate in our social, cultural and urban model but as activators able to propose, according to their own culture, different urban models that, perhaps, are closer to the main aspects of the place where they decided to take up residence or where they were confined.

Introduction

Starting from the point of view of Western architectural thought, the informal city is an oxymoron. This is the idea of the city made by "urban facts" where architecture is only one aspect of a more complex reality of a particular structure but at the same time it represents the most concrete point of view with which to tackle the problem (Rossi 1966); this architecture considers the slum as an error to be resolved through a "strong" project that replaces the barracks with houses, possibly "modern", and creates "services", public places, possibly monumental, capable of restoring identity and character to "parts" of cities lacking of them.

According to the definition given by UN Habitat in 2003 a slum is a densely populated urban area, characterized by squalor and very low level of habitation (UN Habitat 2003). This definition holds together very different situations from a geographical, cultural, social, technological point of view. These situations go from the Brazilian *favelas* to the French *irrégulliers quarters*, from the African *mabanda* to the American *ghetto*, from the Spanish *marginal barrios* to the Italian *campi rom*. Recent research on the informal cities establishes slums as urban agglomerations characterized by a lack of basic services, low quality housing, outside housing standards and illegal, overcrowding and high density, anti-hygienic and dangerous living conditions, insecurity and precariousness of the possession of housing or land, poverty and social exclusion, a minimum size of the settlements (Avanzo, Calevro 2014).

The physical, economic and social neglect characterizes most of the informal settlements and, obviously, is an emergency to be faced. However, very often, the governments actions were not decisive precisely because they addressed the issue from a specific point of view, i.e. the one of housing emergency or of infrastructure lack, and have not taken into account the fact that in the condition of "informal, undoubtedly negative, however complex group dynamics develop, at the limit, as Laura Fregolent underlines, it is possible to observe how a district or an extended piece of city grew in an informal and unplanned way, is often provided with alternative rules to the traditional ones o it has produced a nearly virtuous governance activities that, in a un-informal context, would define urban management (Ostanel 2017).

One of the most emblematic examples of these experiences is the Caracas tower designed by Enrique Gomez for the Venezuelan banker David Brillembourg, as the headquarters of the financial group Confinanzas and Banco Metropolitano. In 1994 the economic crisis blocked the construction and in 2007 and 750 familiesis occupied the unfinished building transforming it into a sort of self-managed and self-regulated "residential community". In 2012 the jury of the Venice Biennale assigns the Golden Lion for the best installation in the arsenal spaces to the Urban Think Tank collective, which for 12 months has elected the David / Gran Horizonte Tower as an experimental platform for the informal study. The group realized the project shown at Biennale to make explicit and to comunicate visitors the internal dynamics of the community that has occupied the building .

The experiment developed by Alfredo Brillembourg and Hubert Klumpner, founders of the collective, and by their team works on an idea of architecture based on the involvement of the inhabitants and aims at developing proposals to redevelop the tower. In particular, new hypotheses of service and connection infrastructures are designed together with the SuAT Chair engineers in Zurich. "Nothing new under the sun" someone would say, the participation dates back to the '70s, to the team X and De Carlo, and after all the history of the Tower of Caracas recalls New Venice, the city-slum born from the sinking of a real estate speculation, inspired by the architectural and urban theories of Yona Friedman and described in the novel by Colonel Durruti "la strega mascherata".

However, the approach by U_TT show some innovative positions that have to be underlined. First of all, the informal "city" was not read as a metastasis to be eliminated from the body of the city but as a structure with a "sense" that ha sto be understood through a change of paradigm and point of view and, secondly, the work carried out by the experimental laboratory did not consist so much (or not only) in a "participatory" approach aimed at involving the inhabitants but on the observation and the study (lasting one year) of the dynamics inside the skyscraper. We could say... learning from the informal city.

The research presented in this paper aims to verify if and how, through the architectural

project, it is possible to consider some marginal social groups of our society as protagonists of innovation, using their specific cultural components as activators for the urban regeneration of some "residual" places where the concentration of these categories is generally more widespread.

From our point of view the expression "architecture project" does not refer to the "outcome", the beautiful building or the well-designed space, but to a process that, starting from the construction of a demand, constructs scenarios, tools and strategies of intervention "resilient" and capable of "adapting" to changes imposed by the challenges of our time. Therefore some "residual" territories, areas and places, on the border of the city, represent our field of action are, i.e. landscapes traditionally "waste" where functions and "inconvenient" subjects are localized. To these is imputed a degradation that pre-exists their settlement. Our "actors" are precisely these subjects, not considered as elements to be absorbed and "to be integrated" into our cultural, social and urban model, but as activators, able to propose, starting from their culture, different urban models that, perhaps for this reason, are more adherent to the characteristics of the place in which they have chosen (for different reasons) to settle or in which they have been "confined. "It is perhaps possible to start urban regeneration from their ability to listen to places that others no longer have.

Methodology

Like many researches, the one at the basis of this paper, starts from an inductive logic. The case study, on which some reflections contained in this article are based, is the upgrading of an area occupied by the gipsy camp at Scampia in via Cupa Perillo until summer 2017 when it was destroyed by fire. The project hypothesis elaborated in a thesis developed with the Municipality of Naples, works on two levels, the "material" one aimed at reducing the physical and environmental degradation of this residual area; and the "immaterial" one that aims to reduce the socio-spatial exclusion and the marginal conditions of the settled community. The inclusion that we hope for, and the exclusion that this community experiences, is implemented on three levels: social, economic and spatial. None of the three aspects can be investigated individually without continuous interdisciplinary calls.

Our work was essentially divided into three steps: the first one was the construction of a cognitive framework related to the condition of the Roma in Italy and specifically in Naples, the second step consisted in the physical description of the camp and of its rules of settlement; the third one aimed at developing a new model of Roma village that was not an abstract hypothesis, dropped from above, but was the result of a process that tries to interpret and translate into a shape the set of knowledge gained also through the comparison with some associations and with the Department of Environment of the City of Naples, currently engaged in land decontamination.

According to the magazine Panorama in Italy there are about 180,000 people of Roma and Sinti origin. 50% of them are Italian and four out of five live in regular housing, work and study just like other Italian or foreign citizens in our country. Instead about 40,000 people live in the camps. For many years, Europe has criticized us for the ineffectiveness of the solutions adopted in the integration of these communities, despite the assets invested. Criticisms are above all becouse we let to persist of the conditions of ghettoization related to the presence of "camps" that, in addition to not ensuring adequate housing conditions , radicalizes the condition of isolation of the included / recluse social group. In reality what seems to emerge from this framework of knowledge is that the Roma camps issues are more complex than they seem. As Antonio Tosi said, the field also represents a structure of social and cultural relationships, as well as an idea of living different from that of the condominium or building for housing. The field represents, with all its limitations, an idea of community (Patti 2015) .

First of all we have to consider, about the presence of Roma in the territory of the Municipality of Naples, that it is very difficult to obtain qualitative and quantitative data, this due to several factors including: the heterogeneity of geographic origin of the Roma population present in Naples; the "emergency" and "securitario" approach that until now characterized public action about the topic of Roma integration, that has shifted many of the investigations into the issue of public policy actions; the fact that most of the Roma living

in Naples are without a residence permit and, therefore, like the other "irregular" migrants, are forced to turn to the illegal or informal market for finding work and

Considering these premises, the most reliable sources, even if partial, about the quantity and quality of the Roma presence in Naples are the third sector and the Roma Office and the "patti di Cittadinanza developed by the Municipality. In Naples the Roma presence can be distinguished in three types depending on the nationality, the area of origin, the period and the reasons of immigration. The first group, the more ancient settled and fairly well integrated, is the Roma with Italian citizenship, probably belonging to the Roma napulengre, there are very few data around this group. The second one is that of the "Slavic" Roma, coming from the Balkan region, in particular from Serbia and Bosnia that start arriving in Naples in the '70s and then increased their number in the 90s after the outbreak of the conflict in the Ex- Yugoslavia. Very few of them granted refugee status. The third group is the Romanian Roma, whose largest migratory flow began in 2000 when, following the start of procedures for Romania's entry into the EU, it became easier to obtain a visa.

The housing condition of Italian Roma seems not to be very different from that of the other weaker Neapolitan groups. Regarding the un-Italian Roma we can say that some of them live in apartments in the historic center with no contract and in overcrowded conditions, others live in the camps or otherwise in precarious and marginal conditions and only few people lives in the refuges set up by the Municipality.

In general it can be argued that some Roma consider moving into an apartment a cultural genocide but at the same time many of them recognize the fact that the camp becomes a problem when sanitary conditions are precarious; different is the logic of the self-built village as Iaio told. He is the head of a community who in the book "Abitare illegale" by Staid tells how a sort of horizontal condominium is built regulating itself becoming a village that protects a different way of life.

Until recently, the final solution to the camps was considered popular housing; however, some experiences have shown that the transfer of Roma people in apartments does not always work and not only for economic reasons linked to the fact that these families do not have a fixed income and stability to be able to re-enter the rents, but also because some of them find extraordinarily difficult to adapt to live in a condominium.

The camp recounts: here there are private, semi-public and public spaces, with a different conception of private property, the house hosts the extension of the common space. The space of relationships and life is the outside. Spontaneous camps, on the border of illegality, are not out of the world, they are linked to the territory, everything enters even if filtered. The city establishes a relationship with these cells even if it is not visible in urban planning instruments. An informal field is born and grows in relative freedom, structuring itself according to the internal dynamics and to the relationships existing between the famiglie and the groups that live there. From the form taken by a field it is possible to trace the friendships and kinship existing, the relationships that are woven but also the mutual distrust between different groups and the closure of the camp outside represents the self-defense of the Roma communities arising from the events occurred in the years of social and spatial exclusion.

Forming process

The Cupa Perillo camp was built spontaneously , it is far from the urban streets and in close relationship with some infrastructures used as a shield and refuge from hostile and indiscreet looks. The camp grew at different times starting from the area closer the "Asse mediano". The first encampments settled in via Cupa Perillo was built , according to a logic of self-exclusion respect the urban fabric,using the infrastructre to hide themselves. As the camp extends and becomes crowded, the housing units occupy a larger portion of the lot, so they go out the "protection" of the route but continue to maintain a "safe distance" from the urban streets so as houses can be at the most "glimpsed" but never seen. When the route is flanked by the "skyway" the spaces below the viaduct create unusual spaces, often identifiable as fragments of other contemporary places defined mostly by objects that are located between the infrastructural constructions with the same apparent indifference with

which they would be placed elsewhere. (Vanore 2000)

The structure of the camp is based on two main relationships to be investigated. Firts of all the relation with the infrastructures that makes the area a "residual lot" respect to the urban logic of the context and a "waiting space", with its temporal suspension; then the relation with the urban roads from which the houses always withdraws of at least a hundred meters, hiding themselves thanks to the help of walls, vegetation and any other element that can act as a barrier. Until August 2017, the camp was a large settlement that even occupied the downhill ramps of the median route, closed because never checked after the built, and the adjacent roundabout . Inside, the settlement gave shape to the internal dynamics and relationships between families and groups that lived there and even if the sanitary conditions were generally very problematic,(this due to the presence of an illegal landfill in the vicinity and several unpaved roads) the camp represented a "part" of city characterized by an inner core of houses generally arranged in clusters around a common area and by a ring of more "public" functions arranged towards the edge.

As time goes by, housing became more and more stable. The first nucleus consisted of tents and caravans, then on one hand other groups starts establishing in the area and on the other old inhabitants set permanently in this naturally space introverted and congruent with their need of protection. So families started to build real and own houses with bricks, sheets and other materials of fortune according to an "evolutionary" logic that made the house change, enlarge or "bud" when a family expanded or somebody else arrived from the country of origin. The space as it was structured told about the more or less peaceful coexistence of five different groups, each one characterized by different generations. The houses were very well maintained, there was a very high level of flexibility and customization of the spaces, each house hosted a single-family that consist of about six or seven individual and was organized according to a regular plan on a single level. Usually houses were closed towards the road and open on the common areas.

In 2017 a fire completely destroyed the camp. The municipality of Naples, and in particular the Environmental Council, is working on the decontamination of the area and this represents an opportunity to develop the idea of an urban structure that resumes some aspects of the old camp and at the same time tries to establish more stable and "open" relationships with the context where the area is, in order to make it more permeable, porous and connected to the around urban fabric. Therefore, new possible accesses car for and pedestrian ones were identified on the different sides of the lot in order to make it less "enclave" and more "crossing territory".

The new settlement is designed by rethinking the two "archetypes" characterizing the camp: the wall and the refuge. The area is defined and surrounded by a new border, an architecture-wall (fig.2) that, on one hand, continues to protect the nucleus of the residences and, on the other, instead of representing a barrier tries to become a filter capable of triggering a progressive exchange between what is inside and what is outside. In fact, in this architecture some public places and services are located that aim to "reactivate" and increase the functions already existing in the destroyed camp. The aim of this architecture-wall is to support the opening of the camp towards the external context. In addition to the repair shop and the waste storage area, there are rooms in the building-wall to be used for the initiatives of the numerous associations that deal with the integration of the Roma in Scampia, such as those of CHICU ', the gastronomic space and cultural currently established in the Scampia Auditorium and managed by the "Chi Rom and Chi No" associations and the social enterprise Kumpania srls. From barrier to habitable wall... the edge line becomes a filter and, on the urban scale, establishes relationships between parts of cities that are more or less permeable. The wall becomes an opportunity to regenerate some areas, bringing appropriate dimensions, measures and scales that relate different worlds and the boundaries stop being line and becomes "thickness".

The other element that characterizes the new settlement is the refuge or otherwise the house. The problem that the project aimed to solve was: how to reconcile the maximum possible flexibility with the hygienic-sanitary requirements that impose the location of services and the passage of the plumbing and the electrical system? The "technical" answer was to "measure" the empty area through a "grid" and to localize the "core system" in the

vertices of it; this element consists of a prefabricated concrete core that contains all the predispositions for connections to the plant. It is rectangle (6 by 3 meters) capable of hosting kitchen and toilet. The first masterplan, however, gave back a very rigid image that reminded a "castrum". It was not much closer to the idea of constructing a flexible spaces that could cluster around different "common" spaces. The shape of the camp was not capable of "telling" and supporting the social structure of the inhabitants. This was the reason why we chose to work on more "layers" in order to cross different directions and grids that open up to different possible configurations of the space, by overlapping and synthesizing themselves (fig.3). The shape of the new camp so remind to the informal logic but, at the same time, does not renounce to an order. It aims to ensure the quality of "normal" living without renouncing the flexibility and personalization of spaces, which as we said "fit" the internal dynamics of the community and is often an indispensable condition for the maintenance of precarious equilibriums (fig.4).

Conclusion

The experience of the Roma camp in Cupa Perillo represented the starting point of a wider research that aims to investigate the evolution of particular urban aggregates inhabited by "foreign" populations to trigger new possibilities of urban regeneration.

Generally, the "foreigners" settle in or are settled in places that are the results of a story of progressive loss of value and of social and economic urban decline. This story determines the conditions for the locationing of poor people, i.e. low rents or lack of control and therefore greater possibility to re-propose models and uses different from those of the "host" society. The result is that the community in which these individuals are inserted is, already in itself, a "community on the margins" that looks at the arrive of "newcomers" as a further element of degradation. So this community barely tolerates the " foreigners "and only on condition that they renounce their habits and social, cultural, civil and religious customs. Most of the individuals who make up the host community try to leave the quarter as soon as their own economic conditions make it possible. In doing so, it may happen, and often in the long run it so happens, that the quantitative relationship between guests and hosts is reversed and that these places are transformed into enclaves in which the newcomers try to rebuild their living models in an "informal" and temporary way. So foreign people tend to exclude the host society and at once the society rejects foreigners.

This inversion of quantitative relationships, between guests and hosts, validates the hypothesis behind the research, that is to consider foreigners as potential activators of urban regeneration operations. At the same time it highlights the potential weakness of this "gamble", because starting from foreign groups - to propose alternative hypotheses of urban regeneration able to accommodate other "models of living", other ideas of public space, other places of worship- risks increasing the separation and therefore the conflict with the host society.

Starting from these considerations linked to the fact that the condition of "foreigners" poses different questions compared to the problems of the settlement (not just the more specifically residential) of migrants, nomads and refugees, the research aims to verify if and how the architectural project can contribute to taking on some of these problems and to construct some answers with a logic different from the traditional one, that the architectural project can make concrete.

As we previously said, the postulate of this research is not considering "guest" subjects as elements to be absorbed and "integrated" into our cultural, social and urban model, but as potential "activators" of the design process. The basic hypothesis is that this condition can be particularly productive not only for the "groups" and the "communities" guesyed but also for the host ones and can trigger innovative forms of "inclusion" and "urban regeneration". This practice, urban rigeneration, is by definition sensitive to the characteristics of the place, oriented towards resilience and linked to the bottom up transformation mechanisms. Innovative forms above all because they are based on the search for a "specificity" of these "foreign" settlements, this can introduce different qualities in the area and for this reason is useful and interesting also for the host community.

Thus design experimentation becomes an instrument to highlight these potential benefits and specific qualities and the architectural point of view represents, in all the phases of the work the, the look used to examine problems identified. But according to this logic, the research starts from the belief that the architectural project is called to show, rather than its ability to offer definitive answers, its procedural nature (Amirante 2018), i.e. the nature of a process that, starting from the construction of a question, builds scenarios, tools and intervention strategies "resilient" and capable of "adapting" to the changes imposed by the challenges of our time.

Figure 1. The Masterplan of the Roma Camp.

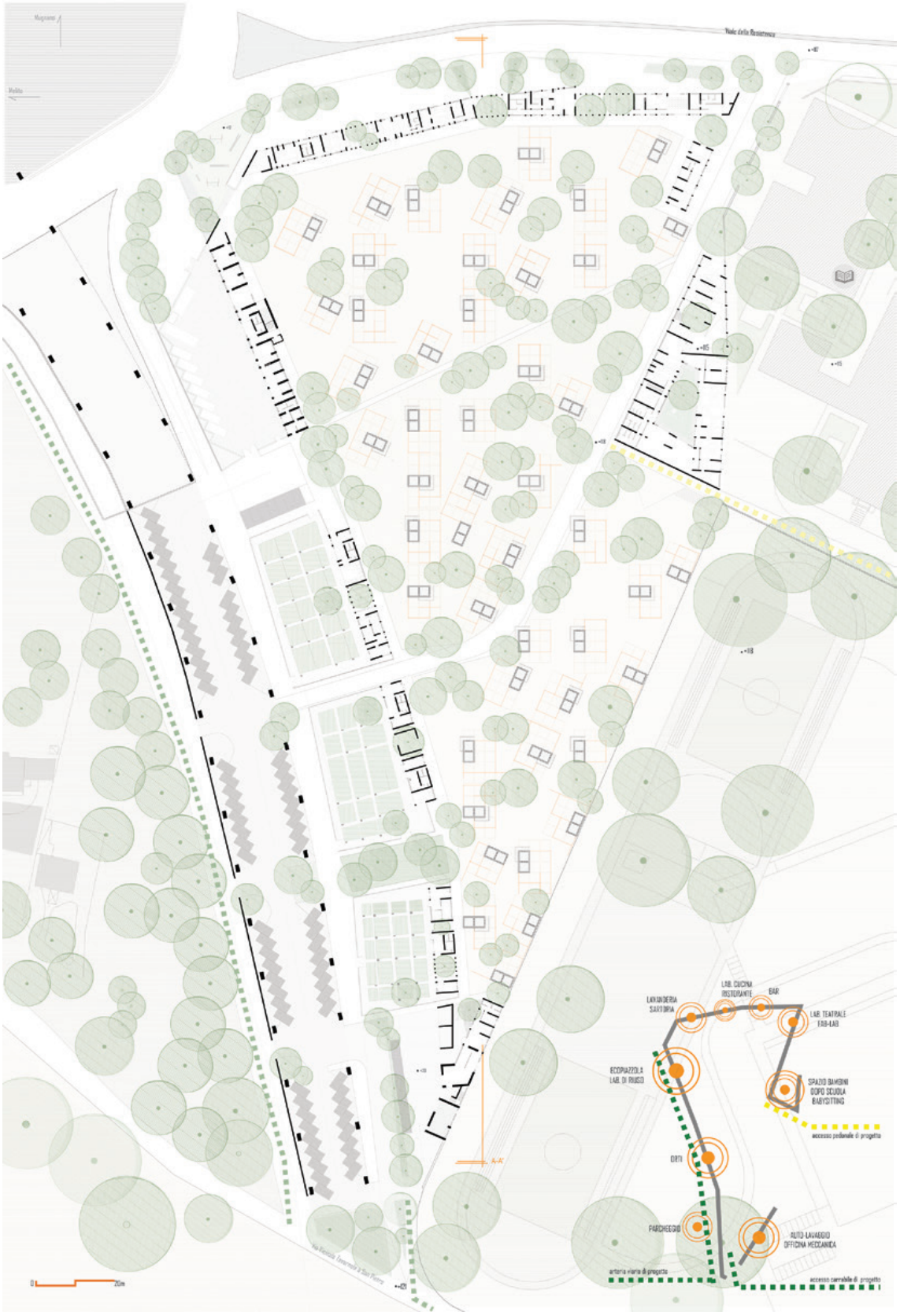


Figure 2. The "Wall".

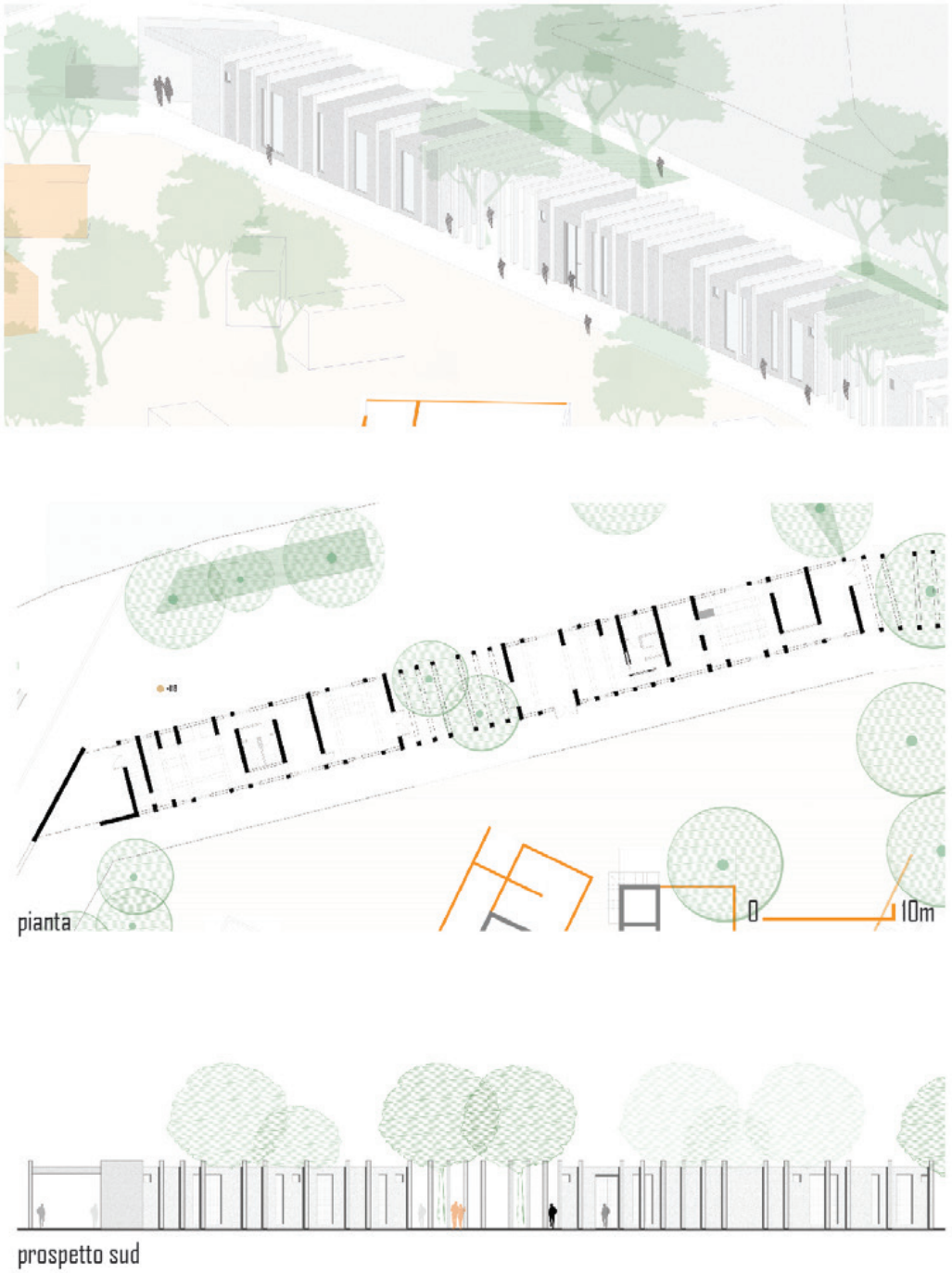


Figure 3. Working by layers.

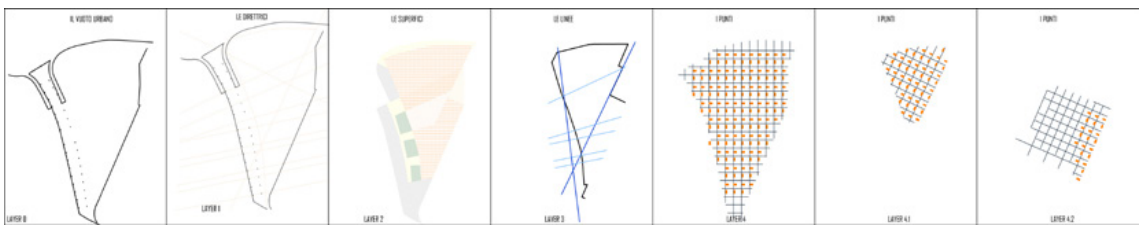
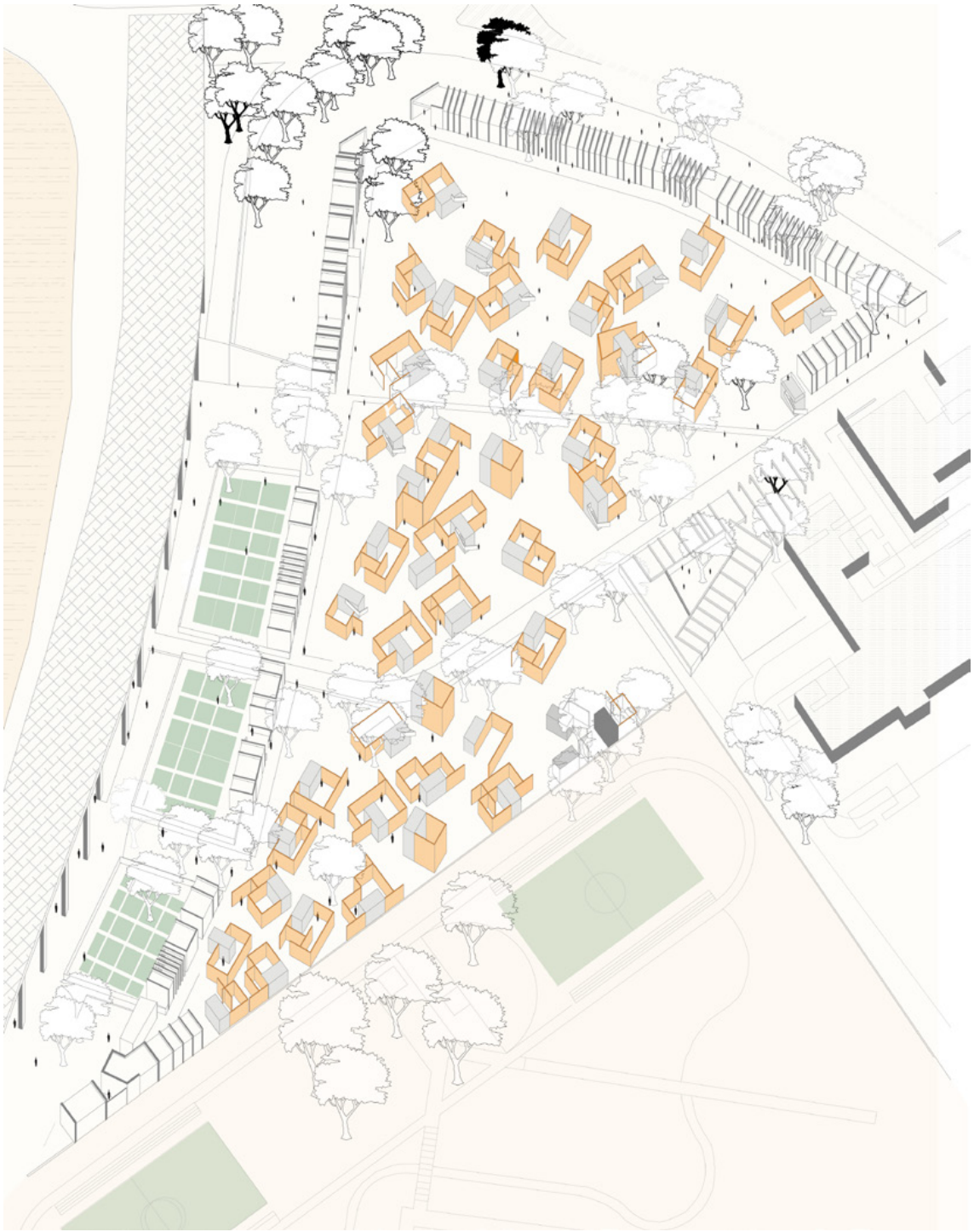


Figure 4. The informal city



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Depicting and transfiguring informal constructions in Albania

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This visual research on the informal constructions built in Albania after the fall of the Socialist regime was born as a response to a landscape problem afflicting this territory. When the 1990s migratory wave found coastal towns unprepared, the growth of housing needs created a new type of land organization based on a parasitic exploitation along the coast road, where concrete frame buildings popped up.

The beauty of the Albanian landscape seems to be equivocally corrupted by the rigid reinforced concrete skeletons that measure territorial distances and scatter the view, brutally framed by structures or scratched by hovering concrete landings, in fragments.

There is a need to become aware of this reality that can not be demolished or ignored. Architecture needs to reflect and find out new visions to innovate their relationship with context/environment/landscape and ways of occupying/using/reusing and even completing the unfinished construction works.

Introduction

After the fall of the People's Socialist Republic of Albania occurred an urban phenomena, it was characterized by informal constructions built near the main cities and infrastructure links, and along the coastline (Menghini, 2014).

This kind of phenomena has already distinguished urban transformations all over the world. Often, it consists of different ways of illegal occupation of private property through constructions that are inspired to Maison Dom-ino model.

It was designed in 1914 as self-help construction system. 'Dom-ino has become the ubiquitous form of construction in all developing countries: a reinforced concrete framework open to any infill and thus to any spatial interpretation' (Aureli, 2012).

Le Corbusier was inspired by wooden pillar of vernacular buildings in Turkey on one hand (Vogt, 2000), and by repetitive nature of Flemish houses on the other.

The Dom-ino system is characterized by several, generic and adaptable, types of housing aggregation for different urban contexts, thus it is able to set up innovative settlement patterns and not as merely a serial array. Its aim is making new sense at public and private space alternation.

Starting from the most common and known drawings of Dom-ino system, usually not accompanied by prospective, plan and section drawings, we can understand that Le Corbusier didn't image this model as a scattered building but he developed his prototype imagining post-war reconstruction, especially in order to give housing to the low class.

The Dom-ino σχημα (Ugo, 1987), and its flexibility, well suited to the rigid Fordist-Tylorist organisation of work, and to the most advanced development reinforced concrete industry. Each of these matters leads to the economic development of supposedly spontaneous settlements.

The point of view, which generated the Maison Dom-ino's perspective, became the production *dispositif* (Deleuze,…) able to meet the most hidden and individual needs, to the detriment of respect for the fundamental principles of collective life.

In line whit that, the Dom-ino model has been applied in many places of Albania in order to satisfy the social emancipation desire through the squatting of public land.

Methodology

Albes Fusha's photographs have been taken during the summer of 2015, along the coastal road stretching from Lezha down to Fier, and record the alteration of the relationship between nature and those constructions of the Albanian territory that man has built after the fall of the communist regime. In the range of selected shots, we have incomplete, abandoned or partially occupied buildings, without an evident architectural quality, documenting how man has illegally occupied large areas of land and turned it into a place for living.

The photographic composition, mainly structured on a marked figure-ground distinction, emphasizes the isolated and marginal condition in which these buildings fell, giving those un-meaningful objects a monumental feature. Informal constructions, while being incapable of conveying any convenient form or way of living, evoke potential architectural overwriting.

Indifferent to the geographical features of the places where they have been constructed, these buildings occupy the scene where the events take place. Through different ways of enclosing the interior space, implying peculiar footprints on the ground, the frames filter out and conceal portions of the surrounding landscape. The depth of the view on the ground, framed by the pillars supporting the building, compensate for the interruption of the mountainous landscape on the background. Perimeter pillars freed from horizontal connections shape the space on which the shadow of the construction above is projected. Thus, the ground floor establishes an osmotic relationship with the natural environment.

Informality gives these houses a peculiar mode of settling that paradoxically appears as a form of respect for the land on which they lie, even though in reality they meet mere functional needs (protection from possible floods in flatlands, a possible further occupation by the family in the future or the desirable use for commercial purposes). In all of these photographs we can recognize 'l'icona dello scheletro, potente strategia concettuale,

diviene quindi la matrice della costruzione urbana senza descrizione, una vera e propria invasione della crosta terrestre attraverso la definizione plastica di una nuova geografia attiva nella duplicazione di quella naturale. Lo scheletro parte da un dato assolutamente concreto: una colata di cemento con dei sostegni e null'altro'(Gambardella 2005).

The beauty of the Albanian landscape seems to be equivocally corrupted by the rigid reinforced concrete skeletons that measure territorial distances and scatter the view, brutally framed by structures or scratched by hovering concrete landings, in fragments. This space taken from nature reveals itself as a sort of treasure chest containing an atavistic dark space within, waiting for life or better aimed at achieving refining finishes that refer to the style of Western wealthy houses. The mystery that transpires from the brutal cuts of the unsecured openings on the exterior walls, hides a deep darkness beyond provisional partitions, namely images of emptiness, erected without necessity but driven by a desire for emancipation from the context where they lie.

Moreover, the selection of the visual research subject and the type of the framing aims at revealing the common traits that characterize each building according to those principles and patterns that allow the domestic unit expand based on the growth of the family, adding further spaces for new dwellers. The potential shown by the construction is unveiled in its unexpected incompleteness featuring certain elements that could cause a future vertical layering of domestic spaces.

Three different types of framing capture the disturbing presence of informality on the Albanian coast:

- Front medium shot, which reduces the volume of the construction to the two-dimensions of the façade overlooking the road. It is an expression of the owner's aesthetic sensibility, often conveyed after his stay abroad, or even a statement of a certain business by means of varied and multiform signs.

- Foreshortened shot, which outline the contours of the building in order to reveal the spatial volume in relation to a possible superimposition atop the roof. In these pictures, elements such as porches or loggias establish a close relationship to the outer space, showing how informal constructions engage and adapt to their environment. Ranging from arable land to landscape contemplation.

- Long shot, in which the image loses its direct contact, merging with nature and standing up on the landscape as a classical temple in dramatic position. Given the suspension of time in these shots, where the houses reach an ambiguous status between being a ruin of something that is slowly crumbling and the incompleteness of an architecture to come, some kind of reconnection to the picturesque representations of the eighteenth century is appropriate and lets the informal houses created by speculative purposes have a degree of sacredness.

To the eye of the photographer, who attempts to give a subjective view of the phenomenon, has been associated with an analytical axonometric drawing to explore the relationship between the parts. The latter have been abstracted from the context and analyzed in terms of formal incompleteness and visual uncertainty.

Wireframe representations show how the skeleton frame structure shapes the articulation of volumes and becomes the backbone on which one sets the enclosures that define the incomplete volumes of the building.

Maintaining that 'the decisive power of the line is the only means for a sufficient and exact understanding of the structure of bodies of the visible world; the line unites and separates' (Purini 2007), the image of these buildings can be defined as our objects of investigation and research. The lower axonometric view discloses the punctual and discontinuous footprint on the ground and an 'unaware' (Gambardella 2004) reference to the modernist model of the *Maison Dom-ino*, freed from its settling logic and chosen as a minimum isolated unit to be reiterated.

The strict individuality of the architectural elements, which are surgically separated from the beauty of the uneven landscape, clearly reveals solecisms, imperfections, and rawness that is intrinsic in constructions erected without a clear design (Ambrosi 1996) and now available for a radical transformation.

Without any intention to praise architectural spontaneity, as in Architecture without

Architects (Rudofsky 1964) or in Freedom to Build (Turner, Fichter 1979), we sought to explore the potential of these unfinished constructions and discern whether they 'possess positive elements that we can learn from, concepts that we can absorb, and complex practices that we can borrow, both to transform those same buildings and use them in brand-new projects' (Licata 2014).

In-depth analysis of the constructions has been conducted by selecting architects of both nationalities to formulate a vision on

Albanian informality, based on sixteen shots by Albes Fusha. Each combination of architects, chosen by the editors of the respective countries, manipulated an image that could be close to the authors' sensibility, as an opportunity to trigger a possible distance-dialogue over the same construction, declaring a personal position on informality. Thus, the diptych is both the formula of the exhibition and the way different transfigurations take place on the same issue, where the original image migrates in all fields of aesthetics.

Forming process

The following definition condenses the premises on which 32 architects got involved in the Evoked visual research: 'architecture today is nothing more than an operation of rewriting a text that is already written, an addition or rather a removal of something that already exists, in a finished form' (Garofalo, 2013). Different outcomes transfigured each picture as a broken, abandoned or in embryo text by using mixed techniques of representation. A different way of understanding the base image and different modes of alteration of the figure in relation to its background gathered a sequence of 'double' interpretations, where new custom shapes and uses offer multiform visions on the policies to face the phenomenon (Molinari, 2012). The approach leading to the figurative and textual outcome can be conceptualized in elementary actions, which speculate on an architectural need to design a new formal interpretation or its absence:

LAYERING of signs and figures, reworking in a new order and allowing settling of future possibilities. The operation has been adopted by a significant number of architects. The technique of collage (Magagnini, 2013) conveys an immediate possibility of sharing one's design thinking, since it allows the simultaneous presence, in the same image, of significant portions of the original grafted with new elements. These collages reduce any temporal discrepancy between the elements of the figuration, achieving a simultaneous visual balance in which a new order replaces the existing one. 'Through the collages we can make something new form what we have, we can reinvent the past and create new connections between things and people' (Baglivo, 2014), disclosing the architectural idea by achieving a new visual balance. The action of layering implies the possibility to visualize new relations with the context, as well as increases the architectural density, with the aim of finding again a new collective meaning of the Albanian landscape that has no architectural landmarks.

IDENTIFICATION of important fragments with a dramatic charge, or archetypal figures on which the architect conducts limitless extensions, denouncing the need to rework the neglected status as a condition from which to raise the dignity of informality to that of architecture (Servino, 2012).

ALTERATION of images according to re-elaborations of existing elements, shaping the formal pattern that finds its necessity in the original landscape. While informal constructions imply an attitude toward change with no fixed outcome, the visions freeze certain configurations that have their figurative power in disclosing possible scenarios.

HYBRIDIZATION of different techniques of representation, both digital and manual, establishes a new contact with reality, where the two integrate each other's limits in a relationship of figurative integrity and expressive strength. The imaginative thinking reactivates the movement of the object that migrates from one dimension to another.

REMOVAL of any direct reference to the base image, from which we capture only a few hints, and subversion of the initial representation by the introduction of abstract rewritings, mixed with personal biographies and design thinking. The conceptual operation is firm, it achieves a high degree of abstraction and pushes the building to the edge of imagination and critical thinking *(IAN+,2010)*, from which we can shape a new idea of architecture,

eligible to be further developed.

REPETITION of infinite patterns and variations on an apparently blocked text, on which the line between writing and drawing becomes unstable. The original construction, if carefully elaborated, can be sampled and evoked as a fragment, avoiding its entire visual reproduction (Silenzi, 2012).

REDUCTION of the base picture to a mere drawing, by means of the recognition of the contours that refer to the three-dimensionality and the abolition of any superficial variation of the elements. Although the elaboration does not immediately reveal the intervention of the author, being blended in a natural association with the starting condition, it shifts the scope of the formal experimentation to the functional and conceptual redefinition of the building.

SAMPLING of well-known images as an instrument of evocation of architectural thinking. It is structured in different ways and achieves various expressive results. This action does not provide an immediate formal or spatial response to the phenomenon, but it shows a personal position through the act of provoking or denouncing a certain state of things using the image as a medium.

REINVENTION of the site in which the new pieces have been placed. This action is not an ordinary rewriting of natural conditions, but it rather understands nature as the protagonist of the scene and entrusts nature for governing and channeling the desire to occupy and possess the environment.

Cleared, reflected and re-naturalized, the landscape of incomplete constructions was not meant to be a background for the events but rather a subject and figurative substance that can lead to projects and desires of transformation, having the task of repairing the link with architecture (Vargas, 2014).

Conclusion

We can recognize, in the works presented, the ultimate role of representation that is intended to be a device (as well as a means) capable of renewing our demand of seeing and transform those objects that are not yet able of evoking architecture.

Figure 1. Informal constructions mapped along the Albanin costline.

Figure 2. Axonometric views.

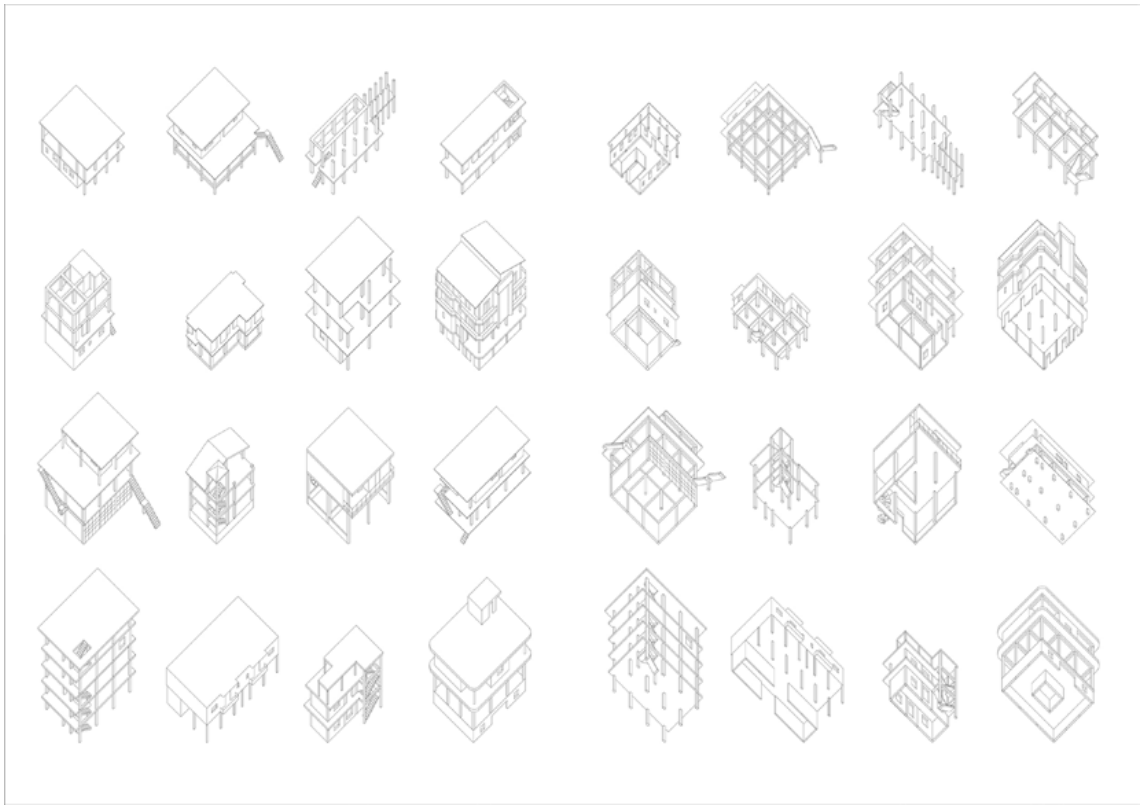
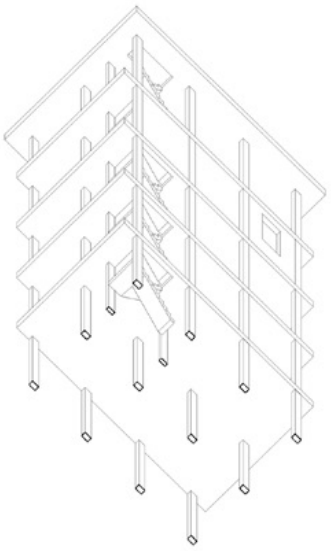
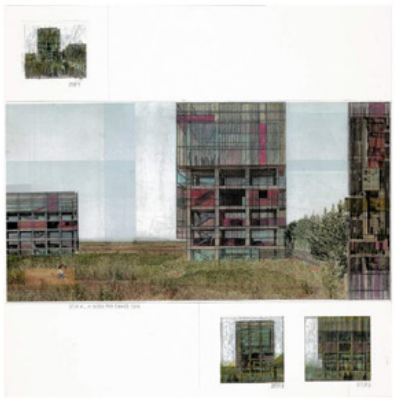


Figure 3. Exempla of ALTERATION.



floors: 5
function: residential/commercial
status of occupation: abandoned
built-up area: 121 m²
distance from the coast: 12,5 km



Michele Beccu

Evoked envelope

Arben Golemi

Image on image

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DESIGN

New Forms of Living.
The metaphor of the city within (and against) the city

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This essay illustrates three laboratory projects of public housing within the urban structure of the Metropolitan City of Bari. The aim of the research is to define "New Forms of – collective – Living" alternative to the typical isolated family-house model. This critical thinking refers both to the city, which actual shape is the tangible reaction of neoliberalism politics and both to the weakness of the family dwelling as an expression of isolation, negating any possibility of common and sharing.

Contemporary forms of immaterial production plays also a decisive role in shaping the city and urban relationships in individualistic terms mostly within the new paradigm of the man entrepreneur of himself. Toni Negri argues that this paradigm consists in new forms of labor being now "cooperative" and organized in common. Paradoxically the individual freelance should work and perform its habitus in collaboration, which means also a correspondence in spatial needs and living, actually inadequate within social housing stock.

The project proposals consist in elaborating recurrent archetypical principles from historical and contemporary investigated paradigms – types – and their declination to three existing housing complexes of ARCA Puglia within three typical urban conditions. These strategies, which attempt is to juxtapose and integrate communal-shared facilities and spaces, established different relations with urban morphology. Existing housing, obtained as a summation of individualities, now assumes a more spatial articulated character in a sort of a micro city within the existing city, giving everyone the possibility to perform life in common. These effort means an act opposed to the private and isolated condition of neoliberalism both for family and individual workers' dwellings.

1. The Housing Question: The family household as a place of *internment*

Today we should contextualize *the housing question*[1] within the paradigmatic shift of capitalism forms of production which are accompanied by the passage from the *disciplinary society* – introduced by Michael Foucault[2] – into the new biopolitics of the neoliberalist society. In this circumstance, the family as an apparatus of control and discipline has become, in a more *laissez faire* economical model, an instrument of market governance, basically a consumer good. Within this new paradigmatic episteme, the etymologic meaning of home as a shelter, as something useful to our lives, becomes a mean of ex*changing value* that is, not only an instrument of real estate, but the material abstraction of everyone's labor. In other words, house possession represents the economical asset – *it serves as a warranty for banks and institutions* – for the family unit.

In his famous essay, *Postscript on the Societies of Control*, Gilles Deleuze explains the crisis of the internment places – such as the factory, the hospital, the school, the family and the jail – of the "disciplinary society" of Foucault. Deleuze affirms that "the family is an 'interior', in crisis like all other interiors – scholarly, professional, etc."[3]. In this passage, from the *discipline* to the *control,* the household, doesn't' disappear, but on the contrary, the domestication usually proper to the *oikos*[4]*,* involves now the sphere of the entire production and the city. I would notice that the new ideological – isolated – position of the family place, still significate an ideal of success and self-realization; the family environment and its structure is still reminiscent of the American dream of isolation and wealth representation and the only possible way of living in the general conception of dwelling.

Talking about the housing condition today means, first, to rethink in political and social terms and then to trace a methodological approach to the project. This position might help to understand the subjective character of the human living condition and its relationship with space and architecture. Unfortunately, contemporary attempts of most architects dealing with housing are still being addressed and controlled by the market system, landowners, and investors' decisions. This is not an ideological problem related to the new economy's ruling class, but a depressive situation where the architectural project is condemned to a rhetorical mean of representation and hyper-design speculation.

Housing blocks shape our cities through a system of overlapping (isolated) individualities. Basically, this type of housing in collective buildings is the result of stacked (detached) apartments. On the one hand, this condition of the city declares, in coherence within neoliberalism principles, an individualism[5] of subjects and inhabitants, on the other hand, it denies the individuals any possibility of political participation and access to the common. Common intended as the public sphere is simply refused. This analysis helps to understand the terrain of the contemporary housing condition. So, the attempt of this paper is not to construct a political scenario of struggle against the capitalistic structure in the housing process: the main relevance of this paragraph is to rethink – in architectural terms – the meaning of dwelling as a spatial and cultural condition.

2. The City-Building as an apparatus against neoliberalism: from "The Minimum Dwelling" to the collectivization of living

In the book *From the Factory to The Metropolis,* Antonio Negri explains the paradigmatic shift on which the new forms of immaterial (neoliberalism) production extend to the entire sphere of the metropolis. For Negri, the city, where the organization of production invests the entire life, affronts a continuous exodus of labor force towards the capital. In these terms,

1 The argument affronted in the current paragraph refers to the essay of Frederick Engels, *The Housing Question*, published on the newspaper *Volksstaat*, in 1872. It is important to notice that for Engels, the housing question was first a social question, a problem regarding the capitalistic relations and then a solution of the housing crisis itself.

2 Foucault, *Nascita della biopolitica: Corso al Collège de France (1978-1979) (Campi del sapere)*, 2005

3 Deleuze, Gilles. "Postscript on the Societies of Control." 1992: 4

4 Aureli, *Less is Enaugh: On Architecture and Asceticism*, 2013

5 Foucault describes the political and economic character of the neoliberal capitalism based on concurrence and individuality; see Foucault, op. cit., p.194-216; see also Deleuze, op. cit. p.5

the city is "both a place of exploitation and a terrain of exodus"[6]. In the new Metropolis, consumption overlaps production and this process is generated everywhere. As we think to the proliferation of today's multi-functional buildings or the way big-malls or hypermarkets are being populated during weekends and day-offs by families, we should consider the amazing role of these complex spatiality on living behaviors. Here the building "in the form of the city" becomes the new apparatus which leads to a greater productivity and consumption and to a massive exploitation of the individuals as both producers and consumers.

To be more precise, these places condense the biopolitics of neoliberal capitalism in the form of a complex of programs and uses. It's also curios to notice that, while housing design is limited to the individualistic effort of *hipster* or *radical-chic* architects and other ordinary architectural offices, larger and powerful firms shape the form of our cities. While the formers contribute to the creation of an amorphous *materia*, a generic scenario of well-designed palazzine, villas, or other adorned family houses, the latter represents the concentration of labor power to a limited number of architects, usually Archistars or industrial-like offices.

The contemporary housing condition assumes these relations as something normal and obvious and given facts. In the habitual jargon, housing for different subjects, like unrelated individuals, outside a family structure, have always been considered, especially within the Italian context, as *special dwellings*, like dormitories, transitory homes or 'parking-houses'[7]. Family home is accepted as something obvious and natural for everyone, while what goes beyond, is still considered different, usually an anomalous way of living. Of course, in past and recent times, the ideological affection to dwelling has also been different, sometimes radical, ideological or sometimes leaded by more practical needs.

An important critique on the housing question was made by the Czechoslovakian avant-garde artist and intellectual of the 1930s, Karel Teige. In his most important book, *Nejmensi byt* (The Minimum Dwelling[8]), Teige, criticizing the research of the modern architects of the II CIAM of 1929 in Frankfurt, introduced a new radical definition on the new forms of dwelling for the "subsistence minimum". For Teige, the minimum dwelling could not be considered as a reduction of the typical family-household, but it should represent the disintegration of the typical family environment[9]. New forms of dwelling can be defined only by the *collectivization* of all those aspects formerly included within the housing apartment or the single house[10]. The collectivization of dwelling, for Teige, is the solution to the problem of housing for both socio-political and architectural aspects.

Back through the historical experience of dwelling – as Teige evidences – there have been many interesting examples of collective living which we can use today in order to *question* the contemporary problematic of our living culture.

As we refer to the individual of knowledge and to its status as a single dweller within the urban fabric, an important paradigm of collective living is represented by the model of the college of Oxford and Cambridge. The Oxbridge quadrangles, based on the monastery archetypical forms and life, integrated the lodgings for students within the cloistral structure in the 15th century in the college of Trinity and Merton. The college's formal structure was a sort of microcosm where, besides the private cubicula for studying and the shared sleeping-room (usually for 3-4 students), everything was distributed and shared within the architectural organism; a place built as a sequence of spatial episodes and different uses between the students. This paradigm, on the one hand, affirms a structure arranged as a microcosm of an elevated grade of sharing, on the other hand – as we consider the plans of the two towns during the 17th century – these large cloisters assumed the character of cities within the city in the neutral *materia* of the medieval urban form of Oxford and Cambridge.

With the advent of the industrialized society, in 1829 Charles Fourier had a large influence on questioning the traditional family household and liberating the domestic labor from the sphere of the house. His Phalanstery, inspired on the baroque-like palaces of the time, was

6 Negri, *Dalla fabbrica alla metropoli: saggi politici*, 2008

7 During the end of the 60s and the 70s in Italy, many architects worked on new forms of dwelling based on the typology of the so-called Casa-Parcheggio, a sort of transitory building for different types of users including both small families and single individuals.

8 Karel, *The Minimum Dwelling, trans. Eric Dluhosch,* 2002

9 Ibid., pp. 239-240

10 Ibid., pp. 18-20

designed as a complex spatial model, a place where life and labor were integrated as a pleasant activity. This radical vision, although it was based on the disintegration of the family dwelling, was later brought by Jean-Baptiste Godin in the familistère of Guise in 1859. The familistère, although apparently loses both the Phalanstery's spatial complexity and its radical idea of the domestic space, represents an interesting typological solution. The main typological principle of the covered courtyard assumes an introvert urban character of a sequence of three public 'squares' within the three buildings. Both its ambiguity and interesting aspect is the attempt to achieve a sort of gradual passage to the collectivization of dwelling as to the family apartments were integrated, apart from the large communal spaces, a series of centralized domestic facilities, like child-caring, communal kitchens, laundries, ecc.

In 1930, the soviet urban-planner and economist Leonid M. Sabsovich, in his most important book, *The USSR in 15 Years,* described the reorganization of the house as a complex social structure where the private space had to be reduced to a mere 'sleeping cabin'[11]. Influenced by these affirmations, many architects of the Group of OSA, like Ivan Nikolaev, will elaborate a series of complex project proposals of Dom-Kommunas. In Nikolaev's students' Dom-Kommna – the Textile House – built in 1930 in Moscow, the minimum dwelling was reduced to a single room with two beds, while all the rest was shared and centralized. As a result, this project consisted on a complex articulation of spaces, internal galleries, large linear lobbies and spaces within spaces which gave to the buildings and to the proposals of the time the character of the city within the city. Every corridor or circulation passage, every specialized communal room, was distributed within the internal structure as a sequence of shared life activities and events. In this manner, the *Super* Dom-Kommuna of the 1930, represented the idea of the social condenser that was one of the main inventions of the soviet constructivist architecture: not only a complex space and program, but also a place that serve for its dwellers to manifest their lives and labor as an artistic event[12].

3. The *posto-letto* typology: housing for the subject of *cognitive capitalism*

The shift from material to immaterial forms of production is being generated also in those cities formerly involved only in industrial production. In these post-fordits contexts, a fundamental effect is played by the presence of university poles, research organizations and enterprises within the urban and architectural structure of the city. Students, as well freelancers or single workers determines the most common subject in those cities trying to create a certain identity related to knowledge economy and cognitive capitalism. In the Italian context in general, and in more specific terms, in the south of Italy, like in Puglia or in other regions, the manifestation of cognitive capitalism is followed by a series of ambiguities and contradictions.

As many philosophes and sociologists has described, the main character of the immaterial forms of production are related to the precarious forms of labour and to its paradoxical manifestation as a whole life activity[13]. The contemporary philosopher Byung-Chul Han, recently, reworking on the theories of Foucault on neoliberalism describes how the neoliberalism forms of production conduce the individuals to focus more precisely to their life as a performative act[14]. Han defines the life of the new individuals as a process of continuous work and labour in order to become more competitive and *hyper*-productive[15].

On the one hand, if this condition recalls the individualistic character of the cognitive worker, as its intellectual capacities can be managed only by the personal attitudes of the "man as an entrepreneur of himself", on the other hand, I should insist on the fact that the family structure has been important to neoliberalism as much as on industrial capitalism. As Melinda Cooper has noticed in her book *Family Values*, the retire of governmentality in

11 On this see also the article published by L. Sabsovich in *Sovremennaja Arkitektura SA* 3, 1930, 7-9.

12 Kopp, *Città e Rivoluzione: Architettura e Urbanistica Sovietiche Degli Anni Venti*, 1972: 136-178

13 On the argument of immaterial labor and its corresponding to the entire sphere of life see: Lazzarato, Maurizio. "Immaterial labor." Radical thought in Italy: A potential politics 1996: 133-47; see also Bologna, *La New Work Force: il movimento dei freelance,* 2015

14 Han, *Psicolopolitica. Il Neoliberalismo e le nuove tecniche di potere,* 2016

15 Ibid. p.21

favour to market *laissez faire*, has transposed the welfare condition to the family structure. Cooper affirms that "legal theorists wish to reestablish the private family as the primary source of economic security and a comprehensive alternative to the welfare state" [16].

Outside the family house, students or single workers are forced to live with others by sharing small rooms obtained as the subdivision of former family apartments. I would define the phenomena of the *posto-letto* – literally a bed-place – a sort of new housing typology as these kind of solution is the only possible (economical) way to dwell alone for people working and studying without stable and permanent familiar relationships.

In typological terms, the *posto-letto* is both a minimum dwelling – corresponding to Karel Teige's conception – and a spatial arrangement of subdivided family apartments – the typical model of housing within the urban fabric. The typology of the *posto-letto* as a minimum dwelling for the intellectual labourer is not the solution for receiving a shelter. It is exactly the opposite: an alarming signal that the new working class of the metropolis, the student, the researcher or the freelancer, deserves an alternative model of collective dwelling beyond the obsolete family structure. We should rethink the house for everyone as a flexible place, where the domesticity of labour should be replaced by centralized domestic services and common social rooms and where the minimum private sphere becomes the single cell. In such a perspective, housing could destroy its conception of collection of isolated individualities and the *posto-letto* could reassume an architectural dimension as a pleasant place for dwelling alone with the others.

4. House for everyone: Three different Forms of Collective Living for the Metropolitan City of Bari

In order to consider the project of the collective house as a new model of dwelling beyond the typology of the *posto-letto* and the family living model, we should think to it not as a single architectural episode, but as a strategical intervention within the scale of the territory and the city. The project presented in this essay is part of a Diploma Unit entitled "New Forms of Living", a tutoring collaboration with a group of undergraduate students during the academic year 2017-2018 of the Polytechnic of Bari[17]. The selection of Bari as a case study is both related to the territory on which our critical thinking is directed and also on the problematic of dwelling for the individual of the subsistence minimum, the researcher, the student, the single or the freelance worker. The attempt is to contribute, through the efficacy of the method of design and the strategical example, to a new approach on the housing question. Of course, the proposal doesn't aim to offer a definitive solution, on the contrary, it wants to question and launch a new discussion on the possibility to subvert the obsolete traditional way of living.

For the project, we focused on a terrain where, in my thinking, can still represent a place of common and togetherness, beyond the financial logics of profit and real estate, the social housing stock of the Municipality of Bari. For this, an important moment of the student's research and project was the collaboration with ARCA[18], a public institution, owner of the social housing buildings of the city. The successive passage consisted on the selection of a series of existing blocks that presented both an isolated condition of living and a problematic relation to the urban fabric. Through the many examples of ARCA's patrimony, the choice was related to three different typologies, all shaping three urban conditions within the territory of the Municipality. Every project, as a generic strategy of intervention, tried to reinterpret the urban structure of every condition. In each case, the introduction of external open galleries constitutes a common strategy to unify the circulation, while the form of the collective spaces was determined by the general condition of the area and of the building structure. In political terms, although, the strategical focus was not the minimum dwelling itself, but the collectivization the former-family living tradition, we tried to achieve this through a gradual

16 Cooper, *Family values: Between neoliberalism and the new social conservatism(Near futures)*. 2017: 9

17 Diploma Thesis: rel. Defilippis, Franceso; Argentieri, Cataldo, Lapi, Papaleo, Piccolo, Solazzo, , *Nuove Forme Dell'abitare. Il Coliving*, Politecnico di Bari, 2017

18 (Agenzia Regionale per la Casa e l'Abitare, Trans. Regional Agency of Housing and Dwelling); see website: www.arcapugliacentrale.gov.it

integration of spaces and shared areas depending on the scale and the quantity of the existing inhabitants.

A new 'machine' for living and working together

The housing blocks of the Duca degli Abruzzi, one of the first interventions of the IACP[19], are collocated along the lungomare of the city of Bari. These blocks were built during 1909 in order to house those who couldn't afford an own dwelling in a period of housing shortage. The whole complex, part of a more dilated urban area, both with the monumental buildings of the fascist period, contributes to the form of the city along the seaside part. The complex consists on a series of detached linear buildings, surrounding a larger area of three shorter parallel housing blocks. As morphologically the system evokes the character of a large *hof,* in typological terms*,* every linear block host a series of small family flats with a maximum of three rooms. These two conditions, both urban and typological, directed the intervention in two parallel directions. On the one hand, the courtyard character of the main complex is used by giving a more public use to the central blocks, the ones leading the composition of the whole. In fact, the intervention readapts the internal nucleus of the three parallel blocks as a unitary system connected by light bridges. The central one becomes a large open space containing workshops and common facilities, while the others host a series of one-room apartments. On the other hand, the external longer blocks, are reinterpreted mainly in typological terms. They become more autonomous with the introduction of the external loggia and a series of communal integrated facilities. In these blocks, *the minimum dwelling*, obtained by liberating all non-structural elements, consists in a unit of two apartments sharing a small common kitchen. In this case-study, the scale of the strategy reinterprets the urban morpheme as a sort of *neighborhood within the neighborhood*, where external long elements contribute to frame the domestic scenario of the central housing blocks. In these interpretation, architectural elements, like the loggia, the bridges, and light *filling* towers are used to achieve the purpose.

Revisiting the architecture of the 'familistère'

The courtyard building block of Via Dei Mille of 1926, is one the social housing blocks of the city built during the fascist regime[20]. Collocated outside the railway line, formerly part of peripheral area of the city, the building is part of a regular grid of townhouses and other recent residential buildings. The block represents both a typical urban condition within the city – as the main morpheme of the urban fabric is the grid – and a typological structure, very common in the 1800s. In these terms, the intervention aims to establish a strategy of design, adaptable also in other similar conditions. In this case, the project consists on the declination of an external loggia, an architectural element that could give a new spatial relation between the lodgings and the central open area. The double span metallic structure of the loggia could also be intended as a possible extension of the single dwellings, a sort of semi-private place. Within the building, the main existing layout of family apartments is revisited through their transformation in one-room apartments for singles, workers or even young couples. Internal vertical distribution and load-bearing walls defines the fixed elements of the building structure, while standardized service elements could be arranged within the new layout to obtain the single units. Apart from the private apartments, kitchens, child-care rooms, other common rooms are placed in the lower floors. With this intervention, the main courtyard – recalling the same of the *familistère* of Guise – accessed by the main street through a large gate, assumes both a public character and also a domestic use when it is populated by its dwellers.

19 The IACP (Istituto Autonomo Case Popolari, Trans. Autonomous Institute of Social Housing) is an Italian public agency founded in 1903 for the construction of economic and social housing

20 For a detailed comprehension on the history of Bari's social housing see: Martinelli, *Per un atlante della città pubblica di Bari*, 2009

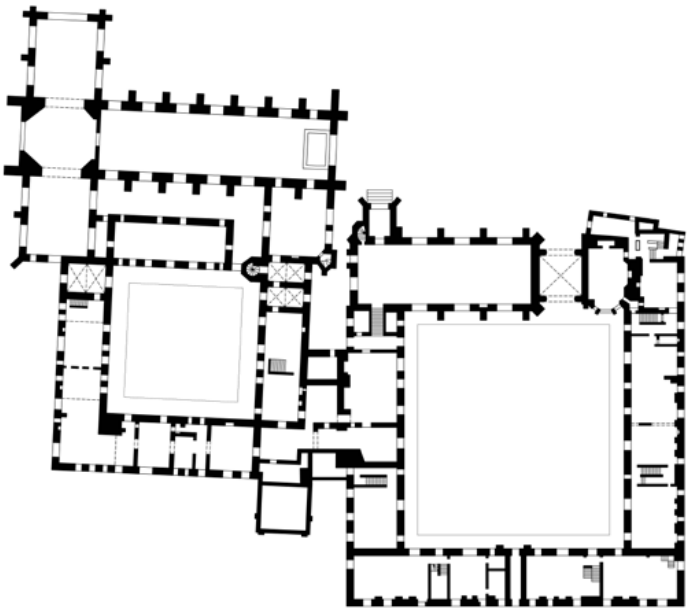
Readapting the urban scale of the 'Dom-Kommuna'

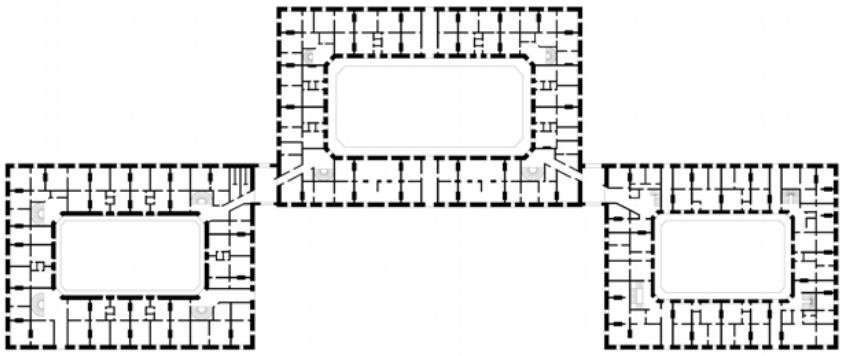
In the period successive to the WWII, in Italy, as well in Bari, the intervention of social housing assumed a large scale within the "economic boom" of the 50s-60s and an intense edification activity. It is this context that must be understood the urban scale and high density of interventions like the one of the Japigia district in the south-east area of Bari built during the 60s. Unlike the previous cases, strongly integrated within the urban form of the city, these *redents*-like structures, can be interpreted as small islands, as an archipelago of large-scale linear elements within the open (un-built) nature. In fact, their presence declares a more fragmented shape from the solid morpheme of Bari, confined by the so-called lama Valenzano – a green natural wedge – and the coast line. Apart from this picturesque condition, the disproportional shape of a collective of isolated family dwellers, have, of course, contributed to a social and spatial deterioration. The intervention in this case consists on the assumption of a specific, strategical form, the *redent*. Although these free linear existing blocks remind these typical *lecorbusierian* forms, in the project, the *redent* strategy becomes more explicit and declared. In the project, reminiscent of the super collectives of the soviet Dom-Kommunas of Sabsovich, the integration of an external loggia – which is definitely a parallel building – gives to the whole a more urban character. The loggia assumes the form of a city in miniature, it becomes a *rue intérieur* containing both a series of individual rooms for living and common facilities. Within this arrangement, the loggia-building can be considered both an extension of the existing apartments and a public place, an architectural element of the city. In this manner, the "typology" of the *posto-letto* can be hosted as a temporary solution for students and individual precarious workers within the city-loggia. Apart from having access from, almost, every single family-apartment, the mega-structure is articulated also through height differences, a regular rhythm of stairs and elevators and regular openings. A series of high-rise buildings signs the end of the system as a whole. If within the loggia, minimum-dwellings are placed casually-like within the passage, these high architectures, the towers, reassumes the strategical idea of new forms of collective dwelling as prototypal models of housing.

In this research work, the main intention is to transform the project of housing, in a strategy of *the city as a project.* A project able to subvert the housing condition, from its character of an amorphous *materia* of isolated individualities, to a spatial representation of the architectural object as an urban artefact. Recalling Toni Negri, the *multitude* of workers, cognitive, white-collars and everyone else involved on production, can assume its own biopolotic place within the common-house; a place of different rhythms, spatial episodes and collective events. The contemporary condition of the isolated worker helps to rethink the house both as a shelter and something to *use*, and also as a project of political and cultural emancipation, *within* and *against* the capitalistic mechanism of exploitation. In my research, I can conclude that, as we make an overview to the history of dwellings, there is still the possibility to reinterpret the house as a place freed from domestic labor, from the biopolitic apparatus of internment and from the barbarian status of the family[21].

21 On this passage see: Aureli, Tattara, "Barbarism Begins At Home: Notes on Housing", in *https://architecture.mit.edu/sites/architecture.mit.edu/files/attachments/lecture/Tattara_barbarism%20begins%20at%20home_pari.pdf*

Figure 1. Plan of Merton College, Oxford 1264-1661;
Plan of Le Familistère de Guise, 1859;
Plan of the students' Dom-Kommuna, Ivan Nikolaev, Moscow 1930.





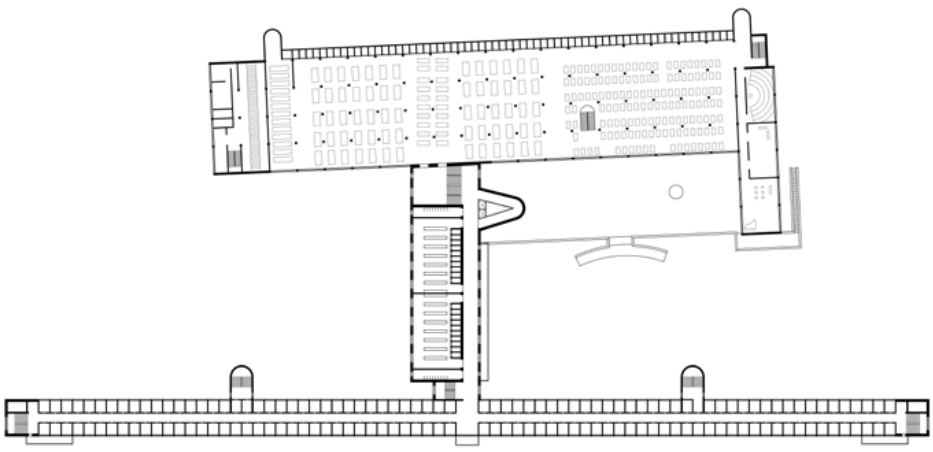
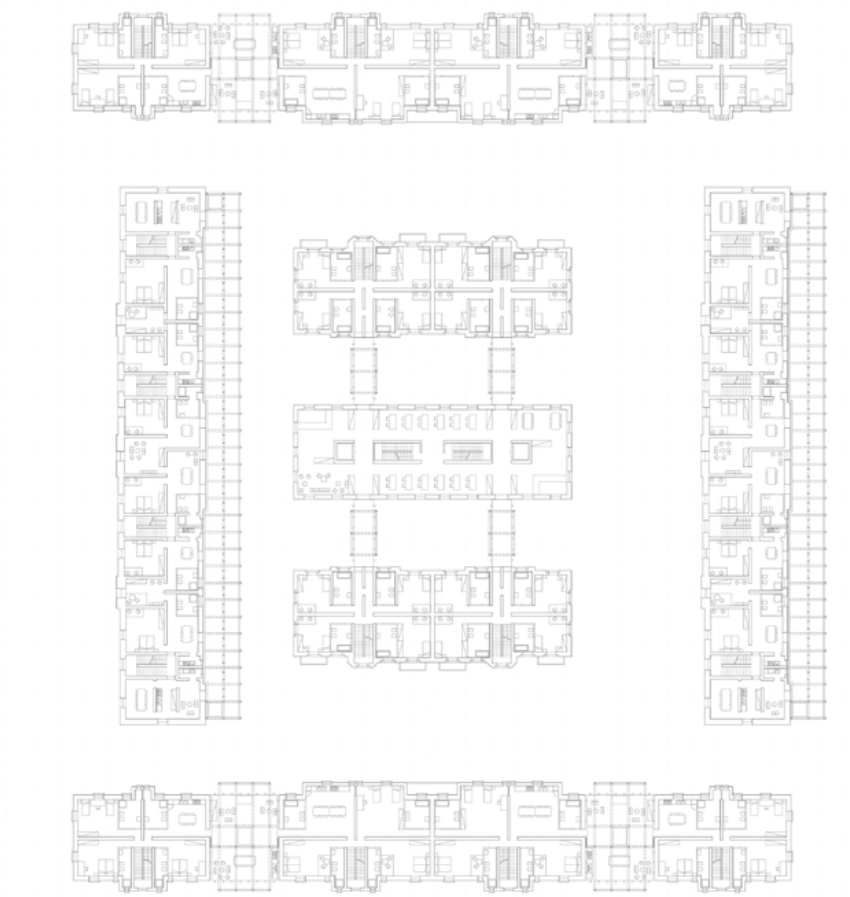


Figure 2.'Duca degli Abruzzi', A new 'machine' for living and working together, typical plan;
Via Dei Mille, Revisiting the architecture of the 'familistère', typical plan.



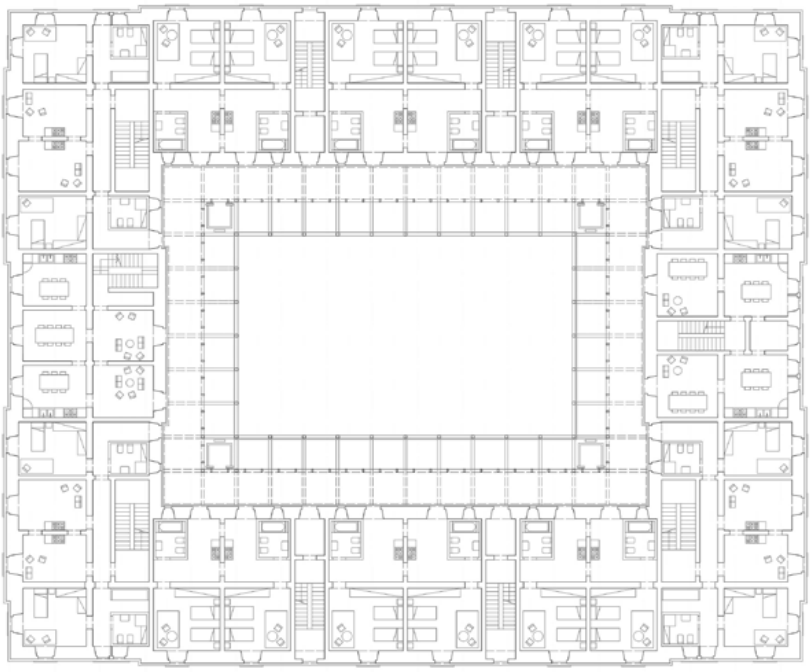


Figure 3. ARCA Puglia Centrale housing blocks on the south-east area of Bari; A home for everyone: Colombarium of Posti-Letto.

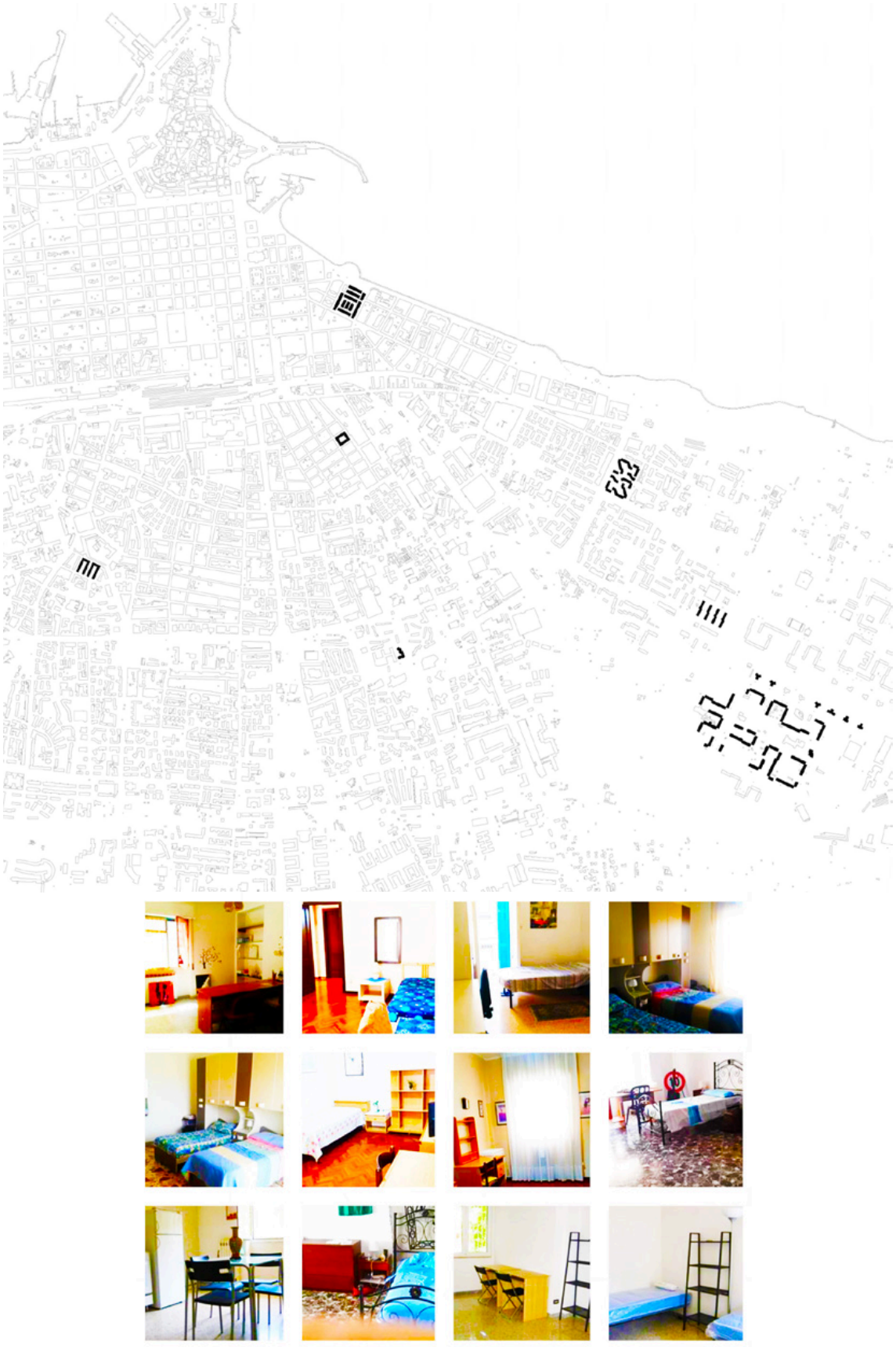
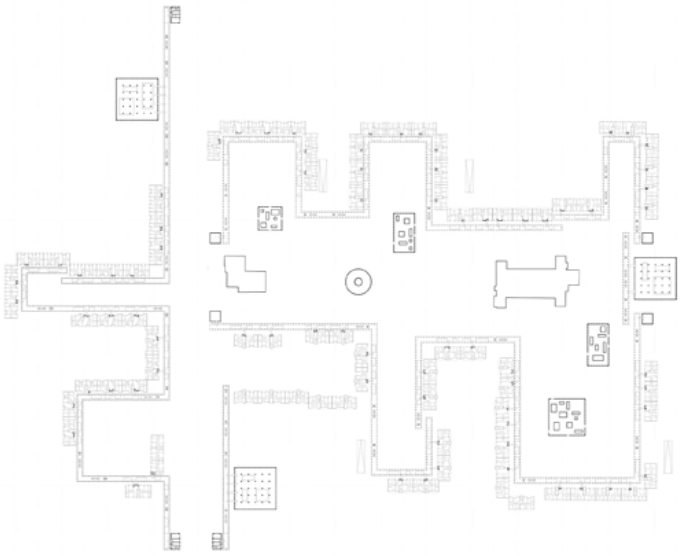
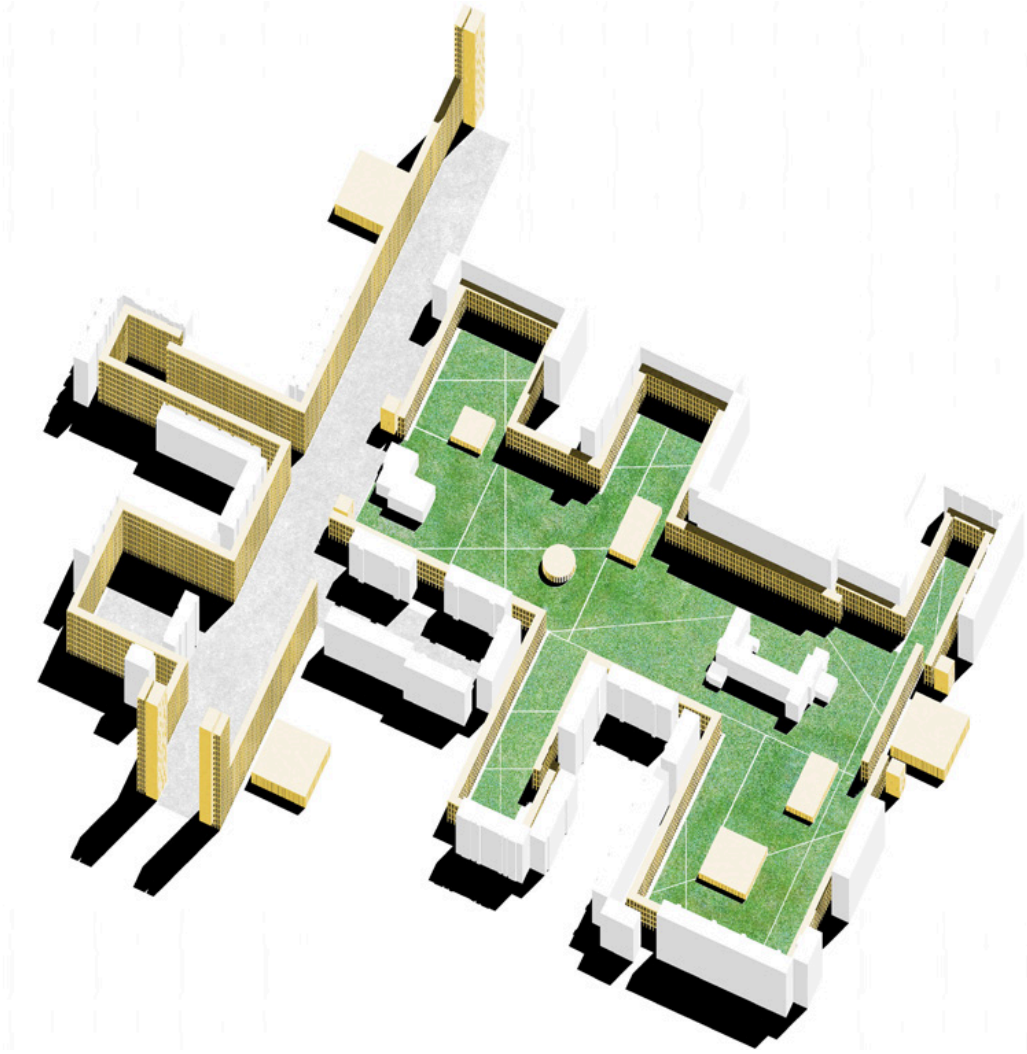


Figure 4. Japigia, Readapting the urban scale of the 'Dom-Kommuna', Typical Plan; Japigia, Axonometry of the 'redent'.





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The places of archeology in the city. Projects for the Imperial Fora

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In our cities, the European and Italian ones especially, we recognize a complexity and a morphological and spatial richness that is the result of long and continuous additions and stratifications, as a text not simply expanded but also and above all rewritten in time.

The archaeological traces in these cities reach us in the form of a "fragment". Excavations often represent real "wounds" (Ricci, 2006) within the continuity of the urban fabric, i.e. morphological interruptions within the city. It is necessary to define a method for the contemporary architecture project that considers the ruins in these places as a value and not as a limit.

To do this it is necessary the deep study of modern and contemporary exempla of projects in order to define paradigms of intervention. In this case, the analysis concerns the Piranesi Award of 2016. This contribute is about the proposals of the groups composed by Linazasoro & Sánchez with B. Messina and E.Fidone, that of Iñiguez & Ustarroz with M. Iñiguez Villanueva and lastly the winning project of 2TR with L. Franciosini.

Among the presented at the call proposals, these 3 were selected because of their common and clear goal, pursued by different methods and design techniques. The aim of the 3 projects is the Reconstruction of the Spatiality of the Ancient Imperial Fora. They want to recall or reconstruct the ancient form and through a courageous act establish a new Order within this very complex and stratified place.

Introduction

The cities we inhabit, especially the European and Italian ones, through their form have expressed as a value the idea of 'duration'. In fact, we make out a complexity and a morphological and spatial richness that can be traced back to their constitution as the result of long and continuous additions and stratifications, we can say as a text not simply expanded but also and above all rewritten in time. This complex order of relationships has certainly changed the image of our cities over time, as each of their parts has affirmed each time the aesthetic and formal values typical of the time that has determined them, but at the same time has also allowed the custody of the sense of ancient founding acts.

In particular, within our cities, the archaeological traces come to us today in the form of real "wounds", as defined by the archaeologist Andreina Ricci, i.e. as caesuras that interrupt the continuity of the urban fabric. The rules and the alignments of the ancient and contemporary city are different and this often produces the loss of sense of these places, both the ancient and the new. The question of the enhancement of the archaeological heritage within the urban context is too often reduced to "technological" solutions and to the isolation of the remains inside enclosures that, besides being physicists, could be defined as real "memory" enclosures (A. Ricci, 2006). Paradoxically, the places of archeology in our cities often coincide with places of neglect and poor urban quality.

At this condition of crisis, the architectural discipline can oppose the definition of a thought capable of curing and revitalizing the archaeological heritage, looking at the stratification in the places of archeology within the city not as a limit for the contemporary project of architecture but as wealth and added value. For this reason, the present contribution looks at the extraordinary and fragile archaeological heritage of the Italian cities through the possibilities offered by the architectural project, intended as a tool able to establish a new Order among the urban parts, composing the New with the Ancient.

Spatiality of the Ancient Forums

The way to construct the open and public space of the city as an inner space, which will be developed over the history up to modernity, is realized in accomplished forms in the Roman city. In the Imperial Forums it is possible to recognize the principles of urban composition and more specifically the composition of the monumental spaces of the city that generate a space that can be defined as an inner area. At the urban scale the first principle of construction of the Roman city is the concatenation of multiple urban interiors each with its own identity. These, though endowed with its own finiteness, express an aspiration to the general system. The urban interiors of the Roman city relate to each other following a syntactic, paratactic, of conjunction, or if they are hierarchically equivalent, of juxtaposition rule. In the Forum of Pompei, for instance, the relationships that are established between the different spaces are paratactic: around the central Forum, hierarchically more important, the other spaces are almost coagulated. In Rome, the principle of the delimitation of open space is declined in the central archaeological area through two different ways. In the Imperial Forums the delimitation of the space starts through the definition of enclosures or porticoes that separate the internal space from the external one and almost exclusively directs it towards the sky. The continuous delimitation expresses the idea of the fixity of these spaces. In the Roman Forum the compositional principles are different. In this case the founding principle is that of the arrangement of distinct elements around a space which is no longer the strict separation of an interior from an exterior but which can be described as a compression of an external space. The idea of space in the Roman Forum is that of crossing, almost the opposite of the fixedness of the enclosure. This difference in the way of defining open space translates into a different sense attributed to the threshold.

In the Imperial Forums the thresholds are defined as portals subtracted from the wall surface like a break that preserves the memory of a compact surface, sometimes showing its section.

In the Roman Forum the delimitation of the spaces is constitutively discontinuous and the threshold is configured as an interval between distinct elements that maintains the original

continuity between the external and the internal space.

The idea of urban space translated into forms in the Imperial Forums finds a new expression in the projects examined in this contribution. They translate the archetype of the Forum space in contemporary design proposals that take on the design problems and contradictions of the contemporary city.

Reconstructing the Spatiality of the Imperial Forums

In order to contribute in the important debate about the relation between the new and the ancient in architecture, it is necessary to carefully study and critically analyze project experiences considered significant in this sense, in order to identify methods of intervention that, while referring to specific cases, can lead us back to general principles. Experiences that consider the historical stratification not only as an archaeological value but above all as an urban value.

In this contribution, the analysis concerns two projects presented at the International Call for Design for the redesign of Via dei Fori Imperiali in Rome, promoted and organized by the Adrianea Academy of Architecture and Archeology, in collaboration with the Order of Architects, Planners, Landscapers and Conservatories of Rome in 2016. This competition experience has represented in the past and represents nowadays an opportunity for the important debate regarding the theme of the relationship between New and Ancient in architecture, Ancient in its specific form of Archaeological Ruin. Moreover, competition experiences are the best moment for the design experimentation and in this case particularly interesting because the Call involves academics and professional firms. The methods of participation at the Call, based on the high level required for the formation of groups, organized according to a pair of coordinators, one from the academy and the other from the professional sector, represent an important experiment conducted on the comparison between different knowledge that has induced the participants to harmonize often dissimilar approaches and points of view. This contribute is about the proposals of the groups composed by Josè Ignacio Linazasoro & Ricardo Sánchez with Bruno Messina and Emanuele Fidone and that of Iñiguez & Ustarroz with Manuel Iñiguez Villanueva. Among the eighteen submitted proposals, the two examined are similar for the same purpose, pursued with different methods and design techniques. The aim of the two projects is the Reconstruction of the Spatiality of the Ancient Imperial Forums. They consider the ruin as an "incomplete" architecture, that has lost its capability to express by its form the character of a space. The new project takes value from the

ancient and helps the ancient to recall its previous value. The analyzed projects aim to recall or to reconstruct the ancient form and through a courageous act establish a new Order within this very complex and stratified place.

The "episodic" Archeology of the Imperial age

Talking about the compositional aspect, the Forums are a concatenation of fences built on a natural or artificial topography, as in the case of the Trajan's Forum in which the excavation and the difference in height was later filled through the construction of the Trajan's Markets on several levels.

Nowadays, from the existing streets, the vision of the archaeological remains does not correspond to the form of the ancient city. Archaeological spaces at the lower level are visible only for irregular fragments.

In particular, the axis of Via dei Fori Imperiali, going up one kilometer from Palazzo Venezia to the Colosseum, with an average section of about thirty meters, cuts across the Fora, making the compositional scheme difficult to read.

Moreover, the Via Alessandrina obstacles the understanding of the area of the Imperial Fora. The street, recently reopened to the public, is the only surviving witness of the extended neighborhood that, starting from the 16th century, was built in the area of the Fori Imperiali, and was then completely destroyed in the thirties for the opening of Via dei Fori Imperiali.

Furthermore there are many "empirical" and recurring categories and design problems when planning in the places of archeology within the urban fabric.

The analyzed projects assume the condition of the contemporary city and its problems:

the fact that the new city and the ancient one follow different rules and allignments;

the connection between quotas: the contemporary city and archaeological one, which have different morphology, differ at least five meters;

the transversal link in the east-west direction is basically not-existent because the excavations represent chasms that make it difficult or even impossible to cross the area in this direction; the fruition of the archaeological space is discontinuous and interrupted by the foundations of the Via dei Fori Imperiali axis;

even from the space for tourists, hybrid between street, square and park, the underlying structure of the Fori is not at all readable.

Linazasoro & Sanchez + Academy of Architecture in Syracuse
Delimiting the ancient voids

The first project is that of the architects Linazasoro & Sanchez with Bruno Messina and Emanuele Fidone from the Academy of Architecture in Syracuse. The intervention consists of a large roof that builds a network of paths at the quote of the contemporary city that allows the connection in all directions. The new routes do not resume via dei Fori Imperiali or via Alessandrina but run on the spaces of the ancient porticos. They visually define the ancient voids.

The void and the full, their relationships and proportions in plan coincide with the ancient ones. The void is obtained extruding the section of the new roads following the measures and the directions of the ancient porticoes. In the new project the porticoes of the Roman squares are not reconstructed but their spatial condition is recalled. Walking under the new paths makes the experience of being under the imperial porticoes "resound".

Obviously the operation is not mechanical, for example in the Forum of Peace the procedure is different. This point is topologically different. The Forum of Peace, today only partially excavated, is indeed unique compared to the others Imperial Forums for its proportions and due to the fact that it represents a nodal point for the contemporary city in which the Via dei Fori system, via del Colosseo and Corso Cavour meet. Here, the need to link two quotas is translated into architecture. The architects place into this point the access to the archaeological complex through a staircase that leads to a hypostyle, a large covered square, which constitutes the entrance to the system.

Another project technique used to recall the enclosures and the ancient spatiality is, where possible, the anastylosis of the columns. The recomposed columns delimit the void by identifying the measure and returning the monumentality of the ancient Forums.

The value of the construction
Building "on the ruin"

The construction evokes a sense of monumentality and "Romanity". The new paths are sustained by a system of straight beams and pillars that stay directly on the bases of the ancient columns. Although this portal is physically composed by multiple elements, it seems almost a monolithic, unitary, not-tectonic construction that somehow recalls the characters of the Roman construction.

The pillars, as said, rest physically on the foundations of the ancient columns, already designed to hold heavy weights. However, the supports are reduced to the minimum number: they are placed at intervals of great distances. The portal also supports a wooden walkway at the level of the remains that allows the visit and still marks the formerly covered space. The cover turns to create the seat through its profile. Thus, with a single act of architectural composition, the problems of the crossing, understanding and reaching the remains are solved.

Ustarroz & Iniguez + E.T.S. de Arquitectura de San Sebastiàn
Reconstructing the vacuum limit

The last analyzed project proposal is that of the group composed by the spanish architects Ustarroz & Iniguez and the E.T.S. de Arquitectura de San Sebastiàn.

After a planned excavation activity, they make a compositional act farther from the previous ones. Starting from the purpose of reconstructing the spatiality of the Forums, they define in a categorical and peremptory way a path in the north-south direction that turns around on the Forum of Peace. The new road follows the direction of the of the porticos of Trajan's, Caesar's and Augustus' forums, thus avoiding any distortion or confusion on the general plan of the ancient squares. It is placed at the quote of the contemporary city.

In this case, the Spatiality of the Fora is reconstructed through the compositional operation of fencing the ancient voids through the extrusion of the columns up to the height corresponding to the first order and the walls that marked the limit of the ancient squares until the height of the new road. The columns that project their shadows on the walls make the light vibrate and give them a rhythm. In this case, the void is prevalent, and the archaeological level is prevalent on the surface of the contemporary city above it.

The value of the project is the definition of the limits, of the thresholds that remarks all the character of the ancient Fora's internity.

The techniques used are a combination of excavation, anastylosis, and reconstruction of columns and partition walls between the voids. The elements of the project are clear and defined: columns, walls and light.

The value of the construction
Seriality and lightness

The new path reunites, establishes the order, concatenates the fences. It is a light road supported by a serial system of metal pillars the which step follows that of the columns: for the ancient porticoes each pillar stays between two columns; in the north-south direction the dimension of the ancient basins of the Forum of the Peace establish the rhythm of the pillars. The design for this street aims to the lightness of its steel structure and to the complete transparency of this stretch of Via dei Fori Imperiali in order to create an effect of air suspension. The techniques for the definition of the limits are the anastylosis, restoration and reconstruction proposed for the walls and porticoes in the Forum of Trajan, Caesar, Augustus, Nerva and Peace. Both the arcades, the Romans and the steel new ones, overlap and establish an alternate rhythm and a comparison of scales between them: a Roman monumental order of marble and a second minor order of grey steel that runs between colonnade and the closing brick walls, on which its shadows can be seen. The section of the walkway has a central part or pavement of vehicles six meters wide, armed by crossed beams.

Conclusion

Overlooking the complex and millennial history that obviously is useful to the knowledge and understanding of this place, which has seen successive uses in different times translated into different forms, the analyzed projects start from the clear aim to rebuild or recall the structure of the ancient voids. They do it obviously through different methods and design techniques.

The two proposals are similar for the way to consider the Ruin: as an object capable of evoking the past but also of waiting for the future. The architectural project consists in the two cases in an act of courage capable of establishing Order within the stratified reality of this place.

The Call asks an approach for large projects, or system projects, because it is believed that it was precisely the lack of a unified vision and of design courage to generate the stalemate and stagnation of the area.

Not only one category or one discipline can claim to have the solution in a self-referential way. The complexity of the theme requires above all new forms of sharing and organic coordination between the different actors. For instance, the architect in each of the analyzed

proposals has a fundamental role since the planning of the excavation.

Nowadays acting in these places requires a theory for the contemporary project and the study of exemplary projects can contribute to the identification of paradigmatic cases and intervention principles useful to build it.

It is also necessary to have interpretive courage, alongside methodological rigor, not limiting itself where necessary to the excavation phase and analysis, but returning an architectural and urban meaning to the whole. Ancient Rome is a new construction: there is no single monument that has remained the same in time from antiquity until today.

Figure 1. Constructive system of the two proposals.

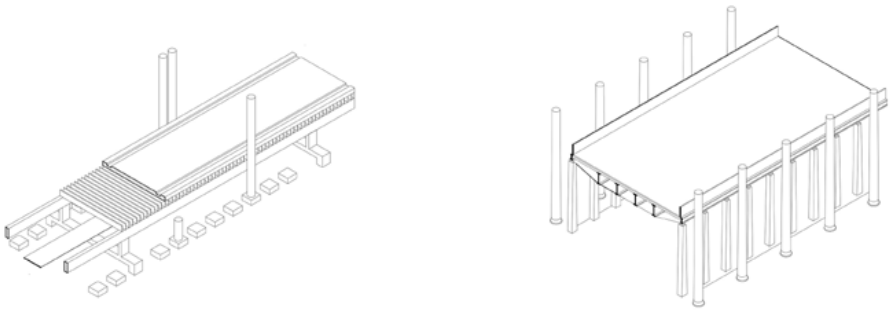

Figure 2. Existing site plan.

Figure 3. Iñiguez&Ustarroz with Manuel Iñiguez Villanueva Proposal.

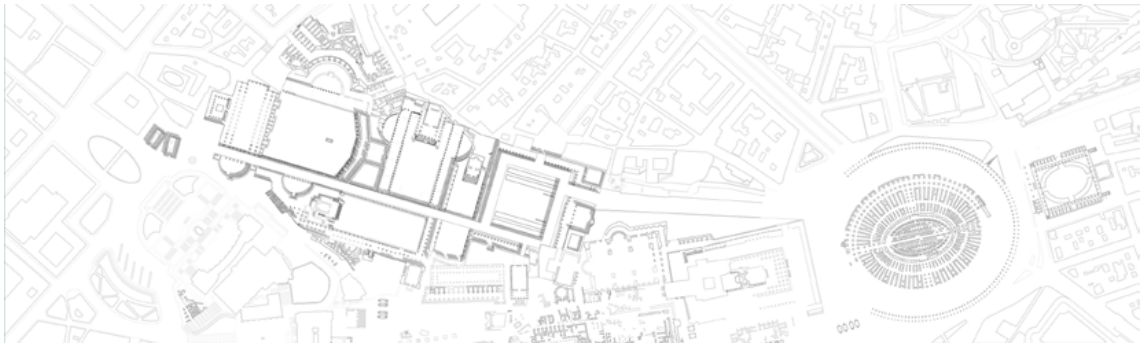

Figure 4. *Linazasoro&Sánchez with Bruno Messina and Emanuele Fidone Proposal.*

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The opportunity of the dismantled. An Eduardo Souto de Moura's projects for a former factory in Portalegre

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Looking at the contemporary word through "the slight obsession of architecture", the end of the last century appears to be characterized by a radical "movement of retraction" of the human activity from many of the places that have been remarking its presence for years.

At the time of the loss of their function the industrial, residential, workers and lordly sites, the railway terminals, the unbuilt areas have been involved in a progressive process of decommissioning, in many cases accomplished by the abandonment of entire parts of man-made territories and with the opening of large urban voids. The urban landscape changes its nature, it shatters. Plans and ideas of cities, urban morphologies, building types, activities and social groups first compared are suddenly disconnected, others first separated are now led to communicate.

Thus the void becomes an architectural theme, which cannot be conceptually reduced to ordinary solutions: to empty, to preserve, to restructure, to reuse. The difficulties do not lie in the identification of proportionate functions, but in the interpretation of its intrinsic potentialities bound to the project of redefinition of the urban form.

The project of requalification of the former Robinson cork factory in Portalegre, Portugal, by Eduardo Souto de Moura and Graça Correira, owns the objective of maintaining and recovering the historical heritage of the site, but through the attempt to establish a connection between the pre-existing industrial enclosure and the consolidated urban context.

The architects recur to a model of occupation of the space that aims to settle a continuity capable of giving a renewed sense to the urban morphology, attenuating and reversing the disordered growth of the city that extends around it..

Introduction

"For those who have the custom of observing the world through the slight obsession of architecture, the end of the century appears to be followed by a movement of retraction of human activity from many of the artifacts that have marked its presence for decades". These words, put down by the Italian architect Vittorio Gregorri in the prologue of the number 42 of his magazine, Rassegna, have the proper strength to frame the most current problem of the contemporary architecture. At the time of the loss of their primary and original function and utility, the residential and industrial areas, the noble or the worker neighborhood, the railway station or the railway depot, the fields destined for agriculture or farming needed and uses were involved in a process of disposal, most of the time accomplished with their permanent abandonment. The large metropolitan area, such as the small cities and any urban condition morphologically defined has become the real place in which the opening of large built and constructed voids interrupts the compact development of the man - made landscape and territories.
The relevance of the described phenomenon has to be firstly related to the choices of the re - location of the human activities mentioned above, rarely destined to those areas invested by the disposal processes.

The contemporary city, in fact, has grown progressively beyond its own limits without an order a priori defined, losing a large part of the characters that have determined its physiognomy throughout the history.

It is thus evident as the city has changed its intimate nature. Urban ideas, drawings and plans, morphologies, building types and factories, social conditions once compared are suddenly disconnected, such as others once separated are nowadays led to find an inedited reason of connection.

The contemporary architecture has to find its unifying theme in the renewed interest for those no - spaces, re - discovering in their apparent weakness and futility what has been named as a new state of necessity, the possible meanings for restructuring and redefining important parts of the city of our century.

Defining an architectural project that involves the theme of regeneration, with the power of a cultural and educational operation, is the most effective answer to the needs of the current historical context, in which architects are called to re - plan the construction, the built voids, rather than designing the new, the un - built spaces.

The voids, if intended as equipped with this potentiality, can become an historical opportunity for the positive transformation of the urban post - war morphology, an opportunity that does not have many other chances of recurring and that, therefore, has to be seen as the rare solution to the precarious stability of the European contemporary city, in terms of physical development and expansion. A no – space must nourish an idea of the architectural project that can not be reduced to conceptually simple solutions, such as empty, demolish, preserve, maintain, restructure, reuse and can not refer to historical surrealism that retains anxiously traces, heights and typologies not to break historical and fragile balances.
Starting from a renewed dialogue with the context and through the instrument of the architectural project the value of the existing can be redeemed.

Methodology

The case of an Eduardo Souto de Moura's project for a former factory in Portalegre, Portugal, appears as exemplary to place the issue of urban regeneration and requalification with deep interest. With this specific project, dated 2011, the Portuguese architect, supported by his compatriot collegue Graça Correia, has shown the proper design and architectural thinking, sensitivity, imagination and culture to start from an objective and negative *datum* in order to find the necessary dynamic equilibrium between memory and invention, such as the one widely discussed by E. N. Rogers on the pages of 'Gli elementi del fenomeno architettonico (2012, Marinotti Editore, Milano)'. The proposed equilibrium is coherent with the idea of an urban development policy that does not longer consider the territorial expansion but, instead, the importance of the return to civil uses of the buildings or the sites that identify,

such as in the specific case of the former factory in Portalegre, entire disused parts of the city, through a regeneration and requalification not only thought in formal and functional terms but, especially, in terms of re - invention of the value and the sense of existing architectural contexts.

Forming process

Portalegre, a city that laboriously reaches twentyfive thousand inhabitants, is located on the edge of the Natural Park of Serra de São Mamede, in Alto Alentejo, a Portuguese region a few kilometers far from the eastern border of Spain. The peculiar geographic location has to be mantioned, since it has played a decisive role in the process of the evolution of the city's histroy, for a long time disputed between the two nations, Portugal and Spain, and its physical and territorial development.
In fact, since the eighteenth century, thank to the favourable location the city has hosted thriving industrial complexes, including those of the Robinson Cork Factory, the most important economic sourse of Portalegre until the time of its disposal.

The dispalcement and the relocation of the producation activities beyond the walls of the city and the consequent abandonment of the site generated a vastly extendend urban void, complemented by a significant built industrial heritage. Beyond the considerable dimension, what is remarkable about the productive site is its own position within the urban context. Located on the edge of the city's most compact historical center, the mentioned site could have played a significant role for the growth of the Portuguese center but the fence in which has been contained has ruled it out the surronding urban context and has produced a clear interruption of its progressive development, as well as a violent separation between the consolidated part of the city and the area of more recent expansion, the contemporary suburbs. The factory has not left any kind of possibilities for a mutual morphological comunication and integration.

The Eduardo Souto de Moura and Graça Correia's project, which considers the whole extansion of the area, close to sixty thousend square meteres, has gradually regenerated the former industrial site transforming it into an artistic and educational campus, defining a program of redevelopment of the obsolete and dismantled citadel. The program ifself does not recognize the main difficulties in finding lasting functions, proportionated to the dimension and the variety of the available spaces, but in grasping their intrinsic potentialities in an attempt to redefinition of the morphology of this part of the city. Thus the architectural project proposal allows the suburbs to rediscover an historical connection with the center of the city and only consequently introduce a program to recovering the significant and remarkable industrial heritage, and therefore the historical identity of the place, proposing positive functions.

In fact the approach to the regeneration and requalification of the former Robinson Cork Factory is based on the creation of renewed relationship between its buildings, safeguarded as specified when required, and those of the city, as a strategy that has necessarily to precede the establishment of new uses in the recovered architectures. The aim is therefore to establish a permeable connection with the surronding area and the original chacacter of the places of Portalegre, which gives to the industrial site a contemporary urban meaning firstly through a redefinition of the overall internal logic. This logic depends on a project of a few proposed demolition and new construction, that allows to define transparencies which, if already existing, are currently not valorized or even hidden.
This kind of plan for the requalifiction of the former Robinson Cork Factory defines the strategy described through the clear definition of a new axis of transition, an urban and archeological walk that, with the thought introduction of urban elements, such as squares, paved paths and functional facilities, allows a new articulation of the industrial buildings belonging to the former site in relationship with the surroding pre - existing urban buildings and, in the same way, with the few new constructions mentioned above.
This choice establishes a model of occupation of space that guarantees the survival of the original settlment system and a renewed connection of the same system with the urban existing context. It is precisely the proportions and the location of the two new buildings

that, in addition to defining a relationship of geometric tension with the existing industrial buildings, will contribute to delineate the space and define the limits of this crucial urban walk. The strategic position of the first outcome of the project, a two - faced building, low rise and with elongated proportions, that hosts the Hotel and the Catering School, a container of different cultural activities and intellectual production, more than its compositional grammar, appears as essential for the spacial definition of the mentioned urban walk and contributes decisively to establish the axis as the structuring element of the new urban form and morphology. It is not accident that this building defines the most clear emergency of the entire project, giving an urban and human scale to a metropolitan void. Through the building of the school the two Portuguese architects try and achieve to establish the first episode of a wider program of redevelopment of this messy portion of the suburb of Portalegre.
On the southern side the structure hangs on the landscape thanks to the robust topografy, resting on the summit of the existing natural slope. Right here, its façade expresses the stylistic and architectural code that even the new residential buildings, never built on the southern edge of the site, would have been assumed. Thin septas connect, with a regular rhythm, the covering pan to the ground cantilever one.

Differently on the north side, in front of the first paved paths, the new building of the School, as said essential in the form and the grammar of its composition, is characterized by a closed façade, interruped only by the element of the wide entrance, recessed within the line of the same façade.

The formal value of this architectual episode thought by the two Portuguese architects is exhaustively expressed by the words of Francesco Dal Co, Italian historian of Architecture, who, at the moment of the writing of an article on the number 798 of the magazine Casabella, in 2011, comments the project usign the following words: "[...] the diagrammatic static conception made evident by this projection, the dry language that comments and the separation generated by the shadows that separate the volume from the ground, make the compositional strategy adopted on this occasion by the two architects similar to the one already experimented by Eduardo Souto de Moura in various other circumstances, among which it is appropriate to remember the Municipal Market of Braga, that he completed in 2001. The internal order confirms that the school constitutes a mature review of the experiences already accomplished by Eduardo Souto de Moura, where the partially suspended partitions that devide longitudinally the environment plays a major role, as it happened, for example, in the art gallery that the architect from Porto settled in his hometown [...]".

Facing the new building of the School, raised on thin steel pillars, the Souto de Moura and Correira has thought and designed a futuristic Auditorium, whose ambiguous grammar and architectural language, made evident by the bodywork in which it is contained and from which a tangle of pipes comes out, induces to re - consider the value of the ruins of the site, which bear witness to its original industrial vocation. The attempt widely achieved is to make evident the contrast between the cold, mettalic and obsolete character of the Auditorium with the tense and blind nature of the close building of the Hotel and the Catering School. The axis and the squares mentioned above are thus determined by two wings that recall the dissonant and antithetical character of what remains of the abandoned industrial citadel. In fact, the industrial site is shaped by buildings of different nature, most of which are compromised by the action of time and have no particular spatial values, but made undoubtedly noble by the history that manage to pass on. From this rich industrial heritage, the two Portuguese architects have selected certain buildings and wrecks of abandoned machines, treating them as expressive ruins and ensuring them the necessary symbol to make this place a magnificent open - air museum of itself.

What is recovered from the past collaborates with the new buildings to mark the walk that has returned an area largely extended to the city, allowing it to contribute to the modification of its morphology and opening up new and positive scenarios related to the possibilities of its expansion. The extraordinary succession of the layers of the old factory is brought to a constant comparison with architectures belonging to the nearest contemporaneity and has made it possible to make it part of the urban structure and, therefore, to attribute entirely new functional meanings.
For the industrial buildings maintained and recovered, the project foreeses an high

mix of compatible functions, the experimentation of a functional mixité destining them to polycultural and intellectual production activities. The forms of the buildings, their structures and their identity values represent an unique opportunity to imagine new possible configurations. Rehabilitating them for new functions, the two architects are able to demonstrate a prudent balance and cautious sobriety. Souto de Moura and Correia do not intervene on the external and visible grammar of the buildings, with the precise objective of safeguarding the historical identity of the place and of the elements of the material culture belonging to it and, eventually, respecting the symbolic value that over the time the citizens of Portalegre had attributed to the place itself. Imagining new functiuons and uses for the buildings involved in the wider redevelopment program of the area, necessary to reinsert them in the urban scene, led the two architects in front of the need to reflect on the always complicated relationship between memory and invention.
The reflections have been focused in particular on the need to identify a coherent intervention strategy, which seems to have led to the recognition of those formal and constitutive aspects of the existing buildings and, with them, of their 'necessary form', as widely argued by Carlos Martì Aris, on which the new cycles of life will be imaged. The possibility of conceiving a continuous modification of these buildings and a new cycle of life has been subordinated to the identification and consequent respect of an irreducible nucleus, constituted by the character of its physical and morphological structure. In the process of identification of the necessary form the notion of the architectural type seems to take on a renewed importance, which, as it has been handed down by C. M. Aris, is "defined [...] by the presence of a formal invariant that manifests itself in different examples and is located at the level of the deep structure of the form [...] "and is" [...] the expression of something general and permanent and yet capable of fertilizing the particular manifestations of architecture [...] ". In the principle of the 'necessary form', which refers to the architectural type, Eduardo Souto de Moura and Graça Correia are able to identify the intervention strategy on which to develop all the design hypotheses that, between memory and invention, two no longer antagonistic forces, have allowed to make the buildings of the former Robinson Cork Factory functional to new needs and necessities. Their interventions of modification redefine the general spatial qualities of the buildings by varying the succession of their internal spaces. Through the demolition of certain part of the curtain walls for the creation of wider open spaces, the implementation of new subsequent plans and the insertion of new geometric volumes that defines spaces on a smaller and human scale, the two architects have been able to regenerate the life of anonymous buildings, of which, in any case, the archaic identity is still strongly recognizable, allowing them to communicate with new architectures equipped of a contemporary expressiveness.
The recovered buildings contribute together with the new episodic structures to define and configure a new urban set, able to connect two sides of Portalegre, but also to regenerate a landscape canceled by the history of the Portuguese city, now able to help to point out new perspectives and scenarios for its development and expansion.
The recovery project thus conceived manages to avoid, at the same time, the risk of trivializing the historical value of an architectural heritage and memory through a false decorative emphasis and of expropriating respect for the same values through excessively limiting conservative strategies.

Conclusion

The words of Francesco Dal Co re – emerged at the end of this contribution to comment the deepest value recognized in the project of the two Portuguese masters: "[...] in configuring this archaeological walk Souto de Mora and Correia have not given any space to a feeling of nostalgia, but have lent the maximum attention to the memory and the value of memories even closer, knowing that only projects capable of examining the past without regretting it are really modern, as the best architects have always known and as therefore also knew Lina Bo Bardi when between 1977 and 1986 built in São Paulo the SESC Fàbrica da Pompéia, the model of what Souto de Moura and Correia created in Portoalegre [...]".

Figure 1. Inquadramento area.

Figure 2. Progetto planimetria.

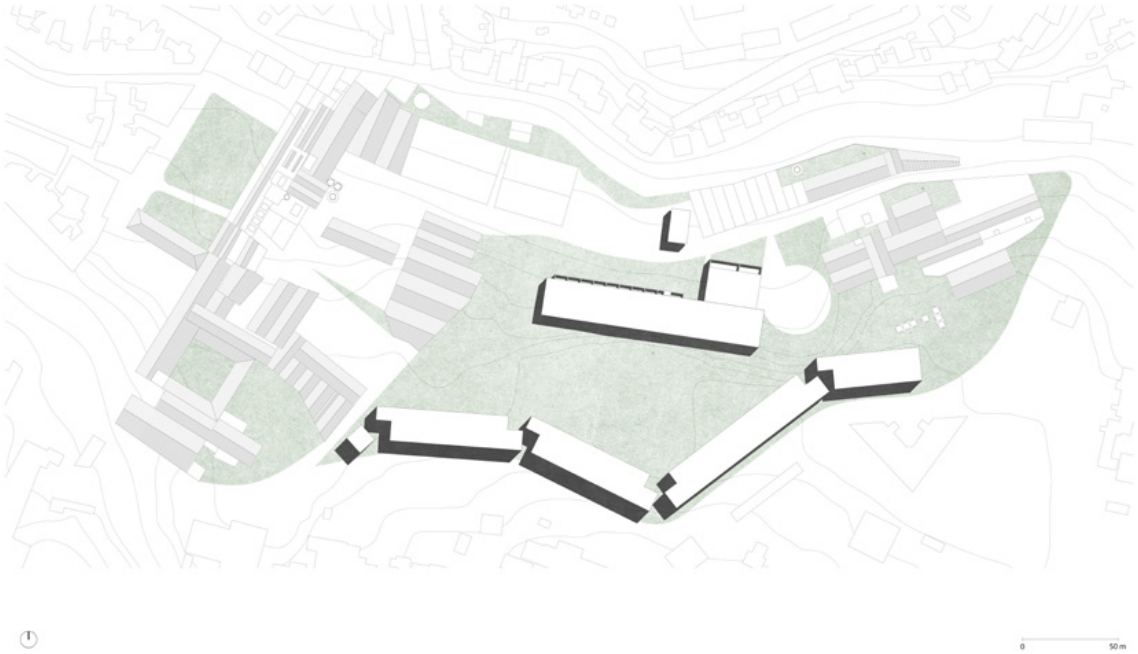


Figure 3. Progetto prospetto.

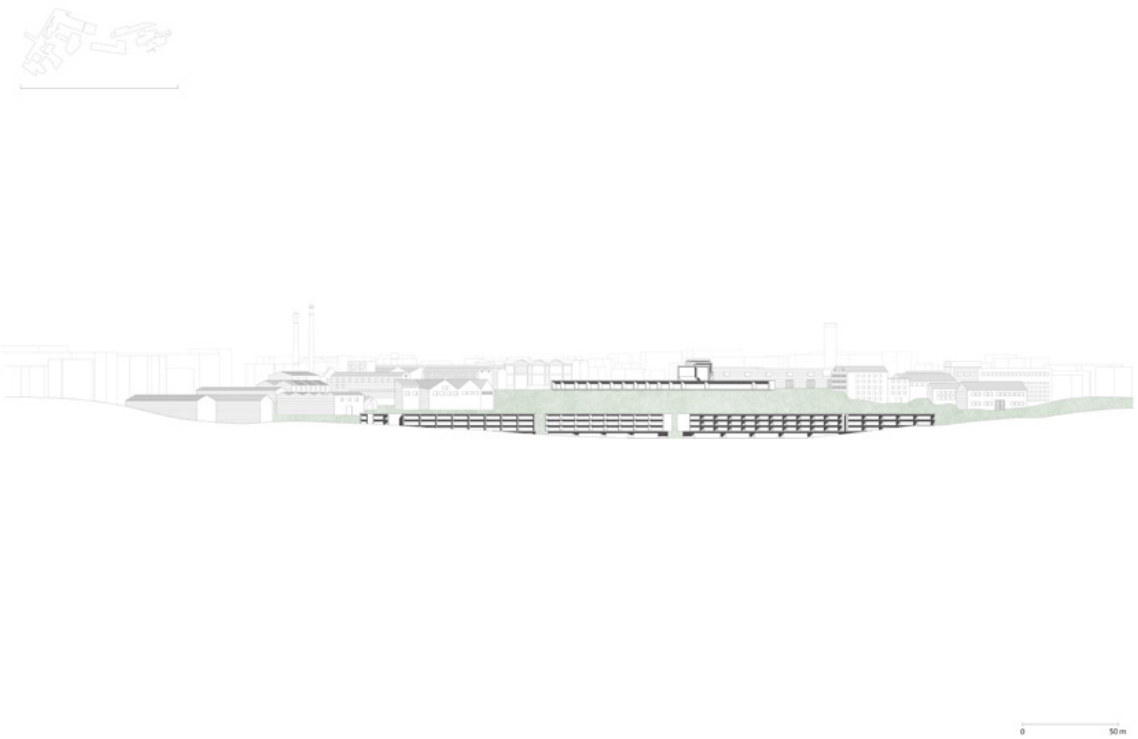
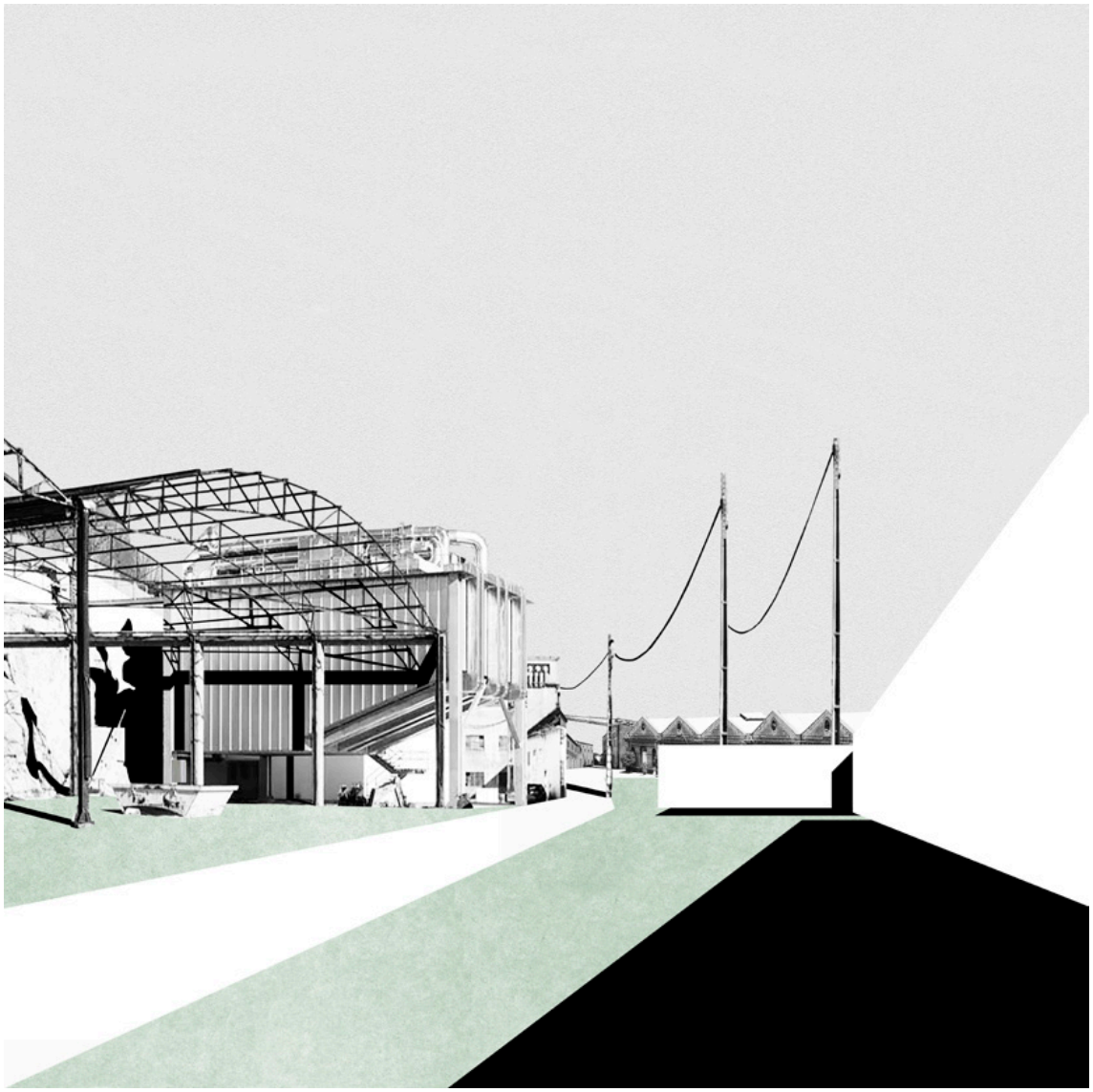


Figure 4. Progetto vista.



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A new School Complex in Inveruno Milan. Transformation of an industrial area

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Keywords: *Industrial area, Milan, Architecture, School buildings*

Inveruno is a small town in the Milan hinterland, located along the axis that connects Milan to Tu-rin. The town was developed around an industrial area in which there was an oil factory that is now completely dismissed and dismantled. Given the strategic importance and central location of the disused area, the administration formulates a hypothesis in which it can be converted and available for the construction of the new primary and middle school complex. The operation involves the ABC Department of the Milan Polytechnic and the numerous skills it can provide. The first goal concerning the urban structure is to redefine the open spaces that now result without hierarchy and identity. The public destination contributes to thinking about the new construction of the school complex and the open spaces that surround it as a new urban centrality. The project also assumes importance in experimentation on school buildings in relation to the new perspectives offered by the reform of the "buona scuola" reform in terms of innovation.

The project assumes the school complex as the starting point of an ideal axis that connects the green spaces of the town, along which lie the most important polarities of the urban structure.

"A factory for the future". Inveruno New School

School is a rather complex issue that involves a range of different disciplines – the technical disciplines of architectural, system and structural design, along with the disciplines of training that define the educational project, as well as the disciplines of sociology and urban studies. Given such complexity, the relationship among public institutions such as City, Province and Regional administrations and the seats of scientific research such as University Departments where the above-mentioned specific expertise is developed, becomes fundamental for an innovative school project.

Here, school is intended as a relational space open to the territory and designed to host public activities accessible to the entire urban community. The new school of Inveruno is, in this sense, the new civic center of the city, a representative building and a place of cultural integration. The school is designed to offer flexible and permeable spaces (sliding walls, movable furniture, glazed rooms, covered and open-air collective areas, etc.) where innovative education becomes the key principle to provide students with adequate skills. Therefore, the school offers in equal measure individual spaces for education and study, spaces for exploration where students may experiment and as a group practice the skills they have acquired (cross-disciplinary workshops), and group spaces where they may present and discuss the results of their work with the school and city community. Just as important are the open space between the buildings and the central square designed to host open-air events that involve the entire school community.

1. Urban context

Inveruno, a town with 8,600 residents, is part of the metropolitan city of Milan in the Lombardy region.

Its urban structure mainly resulted from the prevailing agricultural activity that experienced a renewed impulse after the opening of the Canale Villoresi in the second half of the nineteenth century.

The modification of the territory after the construction of the canal resulted in a new system of smaller canals and in the innovation of the agricultural activity and brought remarkable transformations in the history of the town. During the modern age, Inveruno owed its urban expansion to the creation of industrial activities such as the Muggiani textile mill, the Officine Elettriche Colombini and more recently the Belloli oil-mill.

The development of industrial activities resulted in a gradual decline of agriculture with remarkable consequences on the urban structure of Inveruno. Later on, the decommissioning of most industrial facilities has left several sites now requiring adequate redesign and redevelopment as they play a strategic role in the urban structure.

The urban fabric of Inveruno comprises a first and oldest core connected to the establishment of the rural hamlet and featuring linear buildings that follow the morphology of the territory. Their layout defines closed blocks with interior courtyards. This oldest core is complemented by sections of residential fabric comprising low houses within which the landmarks of the town community, starting with piazza San Martino bordered by the parish complex, emerged. A third evolution followed this second development, which appears more relevant in terms of quantities rather than for settlement reasons. This is a disjointed and patchy fabric made of one- or two-family houses built during the phase of industrial development. This expansion resulted in an uncontrolled sprawl within which, however, the old structure defined by orthogonal hydrographic canals that shape a road network that still organizes the actual expansion of the town's urban boundaries is still recognizable.

Within this heterogeneous context, the industrial site of the decommissioned Belloli oil-mill, now undergoing a design rehabilitation, is located in the northeastern part of the town and the urban void that defines it plays the role of a cornerstone between two kinds of road tracing of the urban expansion. Therefore, the rehabilitation of this decommissioned site, in terms of its location and contextual features, is strategically important for the urban transformation of Inveruno.

2. Area of intervention

The decommissioned Belloli site is a large urban void bordered by via Brera, via Fratelli Bandiera, via IV Novembre, and the provincial road 129. Built in 1919, the Belloli industrial facility increased its activity in the post-WW2 period and closed down in 1979. The large void of the decommissioned factory within the town was surrounded along the perimeter by industrial facilities demolished in 2009 for safety reasons and still features a towering reinforced concrete silo used to store seeds. Built in the 1960s, the silo is a reinforced concrete structure supported by "V"-shaped pilasters that emerges as an actual landmark in the town and over the years has almost become a historic monument in the life of its residents. The site is currently in a state of disrepair and heavy deterioration. Its rehabilitation is necessary because it occupies a central spot along a green axis established by the park across from the Town Villa overlooked by the town library that extends along viale Piemonte, connects the areas of the Inveruno Sports Union and further on, the green areas of the Luigino Garavaglia Town Stadium. This green axis is particularly important for the Town of Inveruno as it connects the areas that traditionally accommodate the old San Martino Fair, the main agricultural fair of the region for over four centuries.

3. Architectural design

The principle underlying the design of the new school complex results from the belief that the current buildings fail to meet some fundamental requirements as a good quality educational facility. The two primary schools have small classrooms and lack collective spaces and workshops, without mentioning the fact that their cafeterias are in the basement. The middle school building is hardly functional in terms of the standards of a modern secondary school: the building is not properly insulated and therefore underperforming on an energy level and the implementation of safety measures from the static point of view would require a significant investment.

The project results from the belief that the school represents a place of primary importance and recognition for the town community within the urban structure. For this reason, the project addresses multiple levels in the rehabilitation of the decommissioned Belloli oil-mill site. The core of the project is an open public space created for the gathering of the entire community. The two schools with their sports facilities and a small auditorium that closes the perspective from via IV Novembre overlook this new green square. The school complex is conceived as a small campus where open space is prevailing and the layout of the individual buildings acquires a particular importance. Indeed, in order to respect the vocation of this large urban void, the buildings are recessed from the boundary of the roads so that they create widenings and resting spaces for the town.

Both buildings, a primary school and a middle school, feature an open courtyard overlooking a central square with a slight rotation that follows the layout of the context in order to create articulated and differentiated volumes around the central square as well as to distinguish their sites and accesses.

The middle school complex lies to the north-west from via IV Novembre and comprises the classrooms and the sports buildings, while the open-air sports facilities and the cafeteria directly connected to the school's building lie in the back from the square.

At the southeast, there is the primary school complex comprising, from the entrance, the indoor sports facilities followed by the actual school building in a recessed position from the road. Like the first building, this complex has its green open spaces and the cafeteria at the back. The buildings are autonomous and independent volumes also in terms of their potential of use by the citizenship. The school offers sections others than the educational facilities that can be used in different ways as well.

3.1 The individual buildings and their interior spaces

The middle school building includes four classes with attached workshops and special classrooms, while the primary school includes three classes and an additional Montessori

Method program for one class of the school of Furato, a hamlet of Inveruno.

The middle school has a courtyard layout with a system of load-bearing columns that define its inner and outer perimeter. This solution allows treating the elevations in a differentiated manner by opting for either glazed walls or opaque infills according to the needs. This construction system also offers additional advantages in terms of transparency and visual openness as it optimizes the potential of natural lighting. The school is accessible through the green courtyard overlooking the square. At the ground floor, a large lobby connects the interior courtyard and the garden in the back, a large collective space designed to host temporary exhibitions of the students' works. All the classrooms at the ground and first floors along with the associated workshops overlook the large central courtyard according to a layout that benefits from the best sun exposure. The generous distributive system becomes an informal space (a fundamental element in the guidelines of innovative educational facilities) where alternative education- or study-related activities may be organized. The staircase cores and services are located at the sides of the courtyard so that they are immediately visible and accessible. One of such cores provides access to the locker rooms of the gym through an underground passage.

The class-B gym is designed to host junior league provincial and regional sports games. The facility relies on load-bearing walls and features two entirely glazed and shielded elevations overlooking the courtyard. The gym's main elevation directly overlooks the new green square so that the building may be accessible independently from the school. Spectators and users may reach the gym directly from a lobby in order to get either to the stands on the field's sides or to the locker rooms and ancillary services at the underground level. From the northern elevation, instead, it is possible to access directly the outdoor sports courts in the school's large garden.

860 One last small building accommodates the cafeteria directly connected with the school building from one of the distribution cores through a covered and heated passage. The cafeteria is entirely glazed and openable towards the exterior.

The primary school has the same features as the middle school except for the necessary distinctions related to the latter facility. Classrooms and workshops are similar in terms of size to those of the middle school, except for the selection of specific furniture that guarantees high flexibility in the subdivision of spaces. The gym is smaller than the one of the middle school and designed to accommodate motor activities for children. It is likewise independent and directly accessible from the green square even for after-school programs such as sports activities that require smaller courts – martial arts, yoga or dance classes.

The cafeteria is larger in this case and divided into smaller "rooms" in order to avoid an overcrowding strongly discouraged by the scientific community of educators.

A civic hall completes the square in the terminal part as a facility designed to operate independently from the school and host activities for both students and the entire town community

4. Technical design choices

The technical choices reflect the compliance to the following main criteria: reduction of energy consumption, reduction of the building's environmental impact, reduction of construction times, construction and use flexibility, simplified maintenance and management.

4.1 Building life cycle

The project relies on the use of construction technologies based on the dry assembly of individual components. Vertical prefabricated concrete structures are mounted on a concrete basement for the construction of the load-bearing frame and are completed by floors and interior laminated wood walls designed to guarantee a fast and efficient construction on the one hand, and dimensional precision and flexibility of spaces on the other hand. Prefabrication allows for a high quality level due to the possibility of selective dismantling and replacement of parts in case of maintenance. The absence of the seasoning times required by concrete and the installation of completed components allow for a shorter execution

phase. A particular care was devoted to the distributive flexibility of classrooms, which have no structural elements dividing them and therefore may be repurposed in case of changed use requirements simply by dismantling and moving the wood dividing walls. The two courtyard layouts allow for an optimal distribution network of systems, the connection ridges of which are in the readily serviceable false ceiling and in the raised floors in order to guarantee flexibility of use and an easy maintenance.

4.2 Materials, safety and wellbeing

The wooden elements of the floors allow for a perfect reaction in case of earthquake as they perform as a monolithic plate unbounded to the concrete frames. The now consolidated use of both elastomeric and sliding seismic isolators guarantees a high resistance to earthquakes. Aside from technological aspects, we tried to provide the building with features that would guarantee maximum efficiency to escape routes in case of danger.

The insulation materials we chose are of natural origin and recyclable; they provide a high stability of performance across time and maximum fire resistance. The wooden floors are completed by cork suspended ceilings, which are highly efficient in reducing reduction.

In order to ensure the natural ventilation of spaces, the pivoted windows are equipped with vertical opening leaves. Low-emissivity glass and rolling blinds complete the equipment of windows in order to guarantee high levels of comfort.

The geometry of the façade, which is recessed from the floors, allows for a satisfying control of solar radiation, while the stringcourse beams perform as brise-soleils in order to protect the elevations.

The walls are enclosed in ventilated walls equipped with interior insulation and a particular care was devoted to the elimination of thermal bridges.

Green roofs concur to the control of solar radiation. If sown with low-water requirement plants such as succulents, they will guarantee a further thermal insulation to the surface.

The rooms are equipped with underfloor radiant heating panels; each room is equipped with temperature control calibrated on crowding and solar radiation. A ventilation system channels filtered, hot and humidified air into the rooms through airflow vents and high induction diffusers with air intake vents and grills in toilets and corridors.

4.3 Environmental and energy sustainability

The widespread reliance on prefabrication, the careful design of the shell and the use of natural materials, efficient glazing and solar shields complement energy-efficient air conditioning systems.

The production of domestic hot water is centralized and fueled by heat pumps. Winter/summer air conditioning exclusively relies on renewable power sources.

The geothermal system fueled by reversible heat pumps is the only source of thermo-refrigeration. The system we propose relies on a station with two heat pumps, one of which functioning in a polyvalent reversible mode. Both concur to cover the winter energy supply, while the polyvalent heat pump covers the summer energy supply of the building, as well as the yearly production of domestic hot water (DHW) with a total recovery of heat during the summer period.

A system of photovoltaic panels would be installed on the roof of the gym.

The school is as a relational space open to the territory designed to host public activities for the entire town community. In this sense, the new school of Inveruno is intended as the new civic center of the town, a representative building and a place of cultural integration. The school provides flexible and permeable spaces (sliding walls, movable furniture, glazed classrooms, covered and outdoor collective spaces, etc.) where innovative learning methods become the key element in helping the students acquire the right skills. For this reason, the school equally offers individual spaces for learning and study, exploration spaces where students may experiment and practice as a group the skills they have acquired (cross-disciplinary workshops), and group spaces where they may present and discuss their works with the school and town community. Just as important are the open space between the buildings and the central square where open-air events that involve the entire school community may be organized.

Masterplan for the historical center of Viterbo

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Keywords: *Active preservation, Adaptive reuse, Urban infill*

In 2016 the Municipality of Viterbo commissioned to the Sapienza department DiAP the drafting of a Masterplan for the historic center of Viterbo. The scientific director of the Masterplan, Orazio Carpenzano, together with his team (Raitano, Marcoaldi, Balducci, Bigiotti, Fiorelli, Montori) intervened using a consolidated methodology, based on a thirty year experience in historic centers planning, ideally started by Raffaele Panella with the plan for Città di Castello (Carpenzano, 1993).

The first step was to involve a group of several local experts, establishing a scientific committee composed entirely of prominent figures rooted in the territory.

The second contribution, which was decisive for consolidating the theoretical assumptions of this collective work, came from the local community through individual citizens and sector categories.

Two different ways allowed a continuous interaction between strategic planning and DiAP's purpose to design the city through architecture. The first method concerned the construction of an abacus of possible interventions on the historical center, applicable to buildings in a more or less invasive way in relation to the quality of the existing urban fabric.

The second interaction strategy between Masterplan and architecture tried to verify the contents of the thematic plans, through an international architectural design workshop.

In all the different design strategies, the new fits into the old without any formal or semantic ambiguity. Integration, if necessary, does not deny current temporality, but adapts itself to the needs and expectations of contemporary living.

Introduction

In January 2016 the Municipality of Viterbo (specifically, the task was entrusted by Sector VII "Town Planning and Historical Centres" of the municipality of Viterbo, councillor in charge arch. Raffaela Saraconi, manager in charge arch. Emilio Capoccioni) decided to commission the drafting of a master plan for the historic center of Viterbo to DiAP, the Department of Architecture and Design of Sapienza University of Rome. The DiAP, whose designated scientific manager was Orazio Carpenzano, has been called to elaborate a "guidance document to identify principles and instruments of a procedural and technical nature for the redevelopment, enhancement and preservation of the historic center of Viterbo" (extract from the research contract between the DiAP Department and the Municipality of Viterbo).

The initial intentions of the municipality of Viterbo were essentially to put in a short time (from January to November of the same year) the spontaneous and occasional initiatives undertaken up to that time by the various municipal administrations or by some private individuals for the historic city, and to verify possible development strategies for the future of the most interesting heritage.

So the work started from a preliminary situation without specific guidelines, but with the desire to submit to a careful review an impressive historical-artistic heritage that was never really planned (The framework plan for the historic centre drawn up between 1987 and 1988 by Giuseppe Zammerini was never adopted, and therefore has no normative value). Until that moment local administrations had proceeded essentially following two incompatible instruments: the general variant of the PRG of 1979, which considered the center an almost unitary body to be subjected to a strict protection regime (It is possible to find a clear and exhaustive description of the recent urban events in Viterbo in Enrico Guidoni, Introduzione a *L'evoluzione della struttura urbana e le architetture*, in A.A. V.V., Viterbo. politica, economia, cultura, sport 1945-1992, D.E.U.I., Rieti, 1993), or extraordinary programs that, contravening the existing planning tools, were started when public funding became available (The most important of these interventions is the Local Urban Development Plan, called PLUS, *Viterbo: futuro al centro*, which falls within the scope of the Regional Operational Programme FESR Lazio 2007/2013).

The municipality, playing it by ear, did not allow to the historical city from an intelligent use of heritage, especially in a period of crisis of ideas and resources.

Methodology

Carpenzano and his team (coordinated by Manuela Raitano, with the young researchers Paolo Marcoaldi, Fabio Balducci, Stefano Bigiotti, Angela Fiorelli, Marta Montori. The research group was also composed of the following collaborators: Valeria Cerilli, Claudia Giancola, Iris Gjoni, Myriam Imperato), in a context so uncertain and fragile, have intervened using a consolidated methodology, on the basis of a thirty-year experience in the planning of historic centers, that ideally started with Raffaele Panella during the project for the urban planning of Città di Castello (Carpenzano, O. (1993)).

The first step was to involve the different local expertise, establishing a scientific committee entirely composed of prominent figures rooted in the territory, university professors and professionals who have dealt the subject "Viterbo" according to their knowledge and their reading tools (The members of the scientific committee for the masterplan of the old town of Viterbo were: Enzo Bentivoglio, Elisabetta Cristallini, Silvio Franco, Francecso Galli, Francesco Mattioli, Alfredo Passeri, Giuseppe Scarascia Mugnozza).

The members of this scientific committee immediately participated in the formation of the entire research program on Viterbo, becoming over time an indispensable link with the city and an extraordinary means of rooting in the place.

Once the main members of the research group has been defined, we have moved on to the analytical-interpretative study of local urban events. To tackle a complex urban phenomenon like the one in the historic center of Viterbo it was essential to place this phenomenon in a wider context, comparing it with other models that had at least a sufficient number of comparable characteristics.

The analogical criteria used to select urban settlements comparable with Viterbo, and which will henceforth be identified with the term sample city, are essentially two: first, cities similar in number of inhabitants were chosen and within a common territorial context, the Central Apennines. The second selective principle is linked to the clear medieval matrix of the main urban system. Based on these two criteria, the cities identified for comparative studies are: Arezzo, Ascoli Piceno, Orvieto and Siena.

Since the preliminary morphological analyzes Viterbo assumes an eccentric and almost singular role. The historic center of Viterbo is not found in a raised position or in a strategically dominant place, as in the case of the other sample cities. The main axis of extra moenia expansion has developed along the slopes of the Cimini Mountains (corresponding to the current Capuchin and Murialdo districts), and is positioned at a much higher level than the historic city. This orographic inversion in the relationship between the center and its periphery is made even more dramatic by the lack of a critical distance between the inside and the outside of the city. Suburbs expansion has grown in contact with the center, completely canceling the spatial and figurative qualities of the medieval city walls, a gigantic stone threshold conceived to be a limit and a passage at the same time.

These facts determine an equivocal visual relationship, since the walls no longer have the power to perceptively separate the inside from the outside. The center looks down from the periphery and, in turn, is ambiguously observed from the outside. The low number of residents within the historic city of Viterbo, combined with an average age of the resident population in the relatively low center determine an ideal socio-cultural context to experiment with unconventional housing policies, verifying in concrete the possibility of introducing, in a fabric historical with a clear medieval imprint, unpublished typological and organizational forms.

A further important contribution, decisive for consolidating the theoretical assumptions of this collective work, came from the local community: individual citizens and sector categories were involved in drafting the master plan through a multitude of initiatives, preliminary meetings, surveys, training of groups in the best known social networks.

However, the participatory vision of the urban project has had a fundamental but limited role for this research structure.

The contribution that was requested to the citizens of Viterbo was to share information, perceptions, needs, visions and, more generally, implicit and explicit knowledge to make them become project assets. This participation of the community in defining the main strategies of the plan never culminated in project actions (Through an online survey promoted between March and April 2016, the citizens of Viterbo were asked to summarize the identity of the city in a few words. The most frequent response, Viterbo: heart of Tuscia, clearly shows the need to assume an identity not from a single place or fact, but from a landscape and an environmental heritage). Citizens have indicated problems and needs, strongly orienting the guidelines of the master plan, but have never replaced the researchers called to translate the expectations of the community into a project.

Contents of the masterplan

As for the contents, the final plan document consists of thematic elaborations (residence, tourism, landscape, etc.), each of which combines the analytical reflections (graphic synthesis of the current state) with the design intuitions (development lines and transformative scenarios).

The proposals elaborated by the master plan are based on three fundamental basic choices, which have oriented the entire work: the strategic importance of the city walls in the redevelopment policies of the city; the enhancement of the dominant landscape within the walls; the idea of a renewable city through a controlled infill of new buildings according to contemporary languages and functions.

The Wide-scale strategies

The first works, as mentioned above, have a prevalent analytical nature: they do not introduce design reasoning on the historical center, but specify the potentialities implicit in

the Viterbo area, to better illuminate the reasons for some choices of address made explicit in the subsequent panels.

The observation of planning documents at the regional and provincial scale proves the intuition of a strong landscape potential of Viterbo outside the walls linked to thermalism, to the presence of the Via Francigena and to the surrounding Etruscan sites. In summary, there is a triad of attractors linked to three different qualities of the landscape: the natural landscape, the historical landscape and the archaeological landscape.

The scale of the municipal territory

At the municipal level, some actions can be implemented in a short time with small and limited investments. These are actions that all come from the perimeter of the city walls but, in our opinion, they are essential for laying the prospect of development of the historic city on a solid foundation.

It is therefore planned to set up a cycle-pedestrian network linking the center-historic Viterbo with the constellation of minor historic centers, through targeted project operations aimed at the implementation of the ring connections between the main connection routes between these and Viterbo. These connections are already almost all existing in the form of a secondary path, often unpaved and currently badly indicated. As the masterplan's works illustrate, few and targeted actions would allow us to move from a radial distribution of the connections (where the going and return insist along the same route) to an annular circulation, more diversified and linked to a wider use perceptive territory.

The urban scale

The lack of an actually implemented post-unitary plan and the unbalanced expansion along the south-east / north-west arch of the city have left available the western sector of the city outside the walls. It is an urban quadrant characterized by the predominant shape of the green landscape that, like an open hand, creeps into the historic center through the valley of Faul to cut off the margins of the compact urban fabric.

The valley of Faul is now an underutilized resource, but it is also a magnificent opportunity, a keystone to approach the rethinking of the role of green in the historic center as in the whole city. It can become, concretely, the physical place through which to realize the connections of the soft mobility intra and extra moenia, a powerful hinge between city and territory.

The "nature component" in the the city center is therefore very powerful in Viterbo and should be considered as the main resource of the project for the enhancement of the historic center. All design strategies go in the direction of preserving the continuity of the main environmental systems.

Living "in the center"

A careful analysis of urban fabrics, the census of voids and breaks in the city blocks, the decoding of the main development vectors of the ancient city center: these are the main processes on which is based the urban regeneration, which encourages small and targeted operations of infill with private investments, and recovery operations of disused public buildings. The destination of these last buildings will be for the benefit of the students and of a particular group of users: the so-called "*grey* area" of the population, made up of those who do not qualify for social housing, and do not even have the economic capacity to rent or buy a house.

In this framework of development, the network of proximity services is strengthened by making available to new uses a part of the public assets currently underused, facilitating the use of services in the historic center and accentuating urban vitality.

Recovery strategies for existing heritage

The masterplan of the historic center moves from a consideration: no protection is really

resolutive if it is not accompanied by an idea of use (often of reuse) of the building fabric of a historical-artistic center. A real interest in the past must necessarily involve a full responsibility towards the heritage, which for this reason must not only be cared for and safeguarded, but also reinvented, rewritten and reused, in a few words it must be re-designed.

According to these considerations, one of the masterplan's strategic works records the amount of public property currently underutilized or even abandoned, almost as if to draw a map of under utilization. On the one hand this map represents the amount of useful resources currently dissipated for use, on the other, it represents the true opportunity for the transformation of the city center.

Within this census of forgotten places yet available, new innovative collective functions are placed: public theaters, accommodation for students of the university campus of Tuscia, reading rooms h.24 related to the university, museums dedicated to the history of this ancient city, etc.

The hypothesis of reuse proposed alternates functions related to residence and receptivity to tertiary functions, such as services for culture and leisure. Each of these interventions can be started independently, although it constitutes a part subordinated to an overall program of reuse of the historical center.

The walls project

As already anticipated, one of the main topics of the masterplan concerns a different perception of the medieval city walls, which are considered as the main place of interface and exchange. For this reason it was necessary to expand the perimeter of the historic center, to be able to include an urban area located outside the walls within the walls project: a real ring of varying thickness that follows in parallel the perimeter of the city walls, with some internal south-eastern outcrops, towards the valley of Faul.

The walls project also foresees, as clearly indicated in the boards related to the landscape, the recovery of the ancient walls and their openness to the public, as privileged vantage points for viewing the city and its territory from above.

The project incentives - as an optimal solution - the hypothesis of putting completely underground the railway section between the stations of Porta Romana and Porta Fiorentina, and the construction of a stretch of cycle path on the current site of the tracks. As an alternative to this solution (and provisionally, for the time necessary for the complete implementation of underground section), must be considered, in this context, hypothesis of mitigating the presence of the railway line, bearing in mind that failure to put underground the line would determine an important decrease of the section of the green ring.

In all the different areas of intervention the main actions to be undertaken will concern the improvement of accessibility to the historical center and the strengthening of the connections and the nodes of exchange between the different urban systems, inside and outside the walls.

All around the walls it is foreseen the reorganization of the driveway circulation, the establishment of a circular line of shuttles-buses and the realization of underground parkings, immediately placed extra moenia, but with pedestrian exits directly intra moenia.

The international design workshop

Parallel to the drafting of the plans, it was possible to verify the contents and the theoretical assumptions of the research through the scale of the architectural project.

A graduate laboratory dedicated to Viterbo and an international architectural design workshop (The international workshop "Per la città di Viterbo" was held in Viterbo in the former church of the Almadiani from October 1 to 8, 2016, and was directed by Orazio Carpenzano. The jury that evaluated the final workshop papers was chaired by Herman Hertzberger) have imagined possible development scenarios on five specific areas previously identified by the research group. The places object of the five prefigurations were: the Papal Gardens; the Sacrario square; the Fortezze; the Rocca square and the Palazzo Farnese on the cathedral hill.

The design themes concerned specific formulations indicated specifically in the masterplan: at Palazzo Farnese it was verified the possibility of converting the abandoned Ospedale Grande Degli Infermi to the Viterbo City Museum; for the Sacrario square the main target was to mitigate the surface parking and integrate it with functions related to leisure and recreation; the Papal Gardens have been imagined as the area through which to realize the pedestrian access to the Palazzo dei Papi, involving the stretch of the Via Francigena that insists in the area; in the immediate surroundings of the former church of Santa Maria delle Fortezze, it has been planned a partially buried parking outside the walls and a careful project of urban densification within the walls; lastly, there was the attempt to redesign the public spaces of the north-west sector of the historic city, working on a system of three squares that includes, in addition to Piazza della Rocca, the spaces in front of the papal stables designed by Donato Bramante, and the churchyard of the Basilica of San Francesco alla Rocca.

In all the project proposals, the new fits into the old without any formal or semantic ambiguity. Integration, if necessary, does not deny existing temporality, but adapts itself to the needs and expectations of contemporary living. The city, and with it its ancient center, is a process in continuous becoming, in which the new is not only justified to stay into the ancient, but rather it is the only possible way to rewrite and continue to keep alive the ancient.

Conclusion

The results of this research are now published in the volume of the DiAP PRINT series *Per la città di Viterbo. Masterplan del centro storico, direzione scientifica di Orazio Carpenzano*, curated by Paolo Marcoaldi (Marcoaldi, 2018).

The master plan was also adopted by the municipality of Viterbo during one of the last council meetings of the administrators

who governed the city in the five-year period 2013-2018.

The real hope is that this research, which collects not so much a series of specific projects, but above all a new vision for the historic city of Viterbo, is not the synthesis of a beautiful participatory path, but the prelude to a new beginning.

The possible development scenarios of the master plan are substantially two. The first step involves the formation of a permanent laboratory on the historic center of Viterbo (Viterbo City Lab), a multidisciplinary structure that, based on the contents of the plan, can control the quality and feasibility of the main initiatives concerning the historic city.

The second process of implementation of the master plan consists of a list of the main strategic interventions that the new municipal administration is required to complete in the coming years.

This time schedule of the main public and private initiatives concerning the historic center does not exhaust and does not fully capture the true legacy of the master plan.

As time went by, it has been increasingly evident that the city has now lost interest in wide-ranging initiatives, Viterbo citizens

look with suspicion to everything that does not have the only purpose of solving the contingencies of the moment.

The masterplan has tried to take care of a very significant inheritance. The destiny of Viterbo and its center is inextricably linked to the shared reconstruction of a cultural journey that has considerably reduced since the mid-70s, just when Pier Paolo Pasolini invoked for the whole of Tuscia "a cultural turning point, a slow development of conscience" (*Cara Tuscia*, interview with Pier Paolo Pasolini published in the newspaper "Il Messaggero" on 22 September 1974).

The research undertaken by the DiAP department transcends the boundaries of traditional planning, and stands as a cultural model that measures urban problems with the forms and figures of architecture, and seeks to renew, through a plurality of knowledge and reading tools, the sense of everyday life inside the historical city.

The real hope is to give a concrete perspective to a inattentive city, which perhaps no longer looks to the future with the awareness of its important past, and this is likely to suffer the deceptions of a present poor in ideas, poor in culture, poor in architecture.

Figure 1. Comparative analysis between Viterbo and the sample cities. From left: morphological studies in plan and section, demographic analysis.

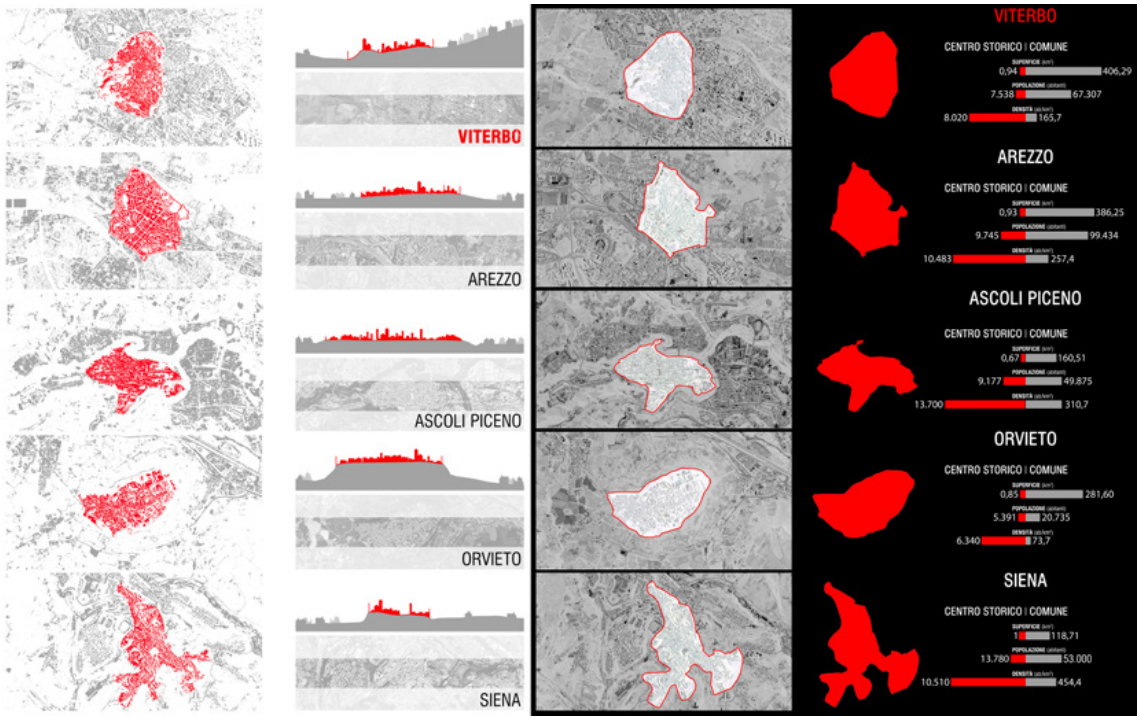

Figure 2. Visitors' presence in main tourist sites of the Tuscia

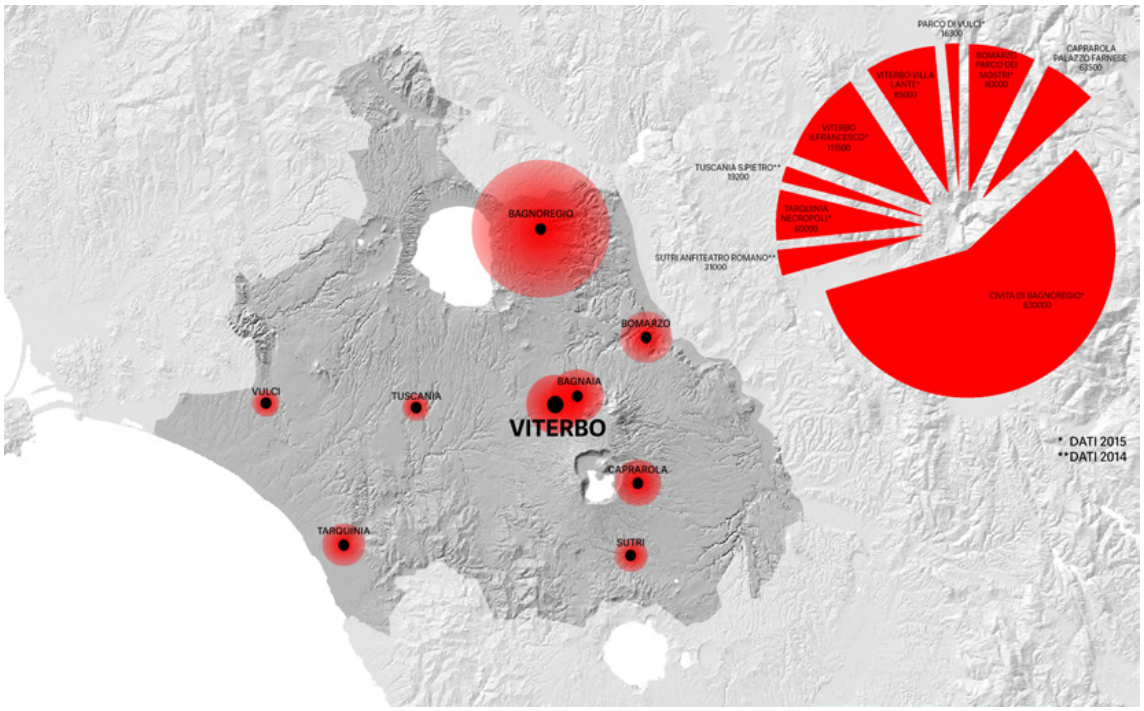

Figure 3. Masterplan table. Viterbo smart city.

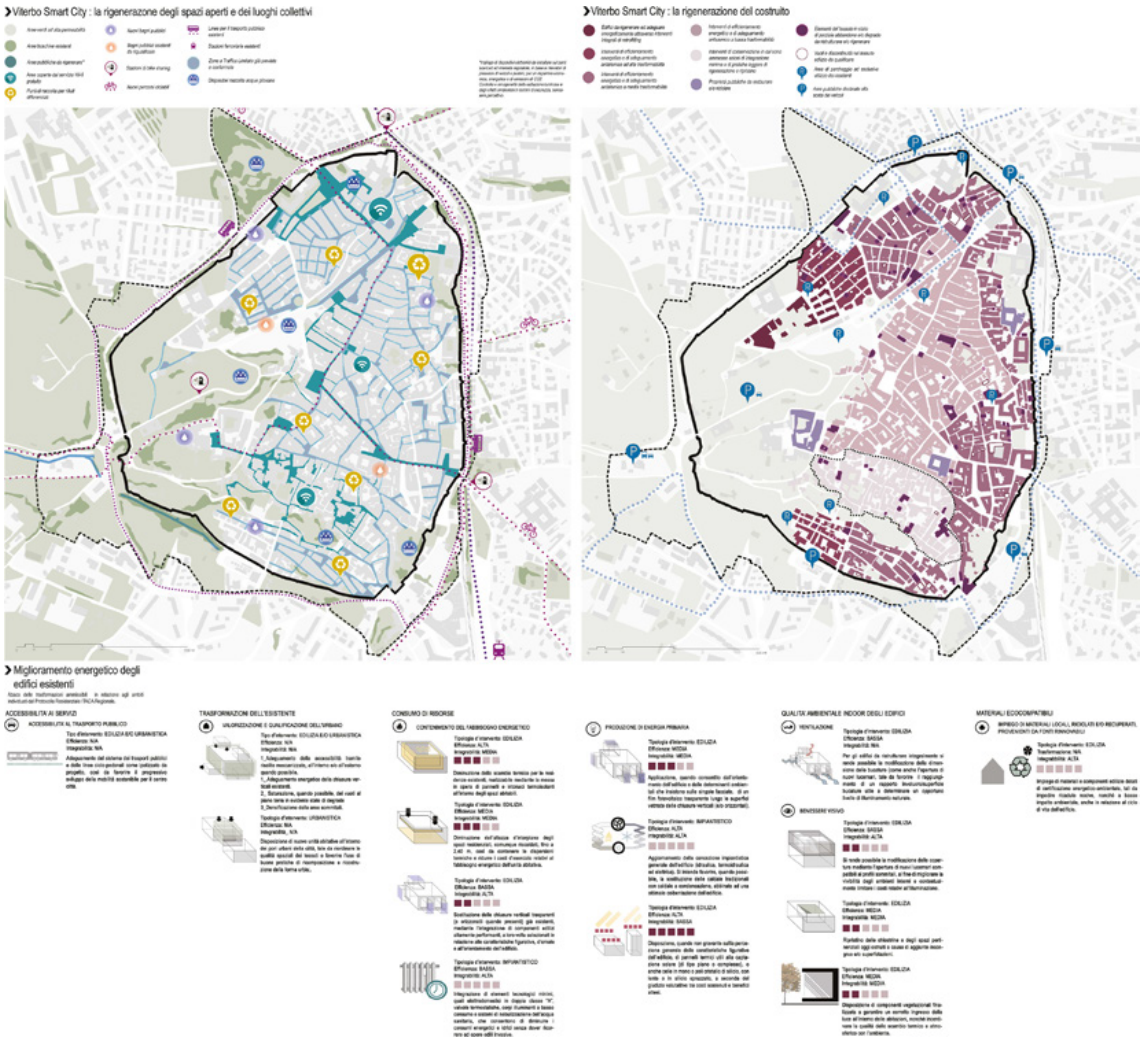

Figure 4. Around the acropolis; winning project of the international workshop.

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Merge teaching space and urban space. Reuse of school buildings heritage for a new didactics

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Based on the relationship between the shape of the urban-space and the shape of the teaching space, this work aims to provide useful guidelines for the redesign of the school buildings of consolidated urban fabrics.

The research defines a typological abacus of school buildings and uses a historical-normative survey useful for tracing the evolution of the scholastic question. In this regard, the non-intervention has led us to face this study.

We decided to focus on the consolidated fabric, by tracking the block-like type and examining it with the aim of defining the possible interventions.

We intend to generalize the operation on the architectural type by setting a congruence relationship between the architectural quality of the building and the proposal of renewal intervention that offers, as a final result, the possibility of obtaining a compositional matrix for reuse and renewal.

In order to make flow teaching space into urban space, we decided to include civic functions within the school complexes so that they become a reference point for the community; we intend to create innovative didactic environments, to relate the design solution with the reference context and to open the school to the territory by operating on the base of the building.

As demonstration will be analyzed some examples of schools rest on the consolidated fabric of Rome; projects will be proposed and, in conclusion, the effects produced on urban form will be examined.

Introduction

The aim of the research defines an operational strategy that transforms the existing school buildings, located in the consolidated city and which generates new practical signs that can be assessed both in the design of learning spaces and in the urban fabric already built. A work on the form that intends to define a renewed approach in the modification of teaching environments and community life, starting from the historiographic, normative and political survey of the school architecture and reaching the writing of a planning matrix that would be able to provide guidelines for the design/modification of these buildings.

The aim is to define intervention practices based on general indications applicable to the multiplicity of city possibilities and, in detail, to the multiplicity of types of the school building. To clarify the proposed method will be analyzed one example of school building in the consolidated fabric of the city of Rome, and then will be advanced the design proposals for the transformation of these buildings.

Therefore, in the first part of the discussion, will be proposed a general picture of school normative historiography with the aim of tracing the effects that the actions of the State have on architecture; and subsequently it will be described, from the Unification of Italy to today, the typological evolution of school buildings, especially those for secondary education.

In the second part of the discussion, will be proposed the operating mode in the form of a compositional matrix suitable.

State of art

The Italian school building legislation remains unrealized and is by now stuck. This paper does not intend to trace a path of all school reforms, but wants to focus only on those reforms that have modified the school system from a formal point of view, and that have had consequences on the form of the school building for processing data useful for design.

In the late XIX century Italy begins to turn its attention to Europe and especially to those foreign models that appeared fundamental for the political class of the time: Prussia, France and England. The architecture of school buildings is based on the example of the "school-barracks" of European derivation, structured according to the minimum functional unit of the "classroom-corridor". All schools seek uniformity with this model, because it is an expression of the principles and programs

given by the central government . In 1888 the first national technical regulation for school buildings was published, which introduced the criteria for the dimensioning and internal and external distribution of the parts making up the school buildings. The Royal Decree also invites the designers to use the plans of the sample projects developed by the Ministry of Education, limiting the planning operations to adjustments to the proposed schemes.

The advent of fascism with the Gentile reform of 1923 will lead to the reorganization of the didactic paths, establishing a rigid how to access the upper levels of education, and to the CONFORMITY of all school buildings to the model imposed by the regime. *Testo Unico* of 1928 brings a rationalization of the school, promoted by the *Casati law*, underlining the need to relocate the school service outside the urban centers in order to widen the users. These normative prerequisites have found an outcome in the four types of schools presented in the *V Triennale* of 1933: urban school, rural school, small mountain village school and outdoor school. It must be said that, between 1923 and 1939, the year of the adoption of the *Carta della scuola*, proposed by the Minister of Education Giuseppe Bottai and modeled on the model of the *Carta del lavoro* of the 1927, the *Gentile reform* underwent numerous adjustments that go in one direction: the conversion of the school into a fascist school.

From the second post-war period, until the promulgation of new technical standards of 1975, we are witnessing a long period characterized by a DEBATE in the field of school building. In particular, after World War II, in 1945, the new programs for elementary school encourage the formation of a school that takes the form of an educational community; in fact, in 1949, the *competition for outdoor schools*, issued by the Ministry of Education, contains an explicit invitation to not considering the regulations on school buildings then in force. The winner of the competition is the architect Ciro Cicconcelli, who identifies some

central elements of this new concept of the school as a public service that must play a primary role in the training of young students: the overcoming the centrality of the classroom, accompanied by a preparation of equipped and specialized spaces; the flexibility of spaces to adapt to changing teaching strategies. The spaces must be adequate «psychologically, as well as functionally» and it begin to think about the school building on the basis of psycho-pedagogical considerations. The presented projects consider issues related to space, light, color and openness to the community, and also incorporate some international issues that are resolved in overcoming the *corridor scheme* in support of distribution logic organized according to *functional units*.

In 1956 the *law n. 782* establishes principles of absolute novelty with respect to previous regulations that were very attentive to hygiene standards and functionality, but lacking in psycho-pedagogical issues: the family becomes part of users of the school and the school building has the role of promote these meetings; it stresses the importance of spaces that allow group activities; the non-exclusivity of the teacher-student relationship is promoted in favor of a new way of learning and training, based on experience and sharing. From the distribution point of view, the regulation distinguishes the types based on the number of classrooms, and prohibits to have more than two elevation plans and provides for the adaptation of the aero-lighting ratio. In the '60s the evolution of the typological choices related to the school has, besides, a notable propulsive push following the *XII Triennale of Milan* of the 1960, cured by Gae Aulenti and Luigi Caccia Dominioni and dedicated to the theme "*La casa e la scuola*". In 1966, in order to realize in a short time those scholastic artifacts required by the changed socio-institutional condition, the *Circolare n. 2345 del Ministero dei LL. PP. in materia di Edilizia scolastica prefabbricata,* that imposes the use of prefabrication systems, was promulgated. Until the '70s there wasn't an official regulation to replace the one in 1956. In the 1975 there is the issuance of new technical standards — *Norme tecniche aggiornate relative all'edilizia scolastica, ivi compresi gli indici minimi di funzionalità didattica, edilizia ed urbanistica, da osservarsi nella esecuzione di opere di edilizia scolastica* — which establish that the architectural body of the school must allow the maximum flexibility of the various school spaces which must correspond to the identification of defined and fixed parts such as spaces for special and laboratory activities (science, physics, chemistry) or cultural and collective

(auditorium, the gym). This renewal action must be firmly connected to the experimental school building works, desired and conducted by the *Centro Studi*, which have guided, verified and corrected the criteria adopted by the technical standards.

At the end of the period of great ferment, the debate, which has been gradually running out, it gives way to a condition that we could define "KEEPING THE STATUS QUO".

In 1996 the *law n. 23, Norme per l'edilizia scolastica*, promotes the adaptation of all schools to conditions of hygiene, safety and usability and establishes the *Anagrafe dell'edilizia scolastica* and the *Osservatorio per l'edilizia scolastica*. The reading the indicators of the school Register, started in 1996 and not yet completed, clearly suggests that the situation of school buildings in our Country is in a state of emergency in terms of safety, remediation, maintenance, upgrading and sustainability of schools.

Methodology

The tool developed so far is the synthetic result of the process of elaboration of a method that can provide useful indications thanks to which it is possible to produce a project proposal for intervention and transformation of the school spaces.

The approach is divided into two main phases: the analysis and the planning.

In the first phase an analysis is carried out, regardless of any decision on the intervention to be formulated, in which the essential data on the building in question are collected: graphic and photographic drawings, historical-personal data, the typological-distribution classification, synthetic technical data, and finally includes a description of the urban context and the type of settlement accompanied by a plan of the surroundings. A code is also assigned to the building for inclusion in the case study archive. The second page instead contains the description of the school spaces distinguished according to a functional

criterion and measured in their consistency.

In the planning phase the strategic choices concerning the project are made, this is introduced by the logical framework in which the intervention logic is clarified, which is divided into the two levels of targets ranging from general to specific for each of which verifiable indicators are recognized. Those pointers must be objective and quantifiable parameters and the observations include those factors or conditions external to the project but important for achieving its results.

The next step concerns the compositional matrix in which: a series of preliminary conditions deduced from the description of the urban context and the type of settlement in the first sheet, are interpolate with those compositional operations, in the double or positive sense, applicable to the block type. In particular: connecting / separating referring to the modification of distribution systems; adding / subtracting elements or surfaces; multiplying / dividing units of blocks and carrying out operations in conformity / differences with respect to the characteristics of the system. The results of each compositional operation, for which at least one relation with a precondition has been established, are expressed in schematic images of the system studied. The design indications, thus obtained from the matrix, are a tool for setting up a planning reflection.

Application of the method

The case study examined for the application of the method is that of the Torquato Tasso state high school in Rome, one of the first high schools in the city. It is located in the Ludovisi district, within the Aurelian walls, in a building that it shares with the Augusto Righi State scientific high school and the Michelangelo Buonarroti middle school.

From the schematized results of the compositional matrix different possibilities of intervention on the building emerge. The repeated verification of different preliminary conditions focuses on those areas where the development of an intervention is most likely.

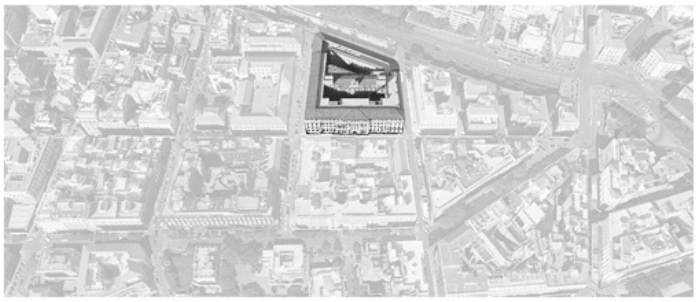
The proximity of Regina Elena and the presence in the same building of two other schools of first and second grade make valid the hypothesis of relating the various institutions through the reopening and creation of paths that connect the common spaces of the courts together with new annexes, acquired by the closure of via Puglie and by the pedestrianization of via Campania. That nearness will serve to create a network of differently specialized areas for the service of schools and neighborhood users. The purpose of this report is therefore to facilitate and increase the space possibilities of the institute in favor of a better involvement between the community and the school population but also to create a more efficient system of environments and services to promote mutual relations between the community and the school both from the logistic and the identity point of view, hierarchizing the courtyards according to the activities and times of use, as expressed in the objectives outlined in the logical framework. The planned interventions therefore envisage the transformation of the Via Puglie stretch into an internal courtyard bounded by the existing fronts and by two headboards that realize the continuity of the corridors using the typological element of the block unit. Moreover, it is possible to isolate the stretch of road to the north between the building and the ruins of the Aurelian walls, in order to create an exclusive property of the institute on whose the road it has access. To these is added the intervention on the court of the high school Tasso, filling the empty spaces around it and placing non-specialized spaces to serve the educational activity, protecting with a transparent cover the emptiness of the court, reinforcing the value of centrality of space

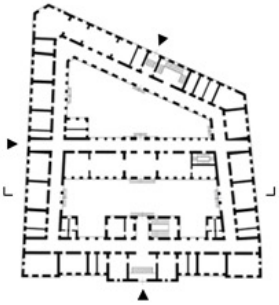
Conclusion

This research recognizes the validity of the study of the relationship between the transformation of teaching space and the shape of urban space. By investigating the potential of a distribution system such as block-type, it is possible to experiment with buildings on historical fabrics in order to renew their uses and spaces by establishing different levels of relationship with the urban surroundings.

Figure 1.

1908_I_TRB_Blc-Crt





DATI SINTETICI

TIPOLOGIA DISTRIBUTIVA: a blocco con doppia corte
UBICAZIONE: Roma, Municipio I
REALIZZAZIONE: 1908; soprelevazione Tasso 1961
ORDINE E GRADO: scuola Media, liceo Ginnasio e liceo Scientifico
DENOMINAZIONE ATTUALE: Scuola Media dell'Istituto Comprensivo di via Puglie (ex "Buonarroti") - via Puglie 31; Liceo Ginnasio "Torquato Tasso" - via Sicilia 168; Liceo Scientifico "Augusto Righi" - via Campania 63
PROGETTISTA: ing. Mario Moretti
TECNICA COSTRUTTIVA: muratura portante; soprelevazione Tasso: ossatura in c.a.

SUPERFICIE TOTALE DEL LOTTO	mq 5.958
SUPERFICIE COPERTA	mq 4.413 (74%)
SUPERFICIE SCOPERTA TOTALE	mq 1.545(cortili)
CUBATURA EDIFICIO	mc 97.416
PIANI FUORI TERRA	n° 4 (+ seminterrato e soffitte)
CORPI SCALA	n° 3
ALTEZZA MEDIA LOCALI	m 4,50; terzo piano m 3,50

CONTESTO URBANO E TIPO INSEDIATIVO

L'area è situata ad est del rione Ludovisi nato dalla lottizzazione dell'omonima Villa con la firma di una convenzione tra la famiglia e la Società Generale Immobiliare. L'intera zona è stata oggetto di un forte sviluppo urbanistico nel periodo post-unitario: fra il 1886 e il 1890 vennero costruiti numerosi edifici signorili e abitazioni borghesi; si congiunse Piazza Barberini a Porta Pinciana, creando Via Veneto e molte delle nuove vie, disposte a scacchiera ed interrotte a nord dalle mura Aureliane, furono intitolate alle neonate regioni d'Italia. I rioni Ludovisi e Castro Pretorio sono tutt'oggi caratterizzati dalla presenza di resti archeologici, monumenti storico-artistici, sedi ministeriali, ambasciate, della Biblioteca Nazionale, di numerosi uffici ed esercizi commerciali a scapito della destinazione residenziale.

L'edificio è affacciato sulle vie Sicilia, Puglie, Campania e Lucania. Ospita attualmente tre istituti: la scuola Media, con ingresso da via Puglie, è collocata al piano terra e occupa la parte di quella che era originariamente la "ScuolaTecnica" disposta nei due bracci a nord; il Liceo Ginnasio, che occupa il piano terra nella totalità dei quattro bracci del cortile a sud, del primo con qualche eccezione e del secondo piano; il Liceo Scientifico, che al piano terra presenta solo l'ingresso con la scala e l'ascensore su via Campania e occupa una parte del primo e del secondo piano e interamente il terzo piano (la soprelevazione).

Il carattere del manufatto è ancora connotato da un'architettura ottocentesca. Posto a ridosso delle mura, il lotto assume una forma trapezoidale con il lato maggiore su via Puglie; il corpo edilizio si attesta sul perimetro dell'isolato, ha uno spessore costante che si fa più profondo nell'ingresso principale su via Sicilia ed un corpo centrale che separa due cortili interni; le facciate risultano caratterizzate da un ordine gigante e dalla suddivisione in tre fasce orizzontali, scandite dal modulo delle tre finestre per unità-aula (con eccezione di quelle suddivise) rivolta sempre verso l'esterno; lo schema distributivo con corridoio anulare affacciato verso i cortili collega in serie le aule; la specificità di edificio scolastico è riscontrabile nella dotazione di aule specializzate per i laboratori sin da progetto.
Realizzati con tecnologie tradizionali quindi non connotati da luci ampie né da aperture ardite, questi locali hanno posizioni particolari nell'architettura dell'edificio dando luogo ad una corrispondenza tra ambienti speciali e il ruolo urbano di alcune parti di esso: una palestra è collocata nell'angolo che disegna l'incrocio tra via Campania e via Puglie; l'altra palestra è collocata in rapporto al cortile e le attrezzature da esterno, pensate per la ginnastica all'aperto; i laboratori soprastanti si affacciano dal corpo centrale nel cortile del Tasso; l'aula magna è posta al di sopra dell'ingresso principale su via Sicilia e sottolineata in facciata da un timpano posto sul coronamento, oggi sostituito dalla soprelevazione.
La qualità degli spazi interni è riscontrabile inoltre nella loro altezza e luminosità, nella profondità della struttura muraria e delle coperture voltate, nella qualità dei dettagli architettonici e d'arredo.

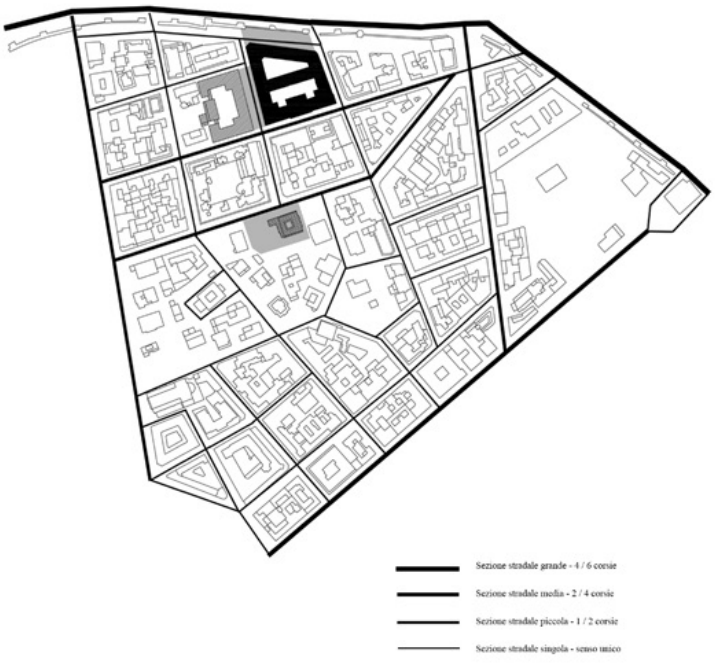
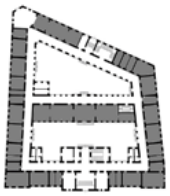


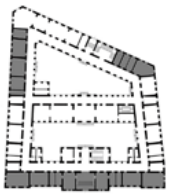
Figure 2.

DESCRIZIONE E CONSISTENZA

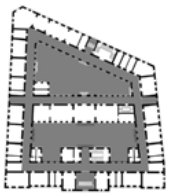
			Tasso	Righi	Ex Buonarroti	Tot.
TIPOLOGIA	Edificio	A doppia corte su lotto trapezoidale				
	Distributivo	A blocco accorpato (aula + corridoio)				
SPAZI PER LA DIDATTICA	Aule frontali	T e R / Aule ampie, alte e illuminate da almeno due finestre, disposte su corridoio interno e affaccio sul perimetro del complesso scolastico	35	25	10	70
		Ex B / Aule dimezzate rispetto all'unità originale con tramezzature, dotate di almeno una finestra				
	Aule laboratorio	Ex B/ Aule specializzate per gli incontri laboratoriali di scienze, informatica e arte	4	2	3	9
		T / Documentate già nel progetto originale; attualmente destinate ad aula interattiva, aula di informatica, laboratorio di scienze, laboratorio artistico e archeologico; dotate singolarmente di cablaggi e wifi, accessi all'acqua e al gas (non sempre in uso), materiale e strumenti tecnici				
	Aule studio	Ex B / Presente all'interno della biblioteca	/	/	1	1
SPAZI PER LA DOCENZA E L'AMMINISTAZIONE	Aula docenti	T, R, e Ex B / Aule ricavate da spazi suddivisi, di piccola metratura e ricavate da ex aule	1	1	1	3
	Aula incontro genitori		/	/	/	/
	Presidenza	T / Situata al primo piano, di ampia metratura e qualità architettonica R / Situata nella succursale di via Boncompagni	1	1	1	3
	Uffici	T / Segreteria didattica, amministrativa e del personale ubicate in ex aule e disposte accorpate al primo piano	6	2	2	10
		R / Segreteria didattica e servizi; spazi amministrativi situati in maggioranza nella sede di via Boncompagni				
		Ex B / Segreteria didattica, amministrativa e del personale ubicate in ex aule e disposte accorpate al piano terra o nella sede principale dell'istituto comprensivo sito nella antistate scuola *Regina Elena*				
CONNETTIVO	Atri e corridoi	T / Atrio con rampa interna d'accesso a gradini; corridoi ampi e lineari, disposti a quadrilatero e con affaccio verso il cortile interno	1 - 16	1 - 9	1 - 3	3 - 28
		R / Atrio con accesso su quota strada dotato di ingresso, scale e ascensore; corridoi ampi e lineari, disposti su due lati e con affaccio verso il cortile interno				
		Ex B / Atrio con accesso su quota strada con ingresso allineato al corridoio del corpo edilizio centrale e direttamente collegato con aule e uffici				
	Spazi attrezzati	T / Nei corridoi è organizzato in teche disposte in maniera diffusa il museo delle scienze, abbracciante varie discipline: Chimica, Fisica, Biologia, Paleontologia, Mineralogia e Geologia.	1	/	1	2
	Cortile	Ex B/ Pavimentato e senza aree verdi per le attività ricreative ed all'aria aperta	1	/	1	2
		T / Dotato di due campi da gioco scoperti; esiguità degli spazi, peggioramento delle proporzioni e riduzione della luminosità data dall'aumentata altezza dell'edificio dovuta alla sopralevazione ed al conseguente aumento delle facciate interne affaccianti sul cortile a sud				
SPAZI SPECIALIZZATI	Aula Magna / Aula conferenza	T / Ampia aula a doppia altezza con balconata su tre lati, 100 posti, attrezzata	1	/	1	1
		Ex B / Aula a doppia altezza con piccola balconata sul palco, 70 posti, attrezzata				
	Palestra	T / Ricavate dall'unione di due unità aula e dotata di piccolo magazzini e spogliatoio	2	/	1	3
		R / Situata nella succursale di via Boncompagni				
	Mensa	Ex B / Situata al piano terra in una ex aula	/	/	1	1
	Biblioteca	Ex B / Situata al piano terra in una ex aula; spazio destinato a documentazione, ricerca, studio assistito e lavori di gruppo	1	1	1	3
		T /				
		R / Situata nella succursale di via Boncompagni				
	Altri	Ex B / Teatro: l'istituto comprensivo ha un proprio teatro funzionante e organizzato	/	/	1	1



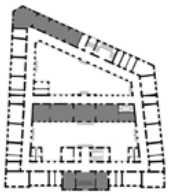
PIANI 1 2 3 4



PIANO 1



PIANI terra 1 2 3 4



PIANI terra 2 3

Figure 3.

QUADRO LOGICO

	LOGICA DI INTERVENTO	INDICATORI	OSSERVAZIONI
OBIETTIVI GENERALI			
Apertura della scuola al quartiere	Integrazione spazi urbani con spazi didattici	Aumento ore/utilizzo, diversificazione utenze	Introduzione servizi e attività di interesse collettivo
Trasformazione del rapporto dell'edificio col contesto urbano	Nuovi livelli di relazione con strade e spazi pubblici	Aumento superfici esterne fruibili	Gestione flussi e accessi
OBIETTIVI SPECIFICI			
Condivisione e creazione spazi specializzati con il quartiere	Ampliamento e valorizzazione delle attrezzature disponibili alla popolazione scolastica ed extra-scolastica	Aumento quantità e varietà dei servizi	Data una bassa percentuale di popolazione residente l'intervento è rivolto all'utenza scolastiche durante le ore pomeridiane
Creazione di nuovi spazi comuni e aree all'aperto	Costruzione nuovo cortile / giardino		Liceo Righi senza cortile o pertinenze a piano terra

MATRICE COMPOSITIVA

	OPERAZIONI COMPOSITIVE			
	Collegare	Aggiungere	Moltiplicare	Conformità
	Separare	Sottrarre	Dividere	Difformità
	sistemi distributivi	elementi e superfici	unità tipologiche	caratteristiche impianto
PRECONDIZIONI				
Prossimità altri istituti scolastici	✔	✔	✔	
Prossimità attrezzature collettive				
Prossimità spazi pubblici e emergenze		✔	✔	✔
Spazi interni ed esterni recuperabili			✔	✔

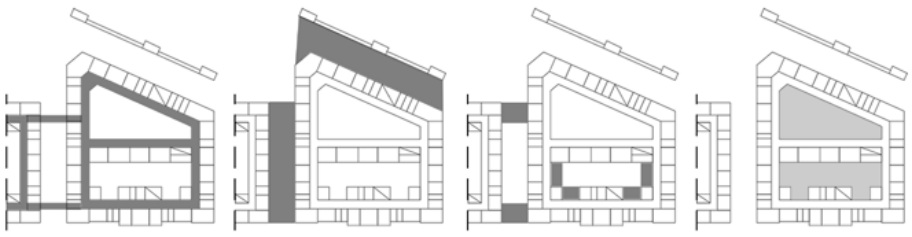
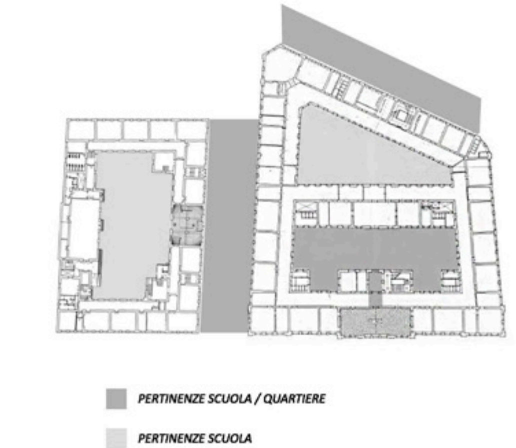
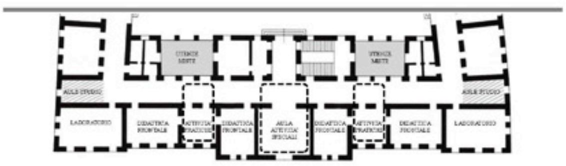


Figure 4.

Dai risultati schematizzati della matrice compositiva emergono diverse possibilità di intervento sull'edificio. La verifica ripetuta di diverse precondizioni pone l'attenzione su quegli ambiti dove è più probabile lo sviluppo di un intervento. La vicinanza della Regina Elena e la presenza nello stesso edificio di altri due scuole di primo e secondo grado rendono valida l'ipotesi di mettere in relazione i vari istituti tramite la riapertura e creazione di percorsi che colleghino gli spazi comuni delle corti insieme alle quali le nuove pertinenze, acquisite dalla chiusura di via Puglie e dalla pedonalizzazione di via Campania, serviranno a creare una rete di ambiti diversamente specializzati a servizio delle scuole e delle utenze di quartiere. Gli interventi programmati prevedono: la trasformazione del tratto di via Puglie in una corte interna delimitata dai fronti esistenti e da due testate che realizzano la continuità dei distributivi impiegando l'elemento tipologico dell'unità blocco; di isolare il tratto di strada a nord compreso tra l'edificio e la preesistenza delle mura aureliane, perché sia pertinenza esclusiva dell'istituto sulla cui strada ha accesso; di intervenire sulla corte del liceo Tasso, operando un completamento degli interstizi collocandovi spazi non specializzati a servizio dell'attività didattica accessibili dal distributivo esistente e proteggendo con una copertura trasparente il vuoto della corte rafforzandone così il valore della centralità dello spazio.





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Architecture in motion. Hinged spaces for future cities

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Keywords: *variation, syncretism, reclaiming, urban fluidity, human perception*

Contemporary society is an overcharged information system. Technological advances and the mechanization of construction and design practice deeply changed global culture. The issue of the identity of the city and the gradual loose of interaction between the mankind and the urban realm compel architecture and urban planning to wonder about their final purpose.

The city, as well as the universe, is a reality in a continuous state of flux (1). The interpretation methods of urban tissue and the envisioning process of future cities might consider Le Corbusier's idea of rhythm, related to his reading of the Acropolis of Athens (2), as a very current topic.

The early definition of syncretism, introduced by Plutarco to describe the Cretan alliance, suggests reflections on the essence of architecture and stimulates interesting considerations on the role of ideology in those disciplines which deal with urban, environmental and social health (3).

Several cases study disclose that the positive effects of the reclaiming of built spaces are connected to the capacity of architecture and urban planning to consider the principles of variation, permeability and interaction. The MAXXI Museum in Rome by Zaha Hadid and the StoreFront for Art and Architecture in New York City by Steven Holl (4) represent two different interpretations of urban fluidity.

The main challenge for architecture could be to stop claiming space for a self-exhibition. Reconsidering the value of human perception to rebuild the urban phenomenology and create spaces that offer a thrilling social experience might open our minds towards new horizons.

Introduction

Contemporary society is an overcharged information system. Technological advances and the automation of construction and design practice deeply changed global culture. Even though the advantages of an easier everyday life are almost evident, it might be noticed that the uncontrolled hi-tech growth generates a harmful process for the environment and the collectivity.

The phenomenon of dissociation of personality that we inherited from the second post war period has been rapidly increasing. The hard rift between the intellect and the emotion seems to be far from being resorbed. The tendency of using technology in the attempt to take care of the illnesses of the city might give way to an opposite action of damage creating doubt, anxiety and fear.

The interpretation of the second half of XX century by S. Giedion and the statements expressed by Barry Popkin in explaining why "the world is fat" show interesting analogies. Although they start from different points of view, the results of their researches highlight physical and psychic diseases of our community showing an overall alarming state of health. We are gradually moving into a post human reality where the distinction between human and non-human is blurred and mechanization appears as a supreme asset .

In the second half of XIX century the medical treatment of sicknesses as tuberculosis and lunacy corresponded with the advent of Modernism. Since the birth of first Sanatoria in The Netherlands and the construction of massive housing estates, architecture had been seeking to interpret the needs of the post-war society, which was ravaged both on social and environmental side. The makings of new materials and the necessity of thickening the urban tissue of industrial areas scarred the architectural production of that period.

Similar circumstances affect contemporary reality. The urgency of reducing global warming, the demands for strengthen the recourse to renewable energies, the growth of pollution constrain architecture and urban planning to avoid ambiguity in dealing with sustainability.

Urban landscape has profoundly changed during last decades. Skylines look like competitors during a gasping race to the top while the conditions of suburbs highlight the inefficacy of current construction strategies.

The city, as well as the universe, stands in a continuous state of flux. In a reality that is highly influenced by the Internet, the risk of producing ephemeral contents is tangible. The harmful effects of industrial development involve every kind of knowledge.

Nowadays architecture seems to be focused on hyper-technological built systems. This trend points out the tendency to conceive this discipline a mechanized imposition that is not capable to take into account both the scale of the individual and the natural dimension. The value of the experience in the process of revitalization of built spaces appears as not yet completely recognized. The issue of the identity of the city and the gradual loss of interaction between the mankind and the urban realm compel architecture, urban planning and landscape architecture to wonder about their ultimate scope.

Methodology

Rebuilding urban phenomenology.

This contribution seeks to underline the importance of architectural and urban design in contemporary society. The eyes explore the urban realm as a set of streets, landscape and buildings. The arrangement of built and unbuilt volumes ought to express coherent proportions in order to transmit coordinated sensations to the brain and give an intense pleasure to the soul.

In this sense, the interpretation methods of constructed spaces and the envisioning process of future cities might deal with Le Corbusier's idea of rhythm, which is related to his reading of the Acropolis of Athens , as a very current topic. The project for the Palace

of the League of Nation in Geneva (figure 1), presented by the Swiss-French architect in 1927, suggests an original idea of urban phenomenology that is focused on human perception.

The city may be visualized as a dam that contains, embanks, sluices and finally spills the space giving to it a solid shape . Providing active public areas that interact with civic and private buildings could lead to the creation of healthier urbanisms where the dimension of the individual constitutes the main value.

Several case studies disclose that the positive effects of the regeneration of built spaces are connected to the capacity of architecture to take into consideration the principles of variation, permeability and interaction.

The MAXXI Museum in Rome by Zaha Hadid and the StoreFront for Art and Architecture in New York City by Steven Holl represent two different interpretations of urban fluidity. The project for the MAXXI Museum (figure 2) might be considered a model of integration of new buildings into context with cultural and historic importance. The intertwining of the overlapping wings generates inner and exterior powerful spaces. Zaha Hadid's work succeeds in creating manifold areas of interaction by connecting the whole block in all directions. The fluency of shape and the contrast between the light and the heavy are clearly perceptible everywhere, from the external atrium to the hall. The idea of fluidity pervades the entire building. The ability of going beyond the visible and establishing an emotional connection with the mankind makes the MAXXI an example of both landscape and social renewal.

The Storefront for Art & Architecture by Steven Holl (figure 3) discloses that architectural design is capable to stimulate changes on the urban scale despite low-budget conditions . The project moves from the idea to reply to the debate about deconstructivism through the experimentation of hinged spaces. Rather than modify the geometries that remain static in the construction, the same geometries move engendering spatial experiences that change in parallax. The front of the art gallery, which is located at the crossroads of the districts of China Town, Little Italy and Soho, is envisioned as an interactive element made up of hinged walls that rotate around both the axis and convert into benches and tables. The frontage embodies the concept of variation and flexibility: it can serve as the classical front shop when it is closed, while it interacts with the urban dynamics and brings the art in the street, when it is open. This space succeeds in changing its configuration to adapt to the fickle circumstances of the city life through its façade.

Results

Urban dynamics as flux of centrifuge forces.

Several cases of architectural and landscape regeneration that are able to support the reconciliation between the emotional and the intellectual sections of the mankind may be considered an efficient method to face the issues of social and environmental sustainability.

We could attribute to urban structure the qualities of human body. Our organism works as a system of centrifuge forces where the brain is the receiver and the transmitter of signals, which convert into actions through a flux of nervous propagation. In the same way, architectural and urban revitalization projects act as catalyst agent for positive forces and promote social changes. Buildings, public and private spaces, which succeed in merging programs, morphology and landscape with light and matter, could engender multisensory experiences and trigger physical and emotional re-activation mechanisms.

This article should not be considered a report that provide for a therapeutic treatment for the city. It aims to engage the issues of contemporary reality by reflecting on the importance of architecture and highlighting the successful experiences of urban reclaiming.

The constitution of the "Academy of Neuroscience for Architecture" in San Diego, California, the introduction of neuroscience studies in the faculty of Architecture of the University of Arizona, Tucson, Arizona and in the New School of Architecture + Design in San

Diego, California, demonstrate the growing interest in the inter-disciplinary connection between architecture and neurobiology.

The case study of MAXXI in Rome shows how architecture and landscape renewal processes that provide deep changes of urban dynamics are capable to improve the quality of life of communities. Taking into account the opportunity of creating lively public areas through hinged spaces, whether in large or in small systems, could be the most productive way to deal with the issue of the identity of the city. It may be evaluated the opportunity of improving the structure of metropolitan and peripheral areas through clever interventions of regeneration so as to build a new urban phenomenology both on the micro and the macro scale. Providing public policies that attempt to trigger a ripple effect with the aim of restoring abandoned and degraded public spaces might represent the key strategy for the construction of future cities.

Conclusion

The word syncretism was originally introduced by Plutarco to describe Cretans alliance. Despite they used to fight each other, the inhabitants of Crete decided to join forces against the common enemy.

The tangible risk of implosion of the city and the evident decay of peri-urban areas induce reflections on the role of ideology in those disciplines that deal with environmental and social well-being. Considering the state of health of contemporary cities, questioning the importance of theory in architecture and urban planning appears necessary. Theory is based on predetermined principles and, consequently, it is anchored to ideology. During recent decades the self-referential attitude of architectural production has been causing a deep rift in the urban tissue: the city has lost its identity and several parts of it have been relegated in a dangerous state of quarantine.

Worldwide scientific researches disclose that the universe exists in a perpetual condition of relativity. Architecture should be able to interpret this sense of uncertainty and specificity of the world. Architecture ought to represent a hybrid entity, which is linked to circumstances and programs that merge with morphology, climate and landscape. The ever-growing phenomenon of pollution and the exaggerated density of urban realm compel architects to develop the faculty of thinking by envisioning spatial configurations capable of interpret cultural and environmental needs so as to trigger virtuous cycle of social interaction, landscape preservation, physical and psychic health phenomena.

Architecture, urban planning and landscape architecture must get out of theoretical constraints and stop claiming space for a self-exhibition. Creating spaces that offer thrilling experiences and reconsidering the value of human perception in city dynamics might open our minds towards new horizons.

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The urban form as 'variation of identity' in a city

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The essay aims to reflect, through same examples, on the way in which the urban form of a Western city reacts following the project of a mosque with a forced position.

Starting from the analysis of some case studies, such as the "East London Mosque" or the "Mosque and Muslim Institute" in Paris, located in a consolidated urban structure and the "Islamic center" of Washington in a different urban condition, open to nature, are proposed two projects of mosques in Naples, one in the historic center of the city, close behind to the coast line and another in the center of Barra, the eastern suburbs of Naples in a razionalist social housing.

About building an islamic center inside European cities, the first operation concerns the rotation of the prayer hall according to the orientation of the quibla (direction in arabic) to Mecca, compared to the surrounding urban structure that has a very different morphology.

So the mosque building, which in the East carries with it pieces of urban structure, for the annexation of the market, Koranic school, etc., could constitute, through a rethinking of the type, because of the updating of the rite, together the obliged position that remains indifferent to the 'rules' of the western block, in its own way, in the West, in the consolidated urban structure of the city, a possible 'variation of identity' of the form, or finding a location outside the consolidated city, recovering the possibility of to defining other spatiality, offering further opportunities to relate with others, more recent, settlement principles, in an idea of an open city.

We live in an era in which we live in cities where the coexistence of different cultures and different ethnic groups has challenged and expanded our concept of 'identity', relativizing the fact that the profession of a 'creed' is to be circumscribed to specific geographical boundaries. There is a lot of East in the West and a lot of West in the East so much that belonging to one or the other side of the world is today to be ascribed solely to cultural and religious reasons, as it may almost forget that it is undoubtedly a West and an East. Faced with the increasingly frequent presence of Islamic communities in Western countries, there is a need to respond by constructing adequate spaces for the Muslim rite and consequently questions how to design a mosque in the West.

Mosques everywhere the world adhere to the ontological rule that the prayer hall should be oriented towards Mecca. For this reason is necessary to rotate the building of the mosque according to the sacred direction; this entails a critical relationship between the mosque form and the surrounding forms of the city. Most of the studies on the design of a mosque in the West talks about the 'urban mosque' as a new typology now consolidated in Europe and in America but these studies address the issue with particular regard to sociological aspects and very little addressed to the problem of the typology and of the form that instead, for who look at architecture as a composition, it may be of great interest to approach the question by looking at the design of a mosque as a figure that rotates within a system of more or less ordered shapes according to the urban morphology in which it is built and where in some cases it can become the exception of a rule.

From the typological point of view, the archetypal condition of the mosque building is an enclosure with a Aula inside that derives from the model of the House of Muhammad in Medina; the space of

this Aula can be an undivided space covered by a dome, or instead be 'occupied' by the succession of columns and therefore to be in this case a hypostyle hall.

In analyzing the typological transformation that the mosque building has undergone over time, it is convenient to consider the types, assuming the theories of Carlos Martí Arís, as "elementary architectural structures, irreducible cores that constitute the ultimate level of structural analysis, because beyond the type we can identify elements and relationships separately, but we can no longer speak of a complex of connected elements that form an architectural structure.

When we speak of the basilical, central, hypostyle, peripteral, cloistered type etc., we define elementary structures, conceptualized forms that possess a definite identity, and which can also interact with each other, generating more complex structures. Numerous architectural works can be analyzed as the result of the application of certain transformation operations starting from one or more elementary structures. These different operations - juxtaposition, combination, overlap, inversion and variation - represent the basic tools of the project. In this way, in architecture, as in any human activity, only starting from the elementary components can we explain the complexity of the result"[1].

The operations mentioned by Martí Arís, juxtaposition, combination, overlap, inversion and variation are "ways" of composing, whose procedures are directly responsible for the project of a mosque in the West and beyond; if we think about building an Islamic center within our European cities, the first thing we have to deal with is, for example, the rotation operation of the prayer hall according to the orientation of the quibla (direction in Arabic) towards Mecca, compared to the surrounding urban fabric that has a completely different morphology. So the mosque building, which in the East brought with it pieces of fabric, for the annexation of the market, Koranic school, etc., could, due to the obliged position that remains indifferent to the 'rules' of the western block, constitute in its own way, in the West, in the consolidated urban fabric of the city, a possible 'variation of identity' of the form, or finding a place outside the consolidated urban structure, recovering the possibility of building other spatiality, offering further opportunities to relate with others, more recent, settlement principles, in an idea of an 'open city'.

1 Martí Arís, C. (1993) 'Il tipo come struttura elementare' in *Le variazioni dell'identità. Il tipo in architettura*, (Clup, Milano) 115.

Three case studies: "Mosque and Muslim Institute" in Paris, "The East London Mosque & London Muslim Centre" and the "London Central Mosque".

Some case studies of western mosques are proposed here to make some observations on the topic: "Mosque and Muslim Institute" in Paris, "The East London Mosque & London Muslim Centre" and the "London Central Mosque" in a different urban condition.

"Mosque and Muslim Institute" in Paris occupies half a block in the city center, opposite the National Museum of Natural History on an area where was the ancient 'Hospital of Piety'. The mosque building adopts an enclosure as a plate to attest to the three streets of the isolated portion that occupies and resolving within the enclosure the rotation of the prayer hall.

"The East London Mosque & London Muslim Center" is located north of the River Thames, in a lot within a block for commercial use. In this case, the prayer hall rotates 'nesting' between the buildings of the Islamic center, which includes severals uses, a madrasa, a nursery school, an elementary and middle school, a high school, a fitness center, a small Islamic library, a radio station, commercial units and offices; a complexity of volumes that completely saturate the portion of the block in which the Islamic center stands.

The third and final case study is the "London Central Mosque" where the urban condition is different; in an area immersed in nature, near Regent's Park, far from the most rigid urban fabric of the city center, the mosque building, a large wall-building that determines a rectangular enclosure with a Aula on one side, rotates everything according the lay of Mecca.

What interests to discuss whit this paper is on the spatial connotation of the urban condition. We have seen that the first two cases, the mosque building is always built through an enclosure with an Aula inside, where however the Aula and enclosure do not seem more distinct except for the fact that the volume of the Aula emerges in height. If we thought then to do an urban analysis by drawing the *schwarzplan* we would realize that, except the white of the voids that come to be determined by subtraction in the plate-enclosure would be all black, thus losing that relationship of figure-background in the logic of a a composition that could be distinguished by an element that rotates within a regular grid on which the cities of the West are founded. In the third case, in which the urban condition changes, the figure-background relationship also changes, which in this case instead reads the rotation procedure inside a background that, except the space of nature, follows the north-south position . This case is perhaps a missed opportunity to determine a spatial condition of openness to nature towards the nearby park.

Two projects in Naples between city and peripheral area

Two mosque projects are proposed below, one realized on the occasion of the thesis work of the paper's author, in Barra, eastern peripheral area in Naples and the other realized by the co-author of this paper on the occasion of an article for the 'Corriere del Mezzogiorno', an Italian newspaper, in the column "Dieci idee per Napoli" which reflected on the lack of an Islamic building of worship in the city despite the presence of a Muslim community of 50.000 faithful.

The project of an Islamic center in Barra was founded, based on two key principles that are consistent with the Islamic tradition, on the one hand, but also the attempt to establish, in a specific area, a dialogue between the West and Islam, between Christians and Muslims: an attempt translated, in the first instance, by placing the mosque next to the pre-existing Catholic church, on a project by Carlo Cocchia, a neapolitan architect of the twentieth century, in via Egidio Velotti. The founding act of the project is an enclosure, with inside a specialized place that corresponds to the sacred hall having two deposits that derive from the 124 ° rotation angle between Barra and Mecca; the enclosure is then thickened to become a building to define the urban front on Via E. Velotti.

In this street, a longitudinal element, which recalls the length dimension of the residential buildings of the Rione Cavour to which it is aligned, is conceived as the thickening of the wall of the enclosure until it becomes the wall itself, welcoming the functions of the center of Islamic culture - conference hall, library, madrasa, exhibition hall - wanting to represent

the place where it is hoped that knowledge and the meeting between two worlds and two cultures that today often live together in the outskirts of our city can take place. From the compositional point of view one could speak of a 'complex period', in which two different modalities are used to compose this project.

The composition of the buildings follows a paratactic type mode where the Aula, the Islamic center as a 'wall-building', the hypostyle space like 'wall-roof', are juxtaposed to each other and maintain their own autonomy but, in some way , just the element of the wall-enclosure holds together all the parts of the project in a composition that becomes somewhat syntactic in as much as the wall is not only a limit or a trivial conjunction between the parts but is the element of union between the parts themselves.

The second project of a mosque, is collocated in Via Nuova Marina in Naples. It is an integration of typical forms of islamic architecture whit traditional architecture avoiding any type of axiality, at least as regards the direction of orientation toward quibble whit existing urban fabric in Via Nuova Marina in Naples already well compromised in the design of the plan. The building adopts the type to the Aula for the prayer room. On, the sides of the room, according to a progression that relates to the islamic rite of catharsis are collocated the service areas divided by gender, are turned whit a portico towards the shan, the reception courtyard, which is also an outdoor praying place. At the entrance are located the pool of ablutions for the purification of the spirit. A minaret, almost echoing a beacon to the character: it signals the presence of Islam in a city as diverse and cosmopolitan as Naples. Surely we believe that realizing a mosque to Naples would give this city a great chance, an opportunity to boast, at last, a place of cultural exchange, and, above all, of confrontation and dialogue challenging unacceptable segregation, isolation or exclusion and witnessing his condescension to peaceful coexistence.

The design examples presented here represent an attempt, perhaps still unripe, to think of a composition of elements that favors openness, still preserving the idea of an enclosure as an element composed of walls, but not totally closed as in the analyzed case studies.

Conclusions

Are we really sure, then, that a closed spatial condition, all turned inwards, favors integration? Are we sure that placing a mosque next to Arab restaurants and beauty centers does not avoid the ghetto?

As soon as one thinks of the design of a mosque, whether in the East or in the West, immediately after the rotation of the prayer hall towards Mecca, we think about the archetypal idea of the enclosure as a primordial element of separation between an interior and an exterior area with the purpose of sacralizing a space.

But "building a wall - a closed enclosure - around him, the man takes away a portion of space from the hostile space of Nature, makes it his own, places it under his own undisputed dominion [...]. But if, separating himself from *natura naturalis*, hostile, man conquers a safe space, at the same time he loses that relationship of mystical continuity that bound him to nature [...]. Then man, being philosophical and poetic at the same time [...] tries to recover, both literally and symbolically, what he lost. And it incorporates inside the house fragments of open space, courtyards, fragments of nature (the tree, the water, the bird, the wind and the rustling of the leaves) at the same time reality and symbol; and multiplies, makes the interior space varied, rich in space and presence, to make it in some way similar to the spaces of Nature [...] »[2].

Furthermore, whilst, as noted by Attilio Petruccioli «The Arab world of the deserts and steppes of the arid lands of the Arabian peninsula, barricaded in the oasis, developed a double notion of space in its nomadic-sedentary dialectics. This entailed the love for an enclosed and circumscribed landscape, and, at the same time, the idea of a serialized and repetitive architectural forms made of simple elements», dall'altro, prima dell'epoca di Bisanzio, «The Turkish world emerged from the

steppes of Central Asia where the horse is the main working animal; its eye travels as far as

2 Di Domenico, G. (1998), 'L'idea di recinto. Una *lezione*' in *L'idea di recinto. Il recinto come essenza e forma primaria dell'architettura*, (Officina Edizioni, Roma) 8.

the rider can see. Its space is thus open, intolerant to limits and fences»[3].

What we want to support, then, is that there are several spatial and therefore formal conditions of enclosure. The Persian carpet is also an enclosure: the act of unfolding it on the ground corresponds to separating two spaces to sacralize one through boundaries. In this sense, the concept of podium or 'zolla' corresponds to the act, now architectural, of the unfolding of the carpet to sacralize.

We can think, to give some examples, to the ancient Greek city and in particular to the composition of the agora. Some cases of Greek cities based on these principles: the sacred enclosure of Altis in Olympia that collects a series of architectural objects arranged in hierarchical-tense order, or the Asclepeion of Coos, where the enclosure space is 'breaks' in two C-shaped buildings, one rotated with respect to the other and arranged on a sloping ground to form three terraces and at the center of the two C, a series of architectural objects, gradually discover the space of the temple.

So, in the contemporary city, we can think, without renouncing the archetypal concept of fencing to sacralize, the mosque as a building made up of parts that instead of closing, in a single complex establish different relationships between them also because of different urban condition in which it is located and the different orographic condition of the land that houses it? Can we think that a different concept of enclosure, in an idea of 'open city', can at the same time sacralize a place but foster more integration?

Figure 1.

3 Petruccioli, A. (2016), 'Codes and Koranic law in the built tissues of the Mediterranean Arab city' in *Culture mediterranee dell'abitare. Mediterranean housing cultures*, (Clean, Napoli) 24-25.

Figure 2.

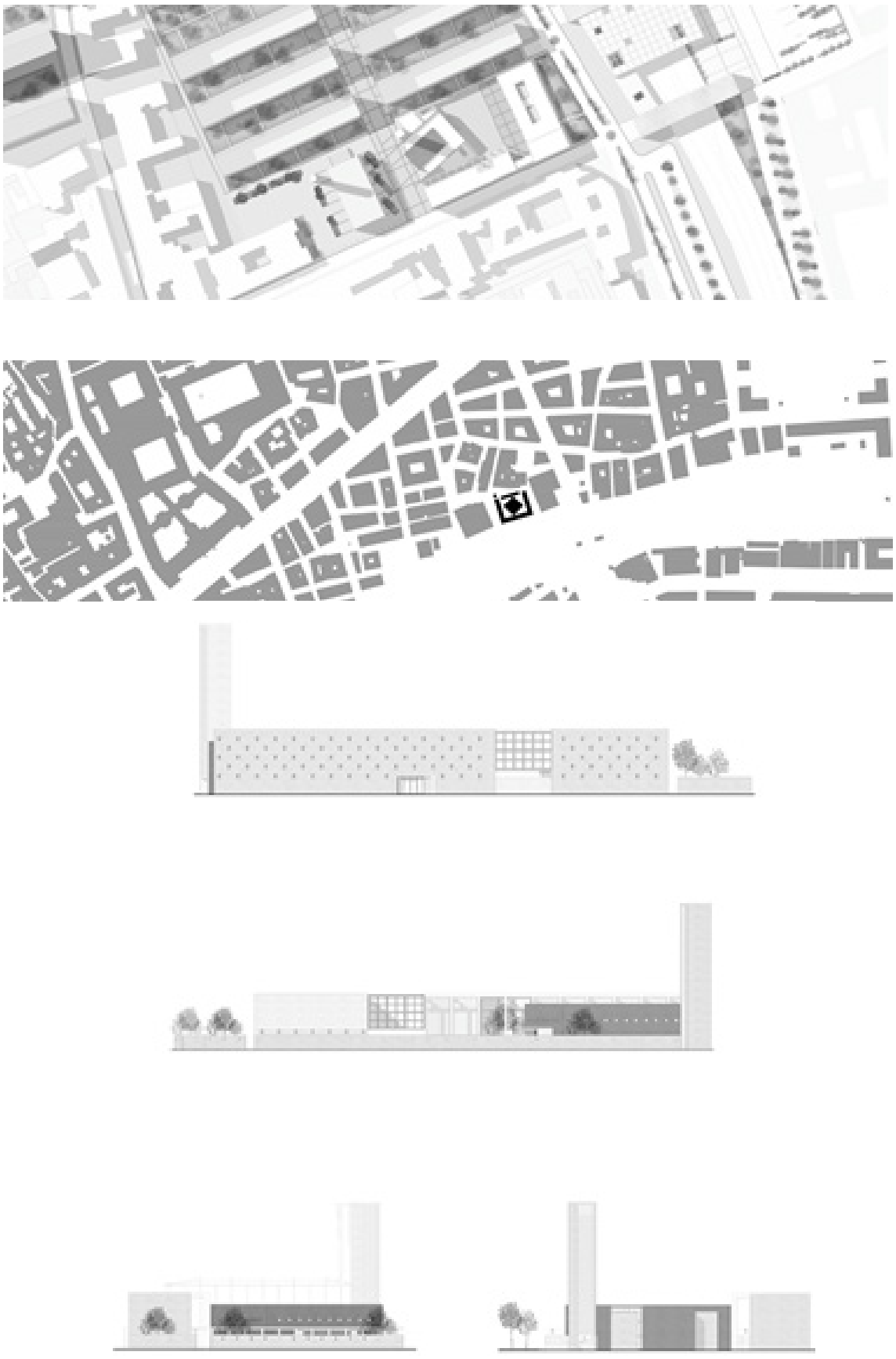
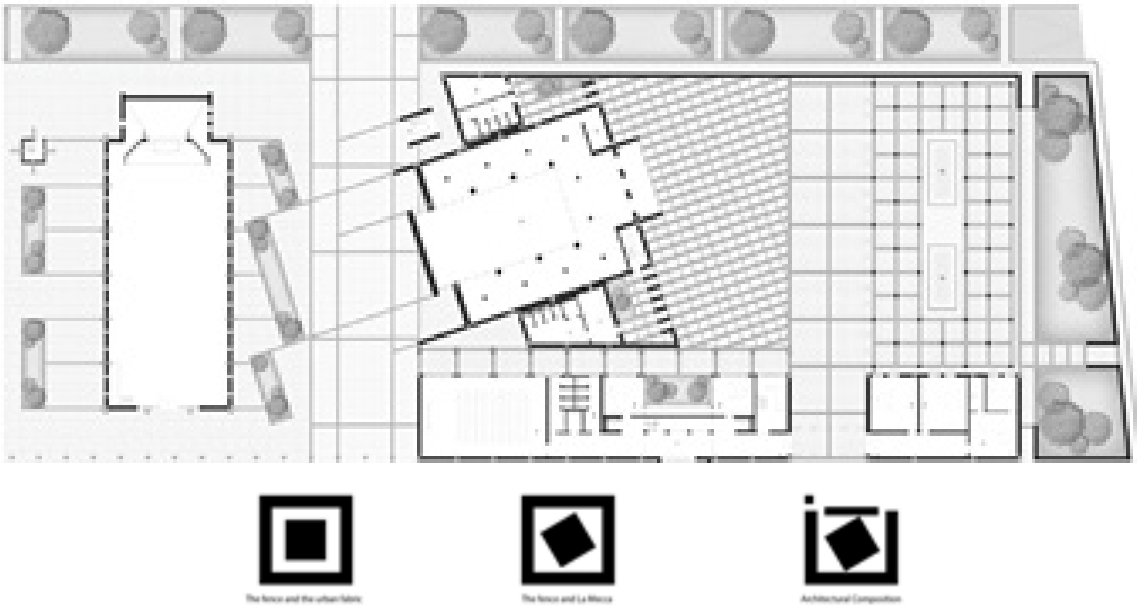


Figure 3.



Future cities between forms of space and forms of time: the urban regeneration case of the De Cuevel site in Amsterdam

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Keywords: *City making, permanent temporality, urban regeneration, community, media*

In the international architectural panorama, where cultures, movements and actions are increasingly hybrid and contaminated by a global language, an element seems to emerge transversally to all the experiments underway: time. Consumption of land and natural disasters, the crisis of the real estate market due to overproduction of buildings and lack of reuse strategies, the ordinary transformations of cities, increasingly alien to urban programs and activated by the social partners, are the great problems that architecture cannot yet give concrete answers.

In Italy, cities and architecture discount the delay in adapting to new conditions of indeterminacy, fluidity and dematerialization, not only of the existential certainties of the modern era, but also of functions and programs, construction techniques and materials technologies. The result is the permanence of elitist practices, far from the needs of the urban populations, requiring ever more space and time for their own lives. Furthermore, the lack of public interest in the city temporary aspects reveals the absence of public policies capable of triggering widespread urban regeneration processes.

The new temporary trials underway in The Netherlands are giving exemplary results, such as the De Cuevel site in Amsterdam and the Pompenburg Park in Rotterdam. Therefore, the forms of cities and buildings of the modern period become temporal algorithms, which synchronize different times, compressing/dilating space according to needs and desires. Finally, the new media will be decisive in determining the demarcation between the space forms of the 20th century and the time forms of the 21st century, which open the way to a new vision of the future, that of temporal city and architecture.

Introduction

There are no cities without visions and there are no "visions of cities" without "visions of society". That is what Paolo Perulli says in a study on the forms of cities from their origins to today, born from spatial concepts such as center, circle, edge, area, emptiness, network. Faced with the melting of the contemporary city, the concepts of center, circle and zone come into crisis, while acquire new sense that of board, understood as a borderline between inclusion and exclusion, that of emptiness, understood as fullness and plurality of space-time, and that of network, considered the archetypal form of the city and its "infinite reproductive and connective capacity". Cities continue to produce forms and establish social relations: space returns to the center of social sciences, while "spatial processes are decisive for interpreting society and its specificities in global space-time" (Perulli, 2009).

After the denial of the city's form of Bergson, who says "there is no form, since the form pertains to that which is immobile while the reality is in motion" (Bergson, 2002), after the declarations-manifesto on the rejection of the formalism by Mies van der Rohe (Pavia, 2013), after the obsession with the future of modernity, the city clearly shows its being "a system of dynamic organization as network that changes in space and in time ", while the form it assumes is that of a "temporary order in constant chaotic movement "(Perulli, 2009).

This change is due both to the awareness that the concept of space is increasingly connected to that of time, almost never influential so far in urban design choices, both to the advent of "liquid modernity" (Bauman, 2003), generated from the information revolution and from the transition from the mechanical-objective paradigm of the industrial society to the informatic-subjective one of the information society, based on the principles of plurifunctionality and integration (Saggio, 2007).

The space/time binomial is joined by the term "information" (Gausa, 2010), determining a more complex relationship between the same terms, which could lead to the overcoming of the dualism of Western culture.

In the transition from the Euclidean geometry of three-dimensional space to the non-Euclidean geometry of multi-dimensional space, which incorporates temporal events into its form, space is transformed into an interconnected network of points, in which interstices digital technologies are installed. An appropriation of the real by the virtual in a new territory is born, in which the physical space continues to exist less and less as a geometric space and increasingly as a phenomenal space. Moreover, the media are undermining the sacred aura of an elitist architecture and are determining the emergence of self-generative forces, capable of initiating an autonomous transformation of the system to which they belong, in which things are closely connected. In the transition from the deconstruction of the Platonic form to the advent of architectural topology, the interest of architectural criticism shifted from Derrida's theory of language to Deleuze's theory of substance, which states that things, before being divided, are united and connected. The mechanisms of everyday life, thanks to digital technologies, tend increasingly to integration and foreshadow the transition from dual thought to a common and global thought, which happens in the space-time of an already four-dimensional world.

This process would also take place in architecture and would be triggered whenever a community succeeds in bringing out their needs and transforming them into new projects, generating from the bottom demands for new spaces and times of life and a more open dialogue with the institutions. The time element, therefore, can represent the new variable capable of managing the interaction between the various levels of reality (Life, Nature, Technology) and recombine them in a more global and human creative synthesis (Pavia, 2015).

Cities and societies at the time of Collaborative Commons and Internet of Things

Theorists of architecture, historians and designers do not give sufficient importance to the socio-economic-technological context in which architecture is built. It seems that these areas do not directly affect architecture, yet the impact of information technology on today's society is generating unpredictable effects until a few years ago, which are radically

changing all areas of life.

The economist Jeremy Rifkin outlines the scenario of the failure of the capitalist economic system, increasingly driven by technological innovation, which today allows the emergence of ancient systems of collaboration. Indeed, Rifkin supports the imminence of the end of capitalism in favor of a new economic model, called "Collaborative Commons".

The Collaborative Commons represents, in reality, the oldest form of social organization in the whole world, the place where billions of people, gathered in associations, foundations and various organizations, have always been committed to the social areas of existence and generate the social capital of the society. What makes this system once again current, however, is the birth of a global technological infrastructure, which connects and optimizes the values and operating principles of social collaboration. In fact, the "value of sharing" is replacing the "exchange value". Collaborative Commons represents a collaborative production model based on common goods and Rifkin claims that the Internet of Things will connect everything to every human being in an integrated global network and will continuously transmit data in real time. This global connection will lead to the "third industrial revolution", which will not only redefine our relationship with machines, but will allow us to overcome capitalism, because the effectiveness of IoT undermines the market system, bringing the cost of production of assets to a marginal value equivalent to zero (Rifkin, 2014).

The affirmation of a new model of economic production, entirely based on the diffusion of knowledge, has been favored by the progressive advancement of new instruments of communication, which is also upsetting the social and political structures of many countries. The society/economy of knowledge, with the progressive replacement of material resources with immaterial ones, is defining new forms of social exchange, but also new social asymmetries that politics, increasingly bound to the logic of economics and finance, does not seem to be more able to manage. The new knowledge ecosystem finds potential opportunities for the democratization of knowledge and cultural processes in the interconnected social economy (Dominici, 2014). The complex architectures supporting the network society confirm and reinforce the concept of "common good" associated with the "knowledge" resource. Projects based on the sharing of knowledge and on a new economic model, based on the culture of cooperation and participation and on "an ethics of gift" are on the rise. Such an ecosystem, which grows according to a horizontal reticular logic, is destined to favor the processes of reducing complexity in the transition to a new phase of modernity, increasingly marked by the increase in disorder and indeterminacy within the systems (Dominici, 2014).

Horizontal vs Vertical

The concept of "creative evolution" finds resonance in the philosophical theories of Gilles Deleuze and Felix Guattari, considered "horizontal thinkers" like Friedrich Nietzsche and his anti-idealist position. According to his thought, essentialism and organicism, being versions of idealism, must deny one or more aspects of life to be coherent, which is why idealism is considered a thought that denies life. Life, instaed, is always irreducible, because it is a totality of differences and not of an identity. An identity can be measured, the difference not and that is why it is considered horizontal. The thoughts of Nietzsche and Deleuze and Guattari lead to the collapse of vertical ontology in favor of the horizontal one: horizontal thinking is the thought of difference and change and opens the way to thinking understood as a "creative act" (Radman, 2014). According to the concept of "rhizome" Deleuze and Guattari conceive a semiotic model opposite to that based on the concept of "tree". The "tree" model presupposes a hierarchy, a center and a linear order of signification, while "the rhizome connects any point with any other point and each of its traits does not necessarily refer to the same genre, bringing in play regimes of very different signs and also states of non-signs "(Deleuze, Guattari, 1980). The six principles that define it (connection, heterogeneity, multiplicity, asignificant rupture, decalcomania and cartography) resemble those at the base of the functioning of the computer network and define what appears as multiplicity, segmentation, stratification, in an antigenealogical and antilinear perspective (Stanziale, 1995) The "theory of substance" by Deleuze and Guattari is based on the concept of rhizome, according to which things, to be divided, must first be united, affirmation that puts into crisis

the dominant dual thought in favor of a common and global thought, which Pierre Levy calls "collective intelligence" (Levy, 2004).

The theories of Deleuze and Guattari, the growing interest in the theory of catastrophes and the new biological theory bring to the foreground the problem of morphogenesis. In the field of dynamic systems theories, Conrad H. Waddington, in his studies on the development of the human embryo, was the first to consider the development process in dynamic terms: "We can still consider the development in terms of solutions of a system of simultaneous differential equations "(Waddington, 1954). He described embryo changes in terms of attractors, bifurcations, open systems, stability, catastrophes and chaos (Waddington, 1957) and was attracted by the self-stabilizing nature of development, which he represented as an "epigenetic landscape", a model dynamic of morphogenesis. This landscape is a developmental scheme in which time advances towards the observer and the depth of the valleys is an indicator of stability: from an undifferentiated initial state, the development of irreversible nature generates hills and valleys of increasing complexity (Waddington, 1977).

On this basis, Esther Thelen and Linda B. Smith, experts in behavioral psychology, have developed a new model of "dynamic epigenetic landscape". They describe self-organizing systems as behavior patterns assembled starting from multiple and heterogeneous components, showing varying degrees of stability and change. The first representation of the model is an adaptation of the "epigenetic landscape" of Waddington, which depicts the behavioral developments of a series of attractors of different evolving and dissolving stability: the first dimension is time, the second dimension (surface) is that of the collective variable, the third is linked to the depth of the variations of the collective variable. The nesting of changes on multiple time scales, one of the critical properties of dynamic systems of development, implies multiple layers of stratified analysis, in which the "epigenetic landscape" is a multilevel system, whose components influence each other in variable ways. The landscapes are layered one on the other, suggesting that the components of the dynamic system themselves have their own dynamics. The arrows that connect the various levels show that the coupling between the components is complex and contingent and can change over time. (Thelen,Smith, 2007).

Space-Time-Information

According to Sanford Kwinter, since time began to function as pure information, morphogenesis and differentiation have become possible and with them concepts such as singularity, discontinuity, events. Time, just because it is information, allows the occurrence of phenomena at great distances, in different temporal domains or at reality scales that react reciprocally. Systems communicate with each other and with themselves, ie with the first or last states of the system, which can now interact with each given moment. This new complex information space is studied by science as chaos. The systems are all open, labile and imbued with temporality, sensitive and chaotic because they are creative and adaptive, always subject to change and generators of novelty. The temporal factor is not only time in itself, but nature understood as a phenomenon that flows, a dynamic system of possible becomings (Kwinter, 2001).

The opening condition is at the basis of the open-ended thinking of "Espacio-Tiempo-Informacion" with which Manuel Gausa defends the new architectural logic of space-time matrix, emerging in contemporary culture. It could be considered a "logic of complexity", focused on the connections between dynamic systems and irregular structures. This would sanction the orientation towards a more open, complex and interactive type of logic, derived from the dynamic encounter between space, time and information. A more sensitive and relational logic in favor of an approach to reality more operational than pragmatic, more relational than objectual, in which the natural is combined with the artificial, the real with the virtual, the systematic with the differential. A new conception of space and time is on the horizon, dynamic and relational, evolutionary and definitively interactive (Gausa, 2010).

In such a scenario, the role that architecture takes in relation to time is not yet easily understandable. It is not yet clear how architecture and architects deal with the concepts of horizontality and openness, evolution and creativity, dynamism and temporality. On the

one hand, architecture "resists contemporary realism", centered on a still predominantly physical-anthropometric vision of human needs. It is precisely its solidity and inertia, its historical enduring, which make time inside architecture ancient and immobile (Leoni, 2001). On the other hand, architects continue to express themselves through absolutes. By not fully recognizing the centrality of the transformations taking place, they do not seem to realize that it is time to be more creative and open to change. Speaking of culture as a "form of life", as the sociologist Scott Lash claims, would be equal to breaking with the previous notions of culture as representation and reflection, with judgment in favor of experience, with epistemology in favor of ontology. Above all, it would be equivalent to separate from the idea of an architect as a genius and demiurge, to promote an alternative morphogenetic approach, more humble and at the same time more ambitious (Radman, 2014). In this approach, the world is also seen as an environment in its relationship with nature, and as an open process in its relationship with technology, more generally as a stratified dynamic system, in which the various levels of reality interact and mutually influence each other.

From forms of space to forms of time

The indiscriminate consumption of the territory and the increasingly frequent natural disasters, the urban market crisis, which has to cope with the problem of overproduction of buildings, and the inability to start reconversion and reuse strategies, the ordinary transformations of cities, increasingly alien to plans and urban programs and activated by the social partners, are the major problems that contemporary architecture is not yet able to give concrete answers. Architecture and cities discount the delay in adapting to a new condition of precariousness, indeterminacy and dematerialization of the existential certainties of the modern era. The architectures that dialogue with time exist, but are often the object of experimentation on large public buildings, which do not always have the power to affect the ordinary production. Architecture, even today, oscillates between two seemingly opposite poles. On the one hand, the concept of architecture as "memory" remains, no longer understood, however, as "foundational point of the path of knowledge, that is the irreplaceable component that breaks through the temporal limits and defines a path of continuity in the transmission of knowledge from a generation to the other without limits "(Conte, 2013), but as a stratagem that in bringing back to life the past destroys the sense of time. On the other hand there is the most recent concept of architecture as an "image", in which the image "is without a past, because it is a totally self-referenced synthesis, and has no future, because it can not be modified and evolved: it can only be replaced by another image "(Leoni, 2001). The result is a condition of incapacity for architecture to disengage from a still essentially elitist practice, often disconnected from the reality and needs of the new urban populations. To this is added an institutional culture still little interested in temporariness, which results in the absence of public policies capable of triggering widespread processes of urban regeneration. It is true that there is an objective difficulty in the products of architecture in transforming their historical solidity into a more flexible and adaptable format in space and time, and this is the challenge that new architectural experiments are already facing, with exemplary results such as in the Netherlands. It is also true, however, that often in Italy there is a frequent inability of citizens to recognize themselves in communities in which to implement actions supported by principles of sharing and collaboration, even if the various experiences demonstrate a growing involvement of local populations.

It is fundamental to understand that the activities and the functions that determined the forms of modern buildings and cities are no longer solely a "surface unit", but become "a temporal algorithm, which synchronizes different times, compresses and expands the space according to needs and desires "(Barbara, 2012). Architecture must have the courage to find new strategies to give buildings other possibilities of life, identifying new time programs to regenerate the existing abandoned architectural heritage, without increasing surfaces and volumes (Inti, Cantaluppi, Persichino, 2014). It must also become aware that, in the continuous and uninterrupted flow of events, the buildings will change their intended uses several times in the course of their existence and at increasingly close intervals. Design can offer solutions only if it is able to provide flexible plants, degrees of indeterminacy of functions, sustainable

materials and a time schedule. Finally, the new media will be decisive in the redesign of the new areas of life of human beings and in determining that demarcation between the forms o space of the twentieth century and those of time of the twenty-first century, which opens the way to a new vision of the future.

From the dream of permanence to the permanent state of change

The approach to the city is still today essentially three-dimensional, yet the city is a four-dimensional phenomenon, which continually dialogues with time and increasingly requires an effort to recognize its influence in design strategies.

If the "network" has always been the archetypal and political form of the city, humanity today experiences the transition to the concept of "technical, aerial, dematerialized network of our global space-time". In bringing the city and all its transactions to disappearance, it decrees the end of the urban economy in favor of that of information. The city loses its shape and becomes information that flows in the space-time of the communicative flows, coagulating around hubs and nodes of the network. In the transition from government to governance, which is the "dialogic self-organization and management of complex networks of languages, interests and actors", the redefinition of the concept of public space as a "basic communication device" between physical spaces and spaces of flows becomes central (Perulli, 2009). The nodes of the network create unprecedented connections and, depending on the events that activate during the day, they are arranged on levels that draw a perceptual map of the urban space-time that is always different, according to the model of the "dynamic epigenetic landscape". The morphology of future cities is increasingly a four-dimensional network of public spaces that integrate with buildings and nature, in which the urban sphere (Life), the natural one (Nature) and the network one (Technology) reach a new synthesis.

In the current world view, however, a "dream of permanence" remains, which does not belong only to power, but to all human beings. It is the desire for stability and continuity, for definitive solutions, for protection from risk and change. Cities and people, however, are dynamic entities and for most of the world's population "permanence is an unattainable dream" and for many reasons, including poverty and economic crisis. While urban contexts push for increasingly rapid and contingent solutions, however, there is still little research into the value of temporary activities. In a historical moment in which resources are scarce, however, it is no longer possible to continue thinking only in terms of long-term solutions. Temporary uses can be a valuable tool for introducing differential and incremental changes in urban strategies, oriented towards more effective management of ordinary events, but also of changing, unexpected and unpredictable ones. Therefore, the temporary city challenges human concerns to long-term plans and strategies, stimulating the equally human ability to find answers in light of limited resources and economic and political uncertainty (Bishop, Lesley, 2012). In Europe, since 1995 research, policies and laws have been launched in the various countries, mainly oriented towards urban regeneration and the temporary reuse of abandoned spaces and buildings. The Dutch cities have fully adhered to pop-up culture, typical of the temporary city: at the base of strategies for urban development and regeneration a widespread thought emerges, according to which urban environments are increasingly subject to pop-up strategies. If, in fact, the term implies the use of a DIY ethic, it is also evident that the latest experiments are more and more professional and involve more and more subjects (Beekmans, De Boer, 2014).

It is relevant the experience of a movement of Amsterdam architects, artists and intellectuals, gathered in the De Gilde group, which in 1998 published the research *Laat 1000 vrijplaatsen bloeien* (Breek, De Graad, 2001) and *De stad als casco* (Staal, 1998). They define hangars and open spaces of the port, abandoned and occupied by artists and citizens, as "sanctuaries" to be safeguarded, while the city is only a "shell", which provides facilities within which end users decide which elements realize in empty buildings, how to manage and finance them. Thanks to this research, the City of Amsterdam establishes the Broedplaatsen fonds/bureau (1991), a front office for projects of temporary reuse of abandoned spaces. The fund of 41 million euros, with the aim of creating two thousand new jobs for artists, artisans,

collectives and cultural entrepreneurs, has allowed to reactivate up to now more than sixty buildings (Inti, Cantaluppi, Persichino, 2014).

Among the most interesting experiments there is NDSM-wharf (2001-2011), a project by Eva De Klerk on the temporary re-use of the NDSM area on the north side of the city. The City of Amsterdam invited the De Gilde group to think of a project with which to allocate buildings and free spaces of the port to places for culture with calmed rents. The Broedplaatsen bureau launched the first public competition of ideas and management for the temporary regeneration of the area, lasting five years, renewable for another five. The competition was an opportunity to test out the results of the research *De stadt als casco*, an alternative theory of urban planning and bottom-up planning, thanks to which around 200 entities have been established in the area concerned, coordinated by the Kinetisch Noord association. which manages the "shell", spaces and areas and invites users to define a time schedule and a financial plan for individual interventions (Inti, Cantaluppi, Persichino, 2014).

The urban regeneration case of the De Ceuvel Site

Ceuvel Volharding is the name of a former shipyard in the north of Amsterdam, decommissioned and unusable due to the strong soil pollution, now recovered and become one of the most sustainable urban development models in Europe, once again active under the name *De Ceuvel*.

The public area has been leased for a ten-year period (2012-2022) with a competition of ideas for the transformation of the site into a multifunctional regenerative urban oasis, banned by the City of Amsterdam and won by a group of designers, led by Space&matter.

The project was financed by the City of Amsterdam through a start-up grant of 250,000 euros and another 200,000 euros bank loan that guaranteed it. With Metabolic and Delva Landscape, Space&matter has drawn up a site recovery plan. Due to the temporary duration of the initiative and the low budget available, the themes of mobility and reuse were fundamental for the general project of an area of 1,250 square meters. Sixteen old boats have been renovated and placed on the ground, connected by a bamboo path, suspended at a height of 90 cm from the ground, and surrounded by plants for soil regeneration. The regeneration process involved planting vegetation in contaminated soil, placing boats, converting them into workplaces, activating social catalysts such as coffee, restaurant and floating bed & breakfast to generate the De Ceuvel community, the return to water of boats at the end of ten years, when they will be removed, leaving a cleaner site and an oasis of greenery. The phases of the process have had the intent to recover an industrial area and to create a place that sustains itself and produces little waste and, above all, that becomes a fertile ground for social interaction. The challenge, in fact, is to connect energy flows, waste and people in a circular model.

The Metabolic group designed a technical and environmental system for the site, called Cleantech Playground, a decentralized cleantech utility program and a demonstration and test site for new technologies. In the site, solar technologies convert the sun's energy into heat and electricity (more than 150 photovoltaic panels produce about 32,500 kWh annually), while green roofs and water collection systems are designed to collect, purify, and conserve rainwater, and health systems extract energy, nutrients and water from waste for food production on-site. A sensor network also provides information on the performance and behavior of users.

The Delva Landscape group, instaed, is working on the regeneration of soil contaminated by organic and inorganic elements using phytodepuration techniques. These are also allowing the creation of a new habitat and the production of biomass with a low environmental impact, used to produce energy for the use of boats. The innovative method is a replicable example in other urban areas, which can constitute a large-scale network of ecologically, economically and socially sustainable areas (Van't Klooster, 2013).

De Ceuvel represents a new model for urban development, thanks to which decentralized technologies and the complete recycling of local resources will allow urban areas to be self-sufficient. Together with its urban, circular and creative community, it can become the beating heart of new dynamic landscapes, which in Amsterdam and in many other cities

give raise to the forms of time of the future cities.

Conclusion

The main theoretical questions underlying the transition from the society of the industrial age to the society of the information age demonstrate how contemporary cities are increasingly affected by phenomena of discontinuity, instability and dynamism. These phenomena occur mainly in a temporal dimension and emerge thanks to the connections of digital technological networks, which also support the re-emergence of new social practices. In the urban experiments underway, we note the active presence of the social partners gathered in communities, often initiators of the renewal processes, which interact with designers and institutions and enter the design process, thanks to the use of websites, activism platforms and social profiles. In these processes the time factor emerges as a new measure, perception and form of architecture and cities and determines a state of permanent transition, characterized by a condition of 'openness', which conveys information and generates community and participation.

Figure 1. Thelen Smith_Adaptation of Waddington's Epigenetic La_ndscape and Dynamic Epigenetic Landscape.

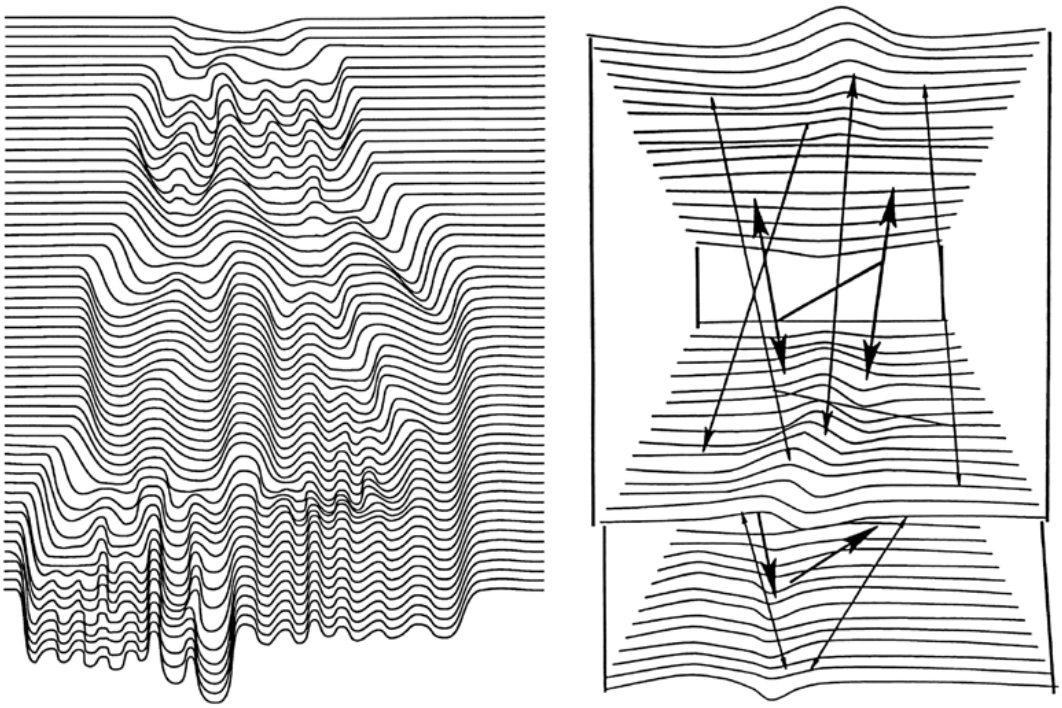
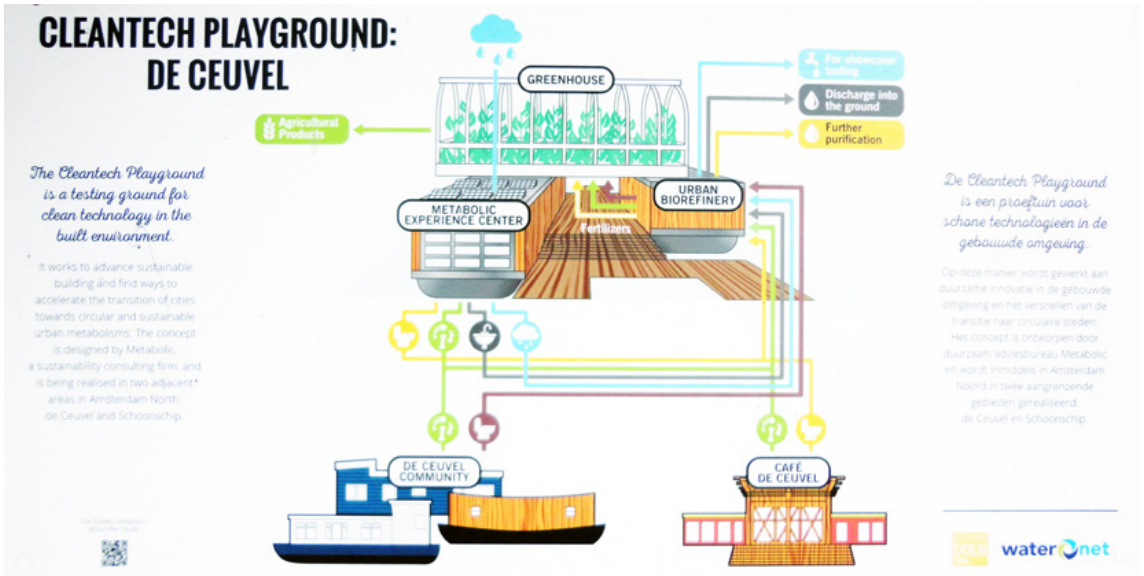


Figure 2. Ships on polluted ground.

Figure 3. De Ceuvel community.

Figure 4. Cleantech Playground System.



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The Interaction between the Geography and Built Environment in Levent Integrated Valley System of Istanbul

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Istanbul is a system of plateaus and valleys in Bosphorus Topographic Structure. Among these geographical formations, Levent Plateau as a part of "Levent integrated valley system" is striking in terms of the spatial change and transformation it went through and is thus the subject matter of this study. It is evident that through an extended time frame Levent plateau was subjected to substantial spatial change through large-scale housing projects, and new plan revisions thereof in particular. These interventions all but defaced the integrated valley system.

Based on this discourse, the present study discusses the equilibrium of the urban system (McHarg, 1969) through the background of the coexistence of the basic components of topography and ecology, and human interventions. Starting with the new millennium, Levent Plateau faced with rapid urbanization, which led to the covering of natural stream beds and construction efforts in the valleys which had previously separated neighborhoods from one another. All these amount to a structural change which can be summarized as the disintegration of the integrated valley system as the continuity of the ecological systems was disrupted.

In the study, the potentials embedded in the urban system are identified with reference to the metabolic approach (Ibanez, Katsikis, 2014), which defines the city as an ecological system, while morphological analysis (Oliveira, 2016) is employed to assess the structural changes noted above. The tools employed for spatial analysis include the comparison of aerial photographs –old and new–, plans, existing and historical maps,

Through these efforts, the study discusses the interactions between the potentials offered by the topographic and ecologic systems of Levent integrated valley system, and the planning decisions and the existing built environment, and comes up with design principles applicable to future projects to be implemented.

Introduction

Istanbul is a system of plateaus and valleys on the Bosphorus Topographic Structure. Among these geographical formations, Levent Plateau, as part of the "Levent Integrated Valley System" (Levent IVS) have an important place in terms of the spatial change. Based on this discourse, the present study discusses the equilibrium of the urban system against the background of the coexistence of the basic components of topography and ecology, and human interventions. Starting with the new millennium, Levent area (consists of plateaus and valleys) was faced with rapid urbanization. The destruction of the valley system which had previously connecting neighborhood unites, affected the structural integrity of the urban pattern. All these amount to a structural change which can be summarized as the disintegration of the IVS due to disruption to the continuity of the ecological system.

In this study, present potentials embedded in the urban system are identified with reference to the metabolic approach (Ibanez & Katsikis, 2014), which defines the city as an ecological system, while morphological analysis is employed to assess the structural changes noted above. The study is aiming to discusses the interaction between the potentials offered by the topographic and ecologic systems of the Levent IVS, the planning decisions and the existing built environment and presents design principles applicable to future projects to be implemented in the region.

1. Approaching the Urban System as a Metabolism

A system can be described as a dynamic interaction of elements gathered together for a specific purpose (Odum & Peterson, 1972). All systems, which are distinguished from one another and become diverse by unique qualities, limiters, and the elements that form them as well as the relationships among their sub-systems, are in continuous interaction with their environment and the ecosystems in the upper scale with a concern about disappearing. Starting from the early 20th century, a conceptual background emerged where metropolitanization was studied as a metabolic organization, like biological systems. Geddés and Mumford stated that the understanding of urbanization during that period had created specialized zoning suggestions that were based on the consumption of the Earth's resources and therefore were not sustainable in terms of ecological and social values. Functional approach to urbanization ideology viewed geography as a pragmatist system of connections based on relationships of interest rather than as an ecological whole. The Earth -specific character of geography- became important after World War II, at which point it was clearly necessary to analyse topography and its human settlements as an integrated ecosystem. The sustainability of the city is made possible through the diversity of the ecosystem and its capability to adapt (McHarg, 1971). Urban metabolism should be evaluated along with the tangible elements of topography and the systems that show an ecological integrity rather than flow and relationship networks that are independent from topography. These potentials correspond to the environmental capacity and the limits of cities consciously organised to maintain symbiotic relation between cities and nature (Kurokawa, 1991). Knowles states "Man-made arrangements that lie in balanced response to nature can provide the combined benefit of a trajectory toward stability over the long term and of a continuing diversity essential to choice" (Knowles, 1977).

Any new element added to a city by humans tends to be carried out by destroying and deconstructing a natural or artificial component related to the system defining the urban space (Ibanez & Katsikis, 2014). Considering that the continuity of systems is necessary, and that the continuity of any given system is ensured by the diversity and balance of the elements forming it, every single human intervention in the city should be capable of protecting and maintaining this balance. However, the current morphological structure of rapidly growing urban sprawls shows that the constructed components of the city are dominating and deforming the integrity of natural structure of the urban ecosystem. The idea of todays' metabolic approach to cities which considers urban space as a metabolic organization of urban ecosystem were evolved from the idea of proposing the city as a megastructure in a single form of an architectural product since it was manifested in Japan

at 1960s (Ibanez & Katsikis, 2014). In the argument put forward by Vittorio Gregotti in 1972 regarding the adaptation of the new urbanization model to post-World War European cities, the metabolic approach stepped forward in sense of potential collaboration of architecture and geography (Barrio, Chugh, Léon, 2014). Today, urban metabolism is referring to cities as sustainable ecosystems and focusing on the production and saving of energy. It is described as "the total set of technological and socio-economic processes that serve to ensure development and energy production in cities", as well as city's inputs and outputs, the amounts of energy, water and food in addition to the materials and the amount of waste, and it assists in building a connection between cities and ecosystems (Kennedy, Pincetl, Bunje, 2011).

Land is regarded as a potential area for real estate investments, or as landscape elements that can be used for the "beautification" of the city; however, regaining the natural aspects as well as the conservation, restoration and expansion of these systems was stated in extent of 2017 Urban Agenda for the European Union as the current approach for urbanization. In the *Sustainable Use of Land Nature-base Solutions* report of 2017, importance of efficient and sustainable use of land is emphasized for the creation of compact, liveable and inclusive European cities that are capable of serving everyone. The distribution and the quality of green space within the city may play a key role in achieving a sustainable urbanization and compact city model (Urban Agenda, 2017). This statement consistent with the understanding of urban and nature balance proposed by metabolic approach. This new understanding of urbanization based on controlling the sprawl of cities and densification of urban core relies on two main objectives and potential solutions namely Liveable Compactness and Nature-based Solutions for Urban Areas. In this approach, urban green systems and coastal areas should be protected since they are important in supporting ecosystem services. Hence the importance of green and blue urban infrastructure systems is emphasized as well as ecosystem services (Urban Agenda, 2017).

2. Evaluation of Levent Area as an Integrated Valley System According to the Urban Metabolic Approach

In today's rapid urbanization and transformation processes, the tension between construction and natural systems is increasing. Especially in countries that don't yet have an established urban planning culture, the green areas within the urban pattern are in the risk of losing their qualities and being constructed, due to economic factors which are imposing intensive demand on construction.

Istanbul's Levent area is presenting significant importance with its neighbourhoods unites in sense of questioning the relation of built environment and natural qualifications in today's cities. Therefore, this study is focusing on the Levent area to read the urban space through morphologic analysis based on topographic system, green and blue system and built environment. The aim of the study is to determine the potential of the natural system in the Levent area, which has lost most of its original qualities, and to carry out a reutilization of this potential. Analysis designed within the framework of the metabolic approach, which regards the city as an ecological system, and was subject to a morphological analysis based on the ongoing structural changes. The study discusses the balance of the urban system through the human interventions and the main components of geography within the framework of interventions started to be developed during the new modern housing movement in 1950s. The settlement in Levent displays a proposition of urban pattern that has developed over time through connective elements. The emergence of urban metabolism approach was in the same period with the development of Levent area in relation to the green system designed by Kemal Ahmet Aru and Rebi Gorbon using the "garden-city" approach. This practice and the following housing projects up to the year 1980 can be described as balanced and adaptive examples of the relationship between the urban structure and topography in the Levent area.

The urban voids as corridors directed by flows and movements, granted by the Levent IVS, are remarkable morphological elements, insofar as they both ensure the functional integrity of the city and bring together social relationships. According to this hypothesis, the study

puts forward the deterioration process and danger seen in the IVS using old and new aerial photographs of the areas, plans and existing maps that form the tools of the spatial analysis study. Corresponding spatial analyses are juxtaposed in a grid coordinate system (from A to H, from 1 to 9) to refer the discussions on actual site. In this extent, the study discusses the mutual effects of two types of potential created by the topography and ecological systems in the Levent IVS and the existing built environment of this area. It also explores ways to bring together the topography and green-blue system, and the environment for the purpose of generating inputs for the planning process.

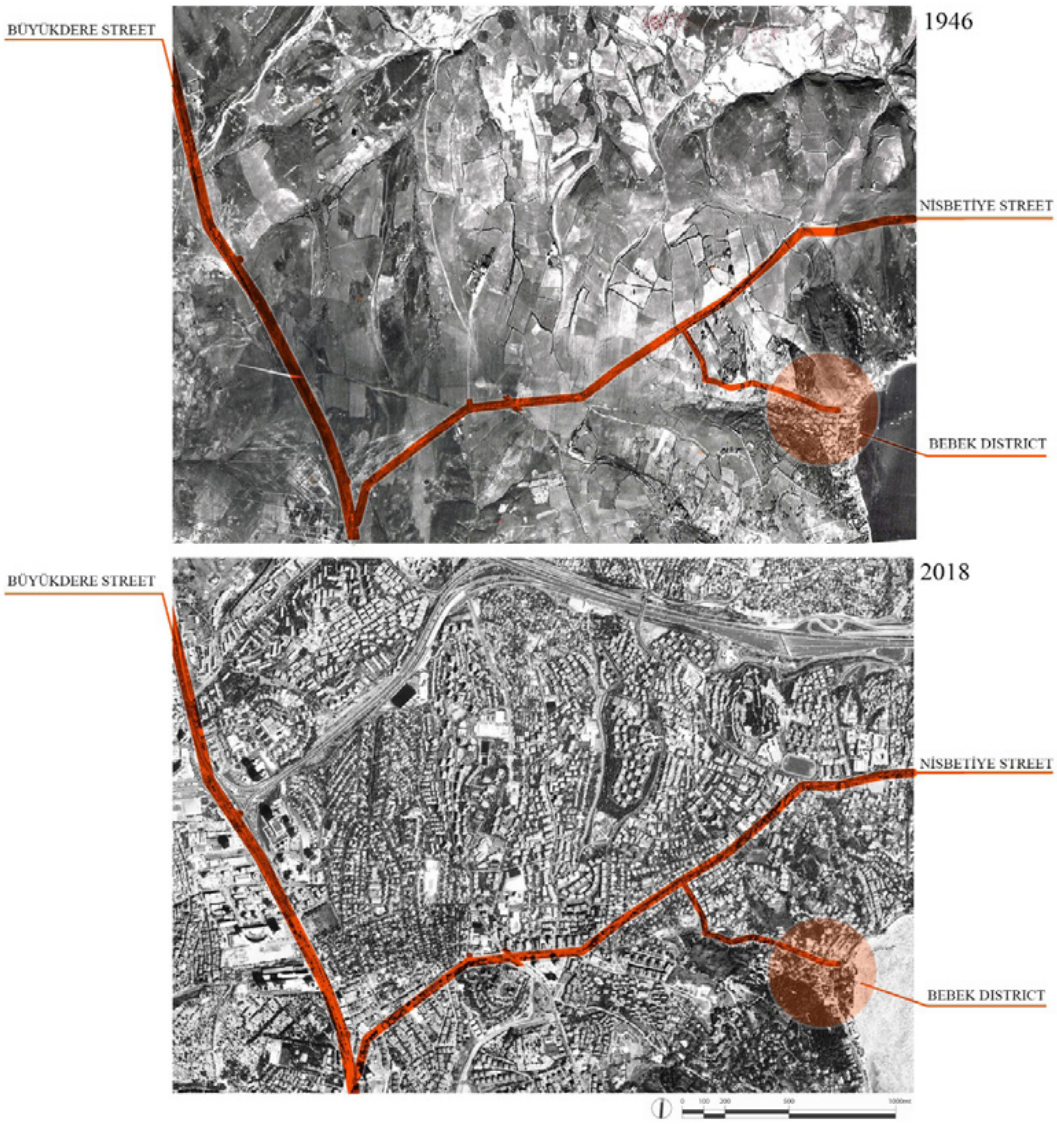
2.1. Levent Area within the Istanbul System of Valleys

The topographic structure of Istanbul is formed of low lying plateaus and hills as well as the valleys that separate them from each other and extend out to the sea (Bosphorus). Within this integrated structure, the Levent Plateau is connecting to the Beyoğlu Plateau which begins from Şişhane on the European side of Istanbul (Yurt Encyclopedia, 1982). It continues towards Maslak-Derbent in North-Northeast direction, spreading in East-West direction between the Baltalimanı and Ortaköy valleys. Until the mid-twentieth century, there were no buildings on the Levent area other than farmhouses, military buildings and pavilions. This area is bounded in the East by Büyükdere Street, which provides the North-South connection of the city, as well as TEM (Transit European Motorway) and bridge service road junction in the North and South, and the D-100 land route. In the east, the area opens to the Bosphorus which functions as the spine of the city's blue system. Evaluation of the spatial change in the area shows that a geography which was not a subject of urban construction became constructed in time by means of neighbourhood projects and large-scale housing projects, urban development plans, and then plan changes and revisions in parcel scale. It was determined that the IVS, which had previously characterized the area and gave it its identity, became almost impossible to read spatially as a result of these interventions.

2.2. The Spatial Development of Levent Area in Historical Process

In the 1946 aerial photograph, the urban pattern of the area can be seen as being mainly agricultural between the Bosphorus and Büyükdere axis, which provided the North-South connection of the city. In the 2018 aerial photograph, however, this agricultural character totally disappears, having been transformed into an urban pattern. It can still be argued that the preservation of the natural qualities of certain valleys was an important determinant in describing urban sub-identity areas. In the 1946 aerial photograph, the traces of the natural structure are the determinants of the formation of the built environment. Yet, in the 2018 photograph, the traces of natural and agricultural qualifications (e.g. large agricultural parcels, farm areas, streams), as well as the coppice forests which involved significant natural characteristics of the Bosphorus, the pavilion gardens, the cemeteries had been destroyed and lost their integrity, leaving nothing more than partially readable traces. It is therefore necessary to identify these qualities and to re-evaluate the relationship between the elements of the city and the topography (Figure 1).

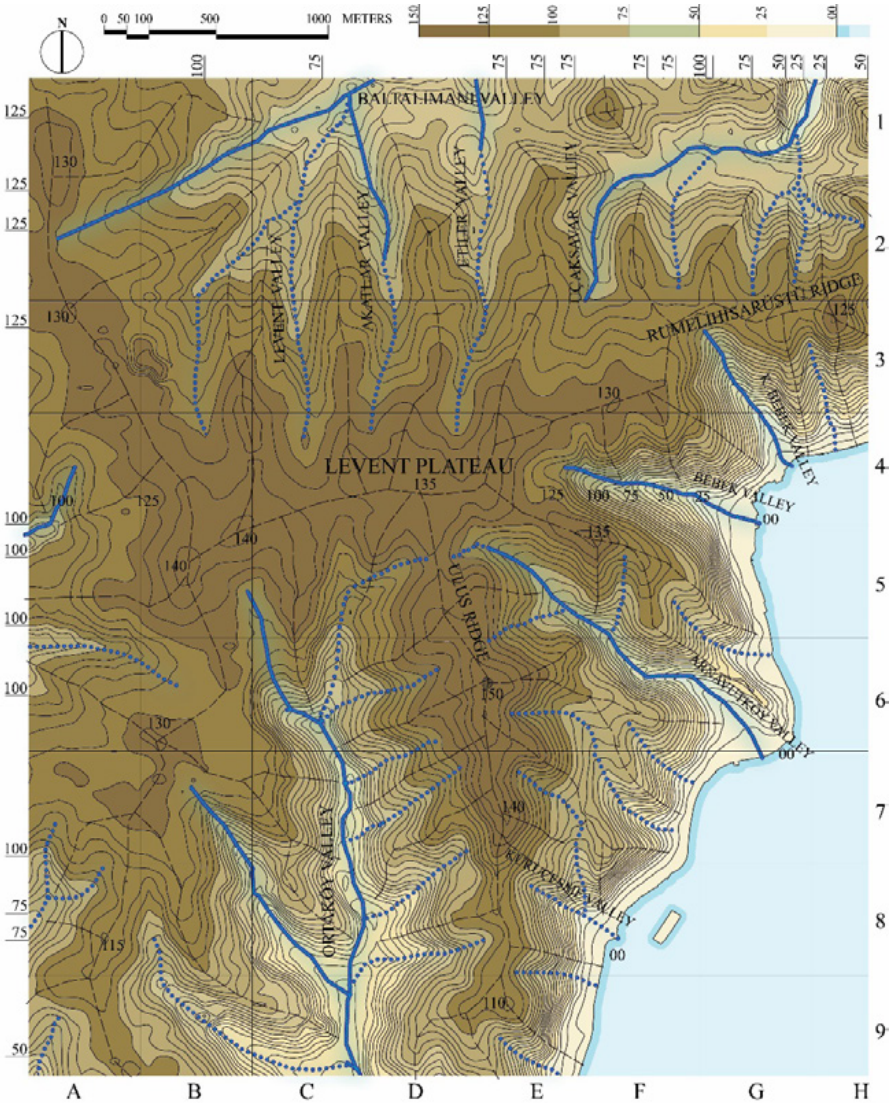
Figure 1. Levent Area and its vicinity in 1946 and 2018 aerial photographs *(Source: Istanbul Metropolitan Municipality photograph archive, 2018 access)* .



2.3. The Relationship Between the Blue System and Topography in the Levent Area

The Levent IVS consists of Baltalimanı Valley, which rises up to 140 m. level from the sea level in addition to Küçük Bebek Valley, Bebek Valley, Arnavutköy Valley, Kuruçeşme Valley, Ortaköy Valley, and finally the Levent Plateau that lies following the crest line between 125 m. level and 150 m. level. Each valley that forms the IVS appeared as an ecological system guided and connected to the Bosphorus Which can be defined as the spine of Istanbul's blue system. The relationship between water and these ecological sub-systems, which were fed by stream beds, was interrupted by the transformation of stream beds into concrete drainage canals. The ecological systems that ran along the valley were shattered and turned into ecological islands that become lost among the constructed city blocks. It's possible to define that the water and wind flow in the area, the ecological system fed by this flow, were interrupted by the breaking of the balance between ecosystems and ecological islands. These green islands that had been fragmented and lost within the urban pattern now exist as a park area between the Etiler (Figure 2; E2) and Akatlar Valleys (D2) and as a green space in Ortaköy Valley (C6 to C9) which is not in use.

Figure 2. Topographic structure and the Blue system of Levent Area.



The Levent area, rich in water resources, features dry stream beds, streams and ground water resources accessed by wells. Before the Taksim-Maslak water line which were feeding the old city center was completed, the water requirement of the Beyoğlu area used to be supplied through water canals from the Levent area (Mustafa Cezar, 1991). Topographic analyses showing the riverbed traces defines the network of blue system which is the fundamental characteristic of the IVS. These traces are in the focus of the study in questioning the balance between construction and nature as a starting point for the metabolic discussion. The area with a relatively low-angle slopes, lying between the crest lines separating the stream beds and 130m-140m levels forming Levent Plateau (Figure 2) continues in both North and South directions. This topographic formation offers a complete view of the Bosphorus and appropriate qualities for settlement. Evaluation of topographic maps dating back to first quarter of the 20th century shows that topographic formation of the valley system is deformed through highway constructions and housing settlements mostly in the Baltalimanı (Figure 2; C1 to H1) and Ortaköy Valleys which are the main corridors connecting small valleys to Bosphorus. Almost all the stream beds had been transformed into open and closed concrete drainage canals (Dinç, Bölen, 2014) which were unique ecologic qualities of the valley system. Todays' some of the main transportation arteries passing through the basins

are built on those streams beds.

2.4. The Relationship Between the Road Pattern and Topography in the Levent Area

Büyükdere Street (Figure 3; A1 to A9), which forms the western border of the area is one of the main central business district connecting the city center to the northern part of Istanbul. The Levent area was always the focus of housing projects because of its unique location in between two bridges connecting Europe and Asia. The construction demand on the Levent area increased with the construction of high-rise office buildings on Büyükdere Street after 1990s. Nispetiye Street (Figure 3; A5 to H2) which begins from Büyükdere Street and lies towards the East through the plateau following the crest line forms the spine of the road pattern. This main road following the topographic traces along the crest line, is attached to the South with the Küçük Bebek (Figure 3; G4), Bebek (F4, G4), Kuruçeşme Valleys (E8, F8), Ortaköy Valley (C6 to C9) and to the North with the roads to Baltalimanı Valley (C1 to H1). These attachments allow the street to be connected with the coast settlements lying along the Bosphorus. Analysis on the relation of road pattern with the topographic formation shows that despite of the penetration of new add roads in to valleys, road pattern hierarchy is consistent with topographic features. The primary broad axes following the ridge traces are connect to secondary neighbourhood roads as they continue to the lower levels. This system defines the road networks and its sub-systems that clustered on the slopes of the ridges forming a tentacle type urban pattern. Recently, this formation has begun to deteriorate after the building of road attachments in the inner parts of valleys, which is in contrast with the former structure of the road pattern. This situation is consistent with the transformation of stream beds into closed canals and roads.

TEM Highway (Figure 3; A3 to H1) which forms the northern border of the area, cuts the connection between Baltalimanı valley and the sub-valleys that define the Levent, Akatlar, Etiler, Uçaksavar, and Rumeli Hisarüstü neighborhoods, and that are located in the north of Nispetiye Street. The road hierarchy that forms the current system deteriorated with the opening of new arterial roads [Tepecik Road (Figure 3; E4 to E2) - TEM - Levent connection (F1)] that connect to highways by passing through the secondary neighbourhood roads; this deterioration led to the transformation of local neighborhood roads into highways connections. It is possible to say that the road hierarchy is collapsed with these interventions and also the neighbourhood units are in the risk of losing their integrity.

On the south side of the Nispetiye Street, one of the significant deformation observed in the topographic formation is in the Ortaköy Valley. The new road connecting Nispetiye Street to Zincirlikuyu (Figure 3, B5) passes by the Valley with landfill and blocks the continuity of topographic features.

Figure 3. The Relationship Between the Road Pattern, Building Pattern and Topography in the Levent Area.

2.5. The Relationship Between Building Pattern and Topography in the Levent Area

The urban formation in the Levent area between 1950s and 1980s is the first period of housing settlement pattern which can be described as neighbourhood projects, designed in modernist principles and built in large plots of former farm lands. The formation of the housing clusters in this period is compatible with the topology with minimum intervention into the natural morphological structure. They are located on ridges and hillsides rather than expanding through the inner areas of valleys. These valleys are separating housing clusters from each other and form compact, liveable and characteristic urban patterns such as Levent (Figure 3; C3, C4, D3, D4), Akatlar (D3, D4), Etiler (E2 to E4), Uçaksavar (F2, F3) and Rumeli Hisarüstü (G2, H2) neighbourhoods. Hence, it's possible to say that valleys in between neighbourhoods are articulation spaces, functioning as permittable separators, connecting the urban pattern.

In the second period, after 1980s, which can be defined as the period of the gated communities, it is seen that the housing projects built in the previous period started to be

surrounded by high walls and segregated from the urban system, causing fragmentation of valleys. Although, new housing projects of gated communities that extend from the Ulus Ridge (Figure 3; D5 to E9) to the Ortaköy Valley built after 1980s seem to conform with the topography through examining the urban pattern, increasing construction areas are encasing to the whole parcel. These new practices involved deep excavations, landfill and increase of concrete surfaces and platforms are leading to the deformation of the topography. Still, the relationship between the residential spots created by sub-identity areas that are defined by housing areas and the ridge-hillside-valley system does not prevent the preservation of the continuity of the valley system. The traces of the valley system that have survived to date offer a potential that should be taken advantage.

Urban development plan revision practices that were performed on a parcel basis, rather than on a wholistic planning approach that would ensure the integrity of plan, enabled high-rise buildings to be constructed in valleys, and became the tools that accelerated the deformation of the IVS.

3. General Analyses and Conclusion

This study has discussed the mutual effects generated by the potentials of the topography and the ecological systems in the Levent area and the existing built environment. Moreover, it has also offered an opportunity to re-evaluate the association of topography and green-blue systems with the built environment. In addition, the study basically determined a process of deterioration, and provided a chance to make a new evaluation based on these potentials. The interaction between natural and the built environment and that survived to date after a historical development proves that there is a metabolic relationship between topography and urban development. The recent loss of this metabolic relationship threatens the quality of the urban space and compact, liveable structure of urban pattern that had characterized the Levent area. Such threats identified in the study are as follows.

-Unification of the housing areas creating interlaced urban fabric that were separated by valleys. Loss of spatial identity in urban space.

-Fragmentation of the neighbourhood units through new transportation arteries, and hence deterioration of the social collaboration that forms the neighbourhood.

-Increasing of construction area and building heights through parcel-based urban plan revisions, and the burden of this situation on the transportation system and infrastructure.

-Fragmentation and loss of integrity in the ecological corridors that are fed by stream beds; deformation of stream beds into concrete drainage canals that carry surface water to the sea.

-Lack of continuity in public green spaces. Disintegration of open green spaces providing the green and blue integrity by extending to the coast through valleys which previously followed stream beds and the ridges of the Bosphorus.

-Deterioration of the IVS by interventions into the natural topographic structure with large-scale infrastructure projects, like highway attachments, and tall buildings.

-Loss of quality in the ecological systems of valleys due to construction.

Figure 4. Levent Integrated Valley System (IVS).

As stated in the Urban Agenda for the European Union, it is necessary to create liveable, compact cities by making an efficient and productive use of the potential areas within the current urban pattern rather than through a horizontal sprawl of cities. In the Levent area, it is possible to re-evaluate the topography-related green and blue system in such a way as to create a unifying urban spine for future development, and thereby have a more liveable and sustainable urban system. This method holds strategic importance in the city's renewal process. It is necessary to re-evaluate current urban development plans in such a perspective and clarify the qualities of the IVS (Figure 4).

As an outcome of spatial analyses, following criterias have been determined for the re-evaluation of IVS as a structural element to support the urban system.

Rehabilitation of the existing secondary roads system passing through valleys in such a way as to restore qualifications of stream beds; utilization of the existing in-valley roads as green corridors to improve pedestrian access and activity rather than transforming them into new arterial roads.

Improving quality of a connection between neighborhoods for pedestrians on Nispetiye Street -the urban spine- which passes through the upper level of the Levent Plateau.

Re-integration of the fragmented public parks and gardens to form a green system in order to gain wholistic ecological corridors that combine the sub-valley systems lying in northern and southern hills.

Ensuring the connection of the blue system (starting in the neighborhood scale with stream beds) in an uninterrupted manner with the Bosphorus, which serves as the blue spine of the city.

Designing open public spaces and facilities that would provide social integration in neighbourhoods as a part of Levent IVS to improve social integration.

Connecting the existing housing areas as well as new housing project through the Levent IVS and using these connections as ecological corridors to gain open-permeable neighbourhoods.

It is important to ensure that the residential areas under the pressure of construction located in the central urban areas such as Levent, are redeveloped within the potentials of natural qualities and limitations. In this context, IVS reachs significance as a model that can be used for similar residential areas within Istanbul metropolitan area. Above defined risks and potentials should be assessed together with the existing urban development plans and strategies for implementations should be developed accordingly.

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Co-Cairo: A Disruptive Paradigm Re-Defining our Future Juxtopolis

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Over the past decades, Cairo has embarked on a series of urban strategies to address overpopulation, scarcity of resources and encroachment on valuable agricultural land, among other challenges.These strategies included the creation of satellite urban centres, many of which have failed to meet their strategic targets, particularly in diversity of use and population (Sims, 2015). Part of this shortcoming may be attributed to the lack of factors of livability in many of these new satellite developments- issues such as accessibility, mobility, transportation, affordable housing, public space, cultural space, infrastructure and education. This paper proposes a disruption of the repetitive loop of such satellite city creation.

This disruption is rooted in the more granular and textured understanding of the existing fabric and urban condition that gives Cairo its characteristic qualities of liveability and vibrancy. Based on the Juxtopoplis definition (Mostafa, 2016), this paper strives to identify the hybrid quality of Cairo found in its interstitiality between its urban juxtapositions. It tackles this within a temporal framework and poses the question "what will livability mean in a future Juxtopolis?".

It proposes an urban strategy based on the spatial application of shared economy notions (Hamari, 2016) within the framework of digital social space/ real-space analogies- a co-designed, co-created, co-shared and co-lived Co-Cairo.

Introduction

Over the past decade Cairo has grown to be one of the largest cities in the world ((Masriya, 2017). Consequently, it has embarked on numerous urban strategies to tackle lack of resources and rapid population growth, most notably the establishment of satellite cities, creating an almost continuous megalopolis that extends east to west into the desert, and north to south along the Nile. Most of these satellite cities have largely failed to meet their strategic goals, primarily due to insufficient city planning, lack of social inclusion, diversity and mobility (Sims, 2015). They have, from the population stand-point, resolved little, and are currently only inhabited by 3.8% of Cairo's population (Sims, 2015).

One of the primary challenges of satellite cities is the lack of affordable housing, which opposes the original target of providing housing options for the whole spectrum of the society. Today, cities such as New Cairo and 6th October have become homes to a very small fraction of Egypt's population largely in private gated communities, within primarily monolithic commercially driven neighborhoods. Little is put in place to absorb the need for different populations, social diversity, mixed use, economic variety and the vibrant and powerful informal sector.

Mobility and public transportation pose an additional challenge. Jeopardizing the livability and safety of these districts, an almost complete absence of safe and affordable public transportation has created vast vehicle-centric communities, connected to the city centre by large high speed motorways occupied primarily by private cars. With only 11% of Cairo's population owning a car, these long distances within and outside of the cities do not only present a major obstacle to lower income classes, but also make desert cities exclusive to high-income inhabitants (Sims, 2015).

Consequently, the reality of satellite cities has shifted from decentralizing Cairo's population, to becoming a playground for the rich, pivoting primarily on speculation and luxury housing and commerce. Much of these areas are also not designed for pedestrian access, and decreased walkability, coupled with the lack of diversity of use and population, all contribute to a compromised level of livability.

This research will show that current satellite city strategies fail to accommodate and interpret the hybrid quality and diverse nature of Cairo's population leading to a lack of livability in its neighborhoods. It aims at proposing an alternative, by positing an urban disruption, a rethinking of the present repetitive cycle of satellite city creation. This disruption is based on three concepts- the definition of Cairo as a Juxtopolis (Mostafa, 2017); the reinterpretation of urban spaces through the lens of the shared economy model; and the proposal of urban solutions that give physical form to digital socio-spatial dynamics. Together this approach is proposed as the Co-Cairo model.

Methodology

The proposed methodology included a variety of both secondary and primary sources on livability, living heritage and "Caironess". The primary sources were be utilized to gather a detailed background to the research question, hence aiding with satisfying its objectives. The primary sources included both conclusive and exploratory data. The exploratory data was gathered in the form of field interviews, which were conducted across in Cairo in what Sims has called the urban core- including as Zamalek, Korba and Downtown Cairo. The target group was a wide spectrum of the society, which consisted of both old and young, female and male and people from generally different backgrounds, social classes and interests. Interviews were 5 minutes long, and videotaped in order to create a collective visual understanding of the sought for "Caironess", irrespective of personal preferences and views.Secondary sources were used to institute a rich understanding of modern concepts and ideas that refer to livability, digital analogies and future living heritage in addition to a variety of perspectives and concepts, such as the "Juxtopolis", disruption and the shared economy model.

Promoting Livability:

Livability, as defined by the Economist Intelligence Unit, is multifactorial. These livability factors include, but are not limited to transportation, infrastructure, mobility, accessibility, housing, public space, education and cultural space (The Economist Intelligence Unit, 2015). In order to disrupt the repetitive loop of satellite city creation, and its consequent creation of urban spaces lacking in livability, a coherent and well-rounded framework was created, to redefine and rethink several terminologies, such as contemporary living heritage and livable architecture. This was utilized to comprehend the more textured and granular urban fabric of Cairo's characteristics, qualities and livability.

Livable Architecture

Post-industrial, and as the city is becoming the predominant place that people inhabit and within which they work, increased focus in the literature has been given to the general quality of life in cities, and its spatial manifestations in the public realm and the "in-between (Gehl, 2014). A livable space is defined as one that is designed and redesigned for its people to interact and connect with their surroundings and each other (Bender, 2007). It is a type of architecture that is very much different from the one that is currently dominating Cairo's satellite city society- one that is based on the people, their right to public space and quality of life. According to Peter Evans, there are two components to livability in order to create and sustain future livable cities (Evans, 2002). The first is livelihood, which encompasses job opportunities, affordable housing, mobility, education, safety, accessibility, public spaces and transportation (The Economist Intelligence Unit, 2015). The second is the general sustainability of cities, which goes hand in hand with livelihood to create a healthy habitat. Access to affordable housing and jobs should be solved in a manner that does not ecologically degrade the city and force inhabitants to trade quality of life for wages (Evans, 2002). However, it should focus on putting both components together, to not only preserve the quality of the environment, but also make it a livable and vibrant place.

Place-making

Place-making, first discussed by scholars such as Jacobs and Whyte, and its concepts have been developed as a theoretical intersection with livability. Place-making signifies the act of inspiring people to reimagine and conceive public spaces as the core of the community (Pacheco, 2015). The term place-making was established and supported by several pioneers, such as William Whyte and Jane Jacobs, who encouraged the notion of designing cities for people, around walking and small connected personal neighborhoods, as opposed to vast disconnected vehicle-centered urban sprawl (Pacheco, 2015). Their research primarily emphasized the cultural and social factors of livable neighborhoods and attractive public spaces. Concepts such as Jacob's "eyes on the street" emphasize the importance of sense of ownership and community, and their role in livable cities (Moughtin, 2007). If a street is safe, accessible and attractive, it automatically encourages a variety of activities and interactions. According to Charles Bohl, 20th century planning has become so institutionalized and rigid; that the inhabitants of cities rarely get the opportunity to speak their needs and beliefs about the spaces they inhabit and live in (Bohl, 2002). Place-making proposes a chance to transform this notion, by viewing spaces in their entirety, rather than focusing on separate components of spaces.

Contemporary Living Heritage

The urban tissue of our surrounding cities and their countless layers and textures, present a manifestation of their vast and rich identity and heritage. It is not just the specific physical manifestations and monuments that are deserving and requiring of safeguarding and protection, yet it is the general atmosphere of such heritage-based areas that attribute to the whole essence of cities and spaces. Heritage, both intangible and tangible, is a key

contributor to livability, cultural continuity, place-making, and the formation of contemporary identities and meanings (UNESCO, 2016)).

Intangible notion of heritage and human interactions are crucial in promoting livability and creating living urban environments. The quality, connectivity, diversity, accessibility and inclusiveness of our surrounding spaces deeply affect the number of social connections we can have. Nobel award-winning economist, Joseph Stiglitz has stated that "social connections have a greater impact on our wellbeing than any other factor" (Stiglitz, 2010). Although we seem to be closer than ever before, statistics show that Egypt ranks 104th (out of 155 countries) in the UN World Happiness report, primarily due to loneliness, unhealthy surroundings and insecurity (Helliwell, 2017). Furthermore, Cairo is ranked 121st in the Livability Index, which looks at healthcare, infrastructure, public spaces, safety, education, culture and the environment (The Economist Intelligence Unit, 2015). All these are strong indicators of the need to address the lack of livability across the city of Cairo, particularly in its new satellite cities.

In order to disrupt the loop and establish a healthy and progressive cycle, one has to look at livability from the lens of human heritage and its intangible attributes. Creating a linkage between both livability and human heritage will open the door for a better environment, which revolves around its users, while achieving the notion of life in-between buildings. It is the position of this paper that living heritage may be represented, at least partially, by digital dynamics and spaces as manifestations of new forms of socio-cultural structures, and it is these structures that may form the archetype for the proposed Co-Cairo model.

Proposed Intervention Strategy:

This paper proposes an architectural imaginary, an experimental testing of the above hypothesis- that a disruption based on the triad of concepts- the definition of Cairo as a Juxtopolis (Mostafa, 2017); the reinterpretation of urban spaces through the lens of the shared economy model; and the proposal of urban solutions that give physical form to digital socio-spatial dynamics- will create an alternative urban paradigm, the Co-Cairo model. It is proposed that this model could potentially promote increased livability in a strategy that can be scaled up and replicated across newly formed satellite cities as they grow and evolve, or as a larger scale planning strategy for new settlements.

Site Analysis:

To test this position a site was selected in the Central Business District of the 5th settlement of New Cairo, one of Cairo's main satellite cities to the east of its urban core. The selected site is in close proximity to one of the settlements important anchor institutions, the American University in Cairo's main campus, and is surrounded by commercial, institutional and residential land uses (fig. 2). The site has a total area of 58,600m2 and the local building regulations allow for a total volume build up of 492,240m3. This volume can be consolidated, distributed or fragmented across the site, an organizational allowance that is central to the strategy proposed.

Although the site is located in a rather contextually rich area, the target of the project is to "complete not compete" with its surroundings, hence working as a connector and facilitator to the neighborhood.

The Co-Cairo Program, an alternative model:

The key driver for the programmatic structure of the project is to create a physical manifestation of the co-sharing model, which captures the nature of Cairo's hybridity and togetherness. Figure 3 illustrates all five projects that make up the master plan: Co-commerce, Co-curating, Co-knowledge, Co-learning, and Co-working. All prototypes follow the sharing model, while maintaining their own unique individuality and uniqueness. The figure additionally displays how all projects interweave and overlap with each other, hence highlighting connections and intersections. A parallel cityscape is integrated within the buildings, hence

offering a new and elevated sphere of living, which will focus on bringing the users together to meet, interact, and gather. It will also encourage connectivity and walkability throughout the site, as it will act as a connector and facilitator. For development reasons, and financial feasibility, a multi-story office tower and residential complex are proposed, and demonstrate the concept that these urban strategies are not mutually exclusive, but can co-exist and complete one another. The five models in detail are: Co-Working, Co-knowledge, Co-Curating, Co-Learning and Co-Commerce.

Co-Working:

The way people work is changing, particularly in the Egyptian economy where entrepreneurship is on the rise (*Entrepreneurship Ecosystem,* 2017). Many entrepreneurs in Cairo are choosing to join a co-working space to get their startup off the ground. There are now several in Cairo that offer a comfortable and flexible work environment with great internet, support services, and opportunities to network and collaborate, demonstrating the need for such spaces.

The Co-Working model proposes a physical manifestation and a spatial analogy of the digital platform of Facebook, a social platform that enables users to create personal profiles or "Walls" that allow them to connect with other uses and keep in touch with friends and family, as well as share opinions, give feedback and post information either on their personal wall or on walls or pages of other individual users, social groups or even business profiles. It allows users to engage in social events and social groups or communities as well as connect to workshops and events. The Business Hub or Co-Working model is inspired by the dynamics of this social application, and aspires to create a physical manifestation of these digital tools that enable the user to perform certain activities such as networking and socializing. Doing so, this project is anticipating the future living heritage of the society in Egypt, where the majority of the country owns a smartphone and is 'online' or active in the digital world. A report conducted by the ministry of communication and information technology shows how internet users in Egypt are vastly increasing each year, reaching 33.19 million internet users in April 2017 (*Internet users in Egypt,* 2017). The Co-Working model aims at capturing the dynamics of this digital analogy and using them to create an intermediary public node of interaction that encourages networking and collaboration between its users. Doing so, it aims to aid business growth, create a pool of shared knowledge between its users through peer to peer guidance and idea sharing as well as networking events and activities.

Bringing together the inspiration of the digital analogies with the idea of capturing the essence of Cairo i.e. 'Caironess' through the hybridity of the juxtapositions, the Co-Working model or Business Hub highlights the juxtaposition of Permanent and Temporary. The Co-Working model aspires to create a new typology of the working environment in Egypt today. Instead of creating a traditional, static and repetitive office space arrangement, this project aims to explore a more playful, open and innovative mindset or design approach. Contrasting between two opposites that are temporary and permanent, this project aims to create temporary spaces, that accommodate to the user as well as the fast-paced changes occurring in the world today in terms of business, technology and creative, innovative and productive thinking. (fig.4)

Co-Knowledge- the Knowledge-Scape:

At this rapid growth of digital content and digital tools, the way in which people consume, create and distribute knowledge is ever-changing (Gregson, J., Brownlee, J.M., Playforth, R. and Bimbe, N.,2015). According to Gregson et al. (2015), in an article about the future of knowledge sharing in the digital age, it is expected that within the next 15 years developing countries are anticipated to experience extensive changes in how societies engage with knowledge. These changes hold the potential to make knowledge sharing much easier, but at the same time due to the great advancement of technology this carries the threats of making knowledge less credible and more influenced by society biases and less diversity of knowledge (Gregson, et al., 2015).

The Co- knowledge model involves designing a knowledge scape which aims at allowing different social groups to connect around the realm of knowledge sharing. Retaining the traditional ambitions of openness and availability of knowledge by creating a pit stop for information flow and activity does this.

Researchers have found that various institutions of intellectual and cultural value, such as publishing houses, newspaper companies, and universities, as well as libraries find themselves on a precipice at the dawn of a digital era (Dar Al-Uloum Initiative, 2017). As digital technology proliferates, the means with which people access and share information, libraries no longer attract visitors solely through the accumulation of books. These knowledge-sharing centers are expanding their roles not only to function as storage for books but rather as community and/ or cultural centers (Joe Lamere, Dar Al-Uloum Initiative, 2017). This is the central concept of the Co-Knowledge landscape (fig.4)

Co-Curating:

The Design and Art thinking Center proposes a design that follows the spatial analogies of the Pinterest application. This idea of pinning, collaborating, sharing and generating ideas, should be present throughout the design, while putting special emphasis on the design and art thinking methodology of the Stanford d.school. The purpose of the Co-Curating project is to bring the digital connotation of curation to a physical and engaging space that fosters collaboration and sharing. As a result, Co-Curation will offer a realm of public interactive spaces, which will create a hybrid environment between the different users and spaces. These public spaces will follow the notion of Place-making, to allow people to reimagine public areas as the core of the community (Bohl, 2002). In addition to that, the design will cater for incompleteness to allow for flexibility, in order to adapt to the ever-changing nature of design and art. It will also act as a civic space, which provides platforms for interaction, social inclusion and diversity, as it targets the whole spectrum of the society. Community dialogue and a variety of art and design platforms will be provided, to reflect on the hybridity and essence of the sought for "Caironess".

According to the UNESCO's Global Report on sustainable development, good environments for interaction are spaces where a diverse group of people and backgrounds can meet comfortably and easily. Thus, the curation center will not only provide a platform for a diversity of art, but also cater for a diversity of people (UNESCO, 2016). This will transform diversity from being a dividing force, into an asset that will harness the past to aid in inventing the future.

Moreover, the design-thinking center will offer a realm of opportunities and possibilities to its users, as it will adopt the co-sharing model. This model will be additionally reflected in the juxtaposition between owned and shared, where shared equipment, exhibition spaces, ideas and tools will be encouraged for the users. The aim is to encourage people to become more comfortable sharing their ideas and art, as this will generate crowdsourcing, while weaving community engagement into the design-thinking process. The users will get the chance to rent and share exhibition spaces and prototyping labs, to test and examine their proposals. This will increase the resources, connect the users and promote affordability. Co-curation proposes a space that not only encourages connectivity between users, but also with its surroundings. Sloped platforms and roofs will be used to integrate the street with the building; thus, highlighting togetherness and shared ownership. People walking outside of the building, will get a glimpse of what is happening inside, which will create a sense of transparency and interconnectivity. Hence, the project will act as "*a public intermediary that promotes connectivity between the space and the people, by encouraging innovation and self-expression to cultivate the art and design thinking scene in New Cairo*." (fig. 4)

Co-Learning:

Co-learning design is inspired by the dynamics of the digital analogy of Google, which provides its users with information in different visual forms, such as texts, videos as well as images. In addition, Google allows its users to access links that presents information written

or created by different sources and different authors of knowledge. Hence it provides a large variety for its users. The plan is to capture these mentioned dynamics of Google and translate them into the physical world. So the education that the co-learning project provides is the kind of education that bases its learning on a variety of sources rather than didactic education. Meanwhile, the education focuses on self-learning, experiential learning, peer to peer learning as well as didactic learning. Besides the variety of learning, it also emphasizes on different forms of learning such as static learning as reading, listening and drawing, but also dynamic learning as music, performance and sculpture art.

The educational system that is provided in Co-Learning project captures one of the unique juxtaposition of Cairo which is the hybridity and co-existing of dynamic and static. (fig.4)

Co-Commerce:

Several studies show how problematic the issue of unemployment is, as it creates crucial effects on both global and national scales, by promoting informality and threatening livability. In the ECES report Employment and Unemployment in Egypt, Radwan classifies unemployment as a "conventional problem that has occupied policy makers, academia, the media, and most importantly, every household in Egypt" (Radwan, 2002). In 2006, the unemployment rate in Egypt reached 9.3%, that is equivalent to approximately 2.1 million Egyptian striving to find a job to help him satisfy his needs and offer his family a proper way of life (Hassan, 2008).

In response to the above, Co-Commerce aims to disrupt the present cycle by offering a physical platform, boosting the motivation of the less fortunate who are searching for an incentive to help them pursue their goal by finding an occupation. Hence, Co-Commerce creates a tangible manifestation of the Linked-In analogy. It connects between those who are searching for a job and the corporations, as well as it allows the users to share their skills and interests.

Co-Commerce's objective aims to serve the unstable employment, which is reflected by various informal activities happening around the site, and to gather them under one formal platform, with the goal of providing the users with a chance to get a permanent job with a fixed salary. The main targeted businesses are not only restricted to the current trades on site pottery making, gardening, stone mosaic making and oriental food cooking, but are open to any street vendor and talented individual who does not have the proper means to promote himself and advertise his skills. On the other hand, the project aims to serve diverse types of consumers. Starting from families covering all age groups, Co-Commerce also targets businessmen and company owners who are searching for selective employees, since Co-Commerce will give them the opportunity to choose between different skillful community members as they showcase their work in the project's booth. (fig.4)

Conclusion

As Cairo, and many megalopolis' like it across the global south in particular, continue to expand, rapidly urbanize and develop, quality of life and social sustainability of this growth is crucial. Our future sees more and more people living in cities, and their health, prosperity and well-being is central to the global economic stability and vibrancy. As our communities become more diverse, inclusion and accessibility to basic constructs of urban livability are crucial. The Co-Cairo model presents an urban imaginary where some of this livability may be re-introduced to our new urban environments, in a way that is both socially and economically sustainable- a co-designed, co-created, co-shared and co-lived Co-Cairo.

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La Piazza Spirito Santo, in Catania: Al confine tra Antico e Moderno

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New urban design interventions for the Piazza Spirito Santo of Catania as projection of the relationship between the Ancient and the Modern – *The articulated space of Piazza Spirito Santo is located in the heart of Catania, in connection with Via Etnea, the main street of the historic city, and in contiguity to Corso Sicilia, the modern directional axis of the 1950's. However it remains a marginalized area: Piazza Spirito Santo is just a series of discarded spaces determinate by reconstruction plan of The Old San Berillo quarter. In this way, some historic palaces define a front of this area, while the others fronts are closed with buildings of the 60's & 70's. The S. Cristoforo Minore church marks the centre of the place, but is surrounded by vehicles that are parked there for the whole day: so the use of this square as a parking lot has became a typical scenery of a degraded district. Giving voice to the places through the project is the leitmotif of the Laboratorio UniRC: the architectural works aim to deepen dialogue strategies between the Old and the New in architecture. In fact it is necessary restoring lost values of the square in order to enhance a pedestrian use of it, to interpret the hidden identities of the city in its shape and understand its possible future forms for transforming the space.*

C'è come una impronta genetica che caratterizza alcuni luoghi della città; e che nel tempo tende a confermare i suoi caratteri, sia pure in modo allusivo: è il caso della Piazza Spirito Santo a Catania, che da sempre si pone come un'area di confine, al margine tra giaciture morfologiche differenti che hanno prodotto l'incontro e lo scontro delle tessiture urbane. Se osserviamo la rappresentazione incisa da Stizzia nel 1592, Catania appare ancora con l'assetto irregolare e organico di un centro medievale: cinto da mura e attraversato in direzione dell'Etna dalla sinuosa Strada processionale della Luminaria, che partendosi dalla Cattedrale sul mare raggiunge la Porta Aci, all'uscita della quale si collocano i resti dell'Anfiteatro romano e il Martyrium della patrona S. Agata. In prossimità della Porta, a sinistra, s'apre una largura tra il Bastione S. Michele e un rilevato detto Rocca del Vento, sedime di precedenti eruzioni -le cosiddette "sciare"- che disegnano il paesaggio extra-moenia: questo spiazzo, compresso e sfuggente, di confine tra città e natura, è già il futuro Largo dello Spirito Santo. Ma, dopo l'imponente colata lavica del 1669, che -seppellendo parte del tessuto storico- raggiunge il mare e blocca lo sviluppo urbano verso la Piana ad ovest; e dopo il terremoto del 1693 che rade al suolo l'intera città; il Duca di Camastra riconfigura Catania attraverso un impianto a croce che trova il suo nuovo centro nei Quattro Canti. L'incisione di Vacca rappresenta nel 1780 la ricostruzione a cento anni dal sisma: il disegno dei lotti ha saturato con una scacchiera i suoli della città atterrata, regolarizzando i precedenti tracciati; ma sul progetto complessivo s'impone la crociera: col rettifilo di Via Etnea, sul percorso della Luminaria, che prosegue a nord attraverso Piazza Stesicoro, sorta interrando l'Anfiteatro romano; e con la perpendicolare ai Quattro Canti del rettifilo di Via Lanza, chiuso ad ovest dal blocco dei Benedettini e dalle lave del 1669, mentre s'apre verso le "sciare" della costa-est scavalcando il frammentario Gyrum delle mura superstiti. Il Bastione S. Michele, ora inglobato nella scacchiera urbana, è ancora perfettamente leggibile; di fronte, la Rocca del Vento ha saturato di costruzioni disordinate tutto il rilevato lavico, anticipando lo sviluppo caotico del futuro quartiere S. Berillo verso est; in mezzo, al confine tra città geometrica e l'irregolare costituirsi della prima periferia storica sulle "sciare", troviamo come sempre il Largo dello Spirito Santo: che deriva la sua denominazione da uno scomparso edificio di culto, in prossimità del quale si colloca già dal 1722 la Chiesa di S. Cristoforo Minore (come attesta un atto notarile). La pianta del 1832 di Ittar ci mostra il Largo dello Spirito Santo segnato in contrappunto da due chiese: la prima -poi demolita- si collocava sull'angolo di N/O che svolta verso Piazza Stesicoro; la seconda, sull'angolo di S/E è quella tuttora esistente di S. Cristoforo Minore, che a seguito del livellamento stradale vede conclusi i propri lavori nel 1857 con l'aggiunta in prospetto di scale per raggiungere il piano rilevato della Rocca del Vento (lavori che interessano anche la canonica del 1799 che acquista un ingresso più in basso alla quota del Largo). Nella pianta Vallardi, alla seconda metà dell'Ottocento, seguendo via Etnea, la città geometrica e regolare sale verso nord e colloca a Piazza Stesicoro il suo nuovo centro; mentre il quartiere S. Berillo continua a crescere irregolarmente verso est, attratto dalla nuova Stazione dove, dalle miniere dell'interno, arrivano gli zolfi, per essere lavorati nei vicini opifici e caricati nel nuovo porto del quale Catania si è da poco dotata. Il Largo dello Spirito Santo e Piazza Cappellini dovrebbero costituire i poli di un asse commerciale, utile a collegare -secondo il modello di Haussmann- il centro antico con la moderna Stazione; ma il progetto non decolla, per il frapporsi in S. Berillo di strade anguste generate dall'edilizia speculativa: in questo modo le due piazze restano territori di confine tra parti della città che non comunicano. Più tardi, l'esigenza di un asse di collegamento fra il centro e la Stazione si carica di valori simbolici con lo scavo dell'Anfiteatro romano nel 1904, che promuove il parallelo tra Catania metropoli del mondo antico e Catania emporio moderno dei prodotti e dei traffici coloniali. Dal 1913 si susseguono, quindi, piani di risanamento e ammodernamento del quartiere S. Berillo, sempre rimandati per le vicende dei conflitti mondiali; finché nel secondo dopoguerra ha luogo uno sventramento radicale che lascia tuttavia irrisolta la soluzione formale del rapporto tra urbanistica moderna e tessuti antichi. La nuova edificazione si riduce, infatti, a un accostamento meccanico dei nuovi palazzi a lacerti del centro storico, che essi si limitano a nascondere dietro le loro quinte da città alla Potëmkin. Il Largo Spirito Santo, insieme ad altri frammenti urbani sopravvissuti allo sventramento degli anni cinquanta, resta un vuoto di risulta, informe e privo di progetto: uno spazio indefinito che non appartiene più

alla città antica, ma del quale la città contemporanea non sa appropriarsi, perché non sa cosa farsene, né come rapportarsi ad esso (nemmeno "per differenza"); così finisce per diventare un disordinato parcheggio, nel quale S. Cristoforo Minore funge da incongruo spartitraffico. Nel 2005, l'amministrazione comunale s'interessa finalmente di Largo Spirito Santo; bandendo un concorso per "cinque piazze botaniche", dal quale s'evince in modo palese la volontà d'incassare un facile consenso col "verde" in città. Per questo, tanto il progetto vincitore ("Frammenti", di Massimo Mortelliti) che i progetti segnalati (come quello di Aldo Loris Rossi) sviluppano temi di arredo urbano che, a nostro avviso, si contentano di "abbellire" l'area con alberi e fontane o di rendere funzionali i parcheggi, ma sostanzialmente propongono a Piazza Spirito Santo un cuscinetto di giardino pubblico tra Piazza Stesicoro e la città moderna. In ogni caso, seguendo una prassi tutta italiana, i risultati concorsuali restano disattesi; mentre la città resta in attesa.

Il Laboratorio UniRC da me diretto ha proposto una strategia progettuale che intende interpretare proprio il carattere "double face" che la piazza ha sempre rivestito (e che oggi più che mai riveste), come luogo di margine e di scambio tra la città storica e la città moderna; facendo leva, per questo, sul ruolo urbano che vi gioca la Chiesa di S. Cristoforo Minore: come fondale storico tradizionale, sull'asse prospettico che collega idealmente il Monumento a Bellini di Piazza Stesicoro, il Chiosco fin de siècle all'angolo N/O di Piazza Spirito Santo, e la Chiesa stessa; ed, allo stesso tempo, interpretando S. Cristoforo Minore come una cerniera, uno di quegli "objets à réaction poétique" che Le Corbusier ci ha insegnato a inserire nella composizione della città moderna, o come uno di quegli "oggetti trovati" che il Surrealismo preleva dall'inconscio (ed anche la città ha il suo inconscio collettivo) e ricolloca con funzioni di straniamento nella nostra vita contemporanea. Partire dalla Chiesa vuol dire prendere nota delle sue mancanze: anzitutto, per mediare e stabilire un rapporto spaziale con la piazza sottostante, non esiste un accogliente sagrato esterno (perché le antiche scale finiscono alla quota m.2,40 del rilevato con un semplice pianerottolo); e così ne discende che i disabili non hanno accesso. L'altro problema è posto dalla riqualificazione formale dei prospetti che, a parte quello settecentesco a sud, si presentano come lacerti di demolizioni, avanzati dallo sventramento: il fianco ovest espone un portale antico, sospeso nel vuoto; il fianco della canonica a est e l'abside a nord non sostengono la definizione tipologica della fabbrica, ma sono tenuti in piedi dal maldestro rinforzo strutturale offerto da un contrafforte in muratura e da un cordolo di cemento armato in fondazione.

Adottando una strategia minimalista, il progetto Bassetta-De Raffele dall'accesso di Piazza Stesicoro solleva lentamente il suolo, facendo girare il pavimento di lava fino a trasformarlo in un paramento che ricopre il fianco ovest di S. Cristoforo Minore. Con un unico procedimento, si ottiene così un piano inclinato che diventa il sagrato della Chiesa e insieme un nuovo moderno fondale per l'antica piazza. Il progressivo dislivello del piano inclinato viene risolto, su un lato. da un lungo margine scalettato che può fare da seduta oltre che costituire l'ulteriore accesso alla Chiesa; mentre sull'altro lato il dislivello è chiuso dal parapetto-fontana, che si solleva sul fondo a disegnare il nuovo campanile. Ancora il fianco della Chiesa, come nuovo fondale prospettico di Piazza Spirito Santo, diventa tema centrale nei progetti di Bertolo-Carbè e di Giacchi. Il primo parte da un disegno della pavimentazione con i materiali della tradizione storica catanese -lava e calcare bianco- per descrivere il moderno distacco fra i differenti tracciati della città antica e contemporanea, separati dal cuneo che segnala -insieme al chiosco- l'accesso principale della piazza; mentre il fondo di quest'ultima si solleva per restituire la sagoma dell'antica Rocca del vento e la giacitura acropolica della Chiesa. Un sistema di rampe e scalinate modella il sagrato, sul fianco ovest della Chiesa al quale si "aggrappano" i cubi del nuovo ingresso, del battistero, e della cantoria: essi, insieme ad un ombraio, definiscono la facciata moderna, "scavata" come una sezione degli sventramenti, che fa ruotare sulla parasta d'angolo il prospetto settecentesco. Il progetto Giacchi non scava ma anticipa, sempre attraverso un protettivo ombraio, il nuovo prospetto ovest della Chiesa, quale fondale prospettico. Il moderno sagrato si articola con scalinate e rampe in successione, confermando la giacitura acropolica dell'antico rilevato; che trova sul fianco affacciato verso la città contemporanea il parapetto di un lungo fontanone, che si offre anche come fresca seduta estiva.

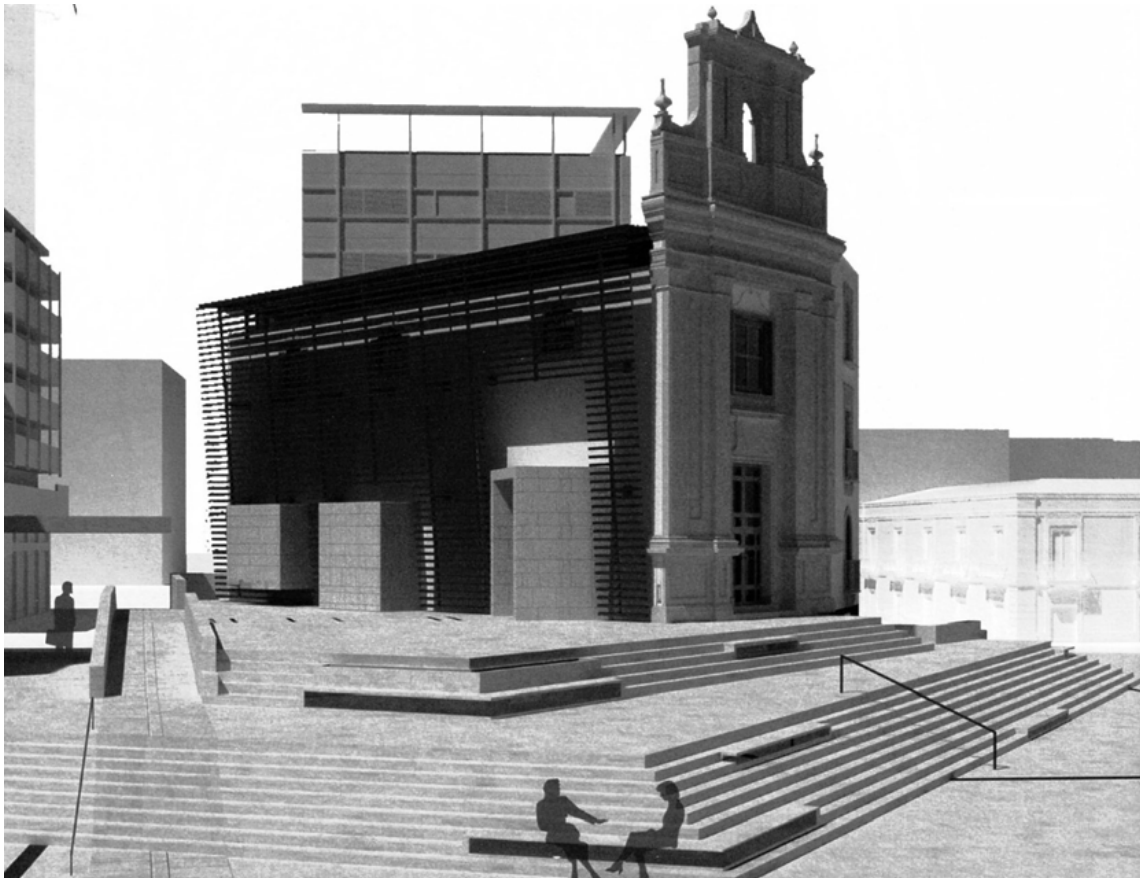
In modo diverso, i progetti di Canfora e Costanzo, di Lombardo, di Altomonte e Iero,

interpretano la Chiesa di S. Cristoforo Minore come una cerniera che consente il passaggio dalla città storica alla città moderna. Per Canfora e Costanzo questa cerniera tiene insieme, sia la materia arcaica della "sciara" lavica -basamento di pietra dal quale sgorga l'acqua-, sia l'astrazione del piano che articola lo spazio moderno. Così una parete-superficie avvolge il nuovo battistero e si solleva al cielo per definire il campanile: il prospetto moderno avanza sulla Piazza, in competizione con quello settecentesco, determinando una condizione "double face" della facciata che interpreta e sintetizza la condizione "double face" di tutto lo spazio urbano, luogo di confine tra l'antico e il nuovo. Il progetto Lombardo propone il pieno inserimento di S. Cristoforo Minore tra i volumi della città moderna, porgendolo come un avamposto di architettura contemporanea in centro storico: a questo fine interviene a riformare l'abside e la canonica (facendogli acquistare il ruolo di accessi), e sottolinea -avanzando un campanile sulla punta del sagrato triangolare- il cuneo con il quale il fianco ovest si offre su Piazza Spirito Santo con una nuova facciata. In modo analogo, il progetto Altomonte-Iero procede a una riforma complessiva dei prospetti di S. Cristoforo Minore in chiave contemporanea, ma per raggiungere un equilibrio tra l'avanzamento del nuovo ingresso sullo storico Largo, e il deciso inserimento dell'abside tra i palazzoni moderni di S. Berillo.

Anche il progetto Barbalace-Comi ricompatta la Chiesa nelle forme di un solido chiuso, ma senza riformarne i prospetti: S. Cristofaro Minore è interpretato come un volume "puro", intonacato di bianco in adesione con la poetica di quella architettura mediterranea che, nell'ambito del Razionalismo Italiano, ha cercato un equilibrio tra il classico e la modernità; che ora viene ritrovato nel dialogo tra il prospetto settecentesco e la nudità del restante corpo di fabbrica. Un nuovo segnale urbano, un recinto avanzato sul bordo stradale della città moderna, è dato dalla giustapposizione della linea verticale del campanile con la linea orizzontale del portico urbano. L'incrocio di questi due oggetti architettonici permette inaspettati punti vista: il campanile è infatti praticabile come belvedere sulla città; mentre il portico delimita un piano d'acqua, e un fontanone inclinato di accesso laterale alla Chiesa. Anche così lo spirito del barocco siciliano può continuare a sorprenderci nel bel mezzo di un rigore cartesiano.

Figure 1. Bassetta - De Raffaele.

Figure 2a. Bertolo -Carbe ¦ Ç; **2b.** Giacchi.



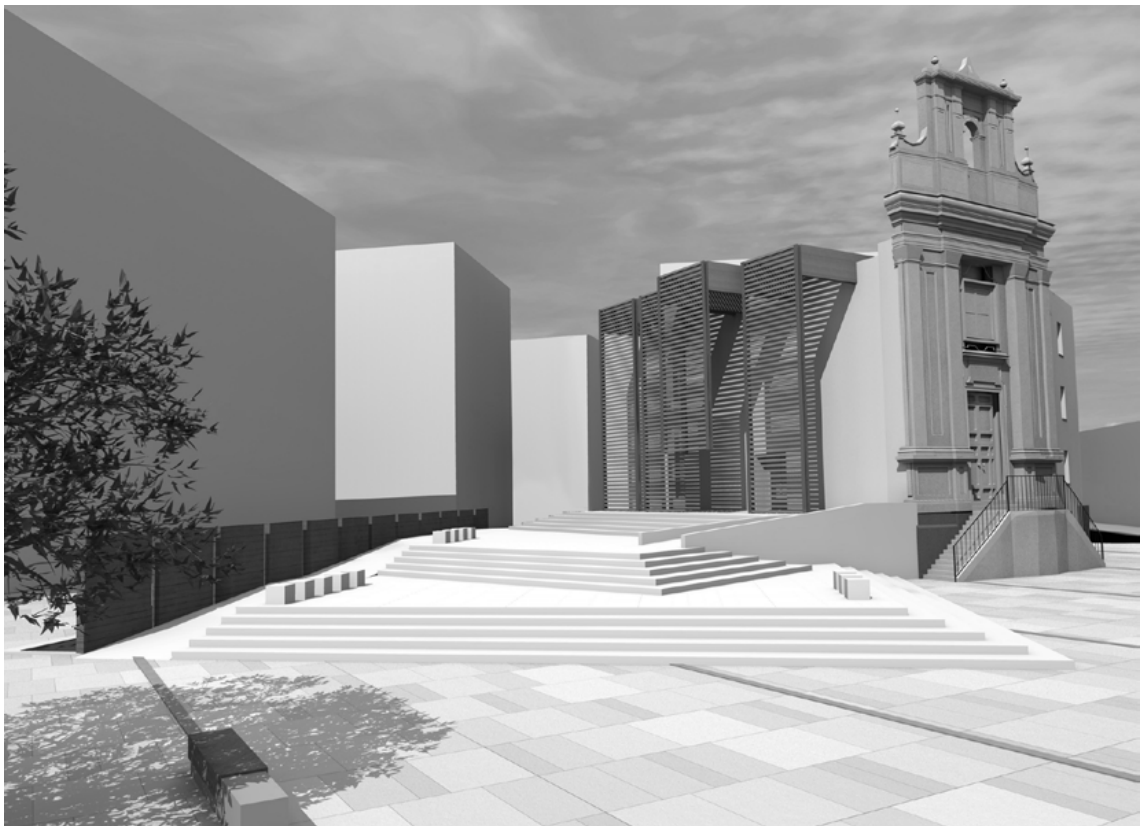
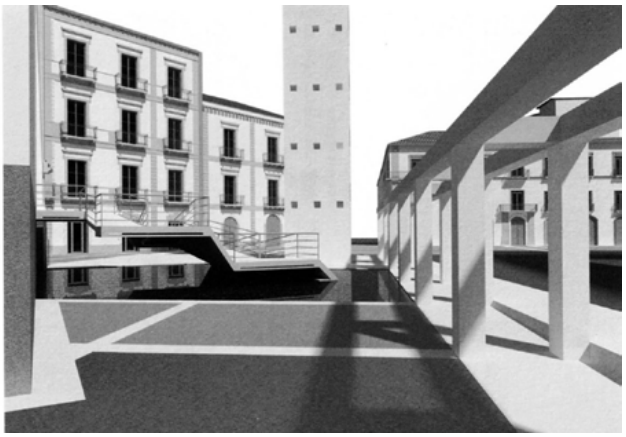


Figure 3a. Canfora - Costanzo; **3b.** Lombardo.

Figure 4a. Altomonte - Iero; **4b.** Barbalace - Comi.



The Right to architecture seen as "diligent research". Form of dissent, reclaiming space practices and the power of the project

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In the field of architectural and urban design, Modernity shows off itself as the liberation of rationality from the prejudices and limitations of history. As an immediate consequence, the existing city was banned and the new one was raised through an act of abstraction with a clear political significance (Marzot, 2014). Furthermore, Modernity claimed being not the result of emerging new conventions but as the natural answer to the rediscovery of a logic inherent to all human beings since ever, propelled by the industrial capitalism, considered its own more objective interpreter. This position started being questioned from post-modernity onward, by arguing the supposedly universal rationality was nothing more than a language, as such equivalent to all possible languages (Rossi, 1966). As a consequence, architectural and urban design started reflecting upon the new condition of modernity as the effect of a crisis resulting from the subversion of its socio-economic premises. In the emerging perspective, the Heritage of Modernity equals that of any other precedents (Monestiroli, 2004) and appears as the new goal. This paper aims at investigating the effect of this strategic shift both in the design practice (Ungers, 1978) and theory (Caniggia and Maffei, 2017). Different positions are compared by selecting texts and projects. The purpose is twofold: to consider the relation between urban morphology and building typology as the foundation of the new design strategies and to emphasize the emergence of a meta-linguistic approach to architecture. Globalization and its crisis seems to have opened a new perspective, where the project appears not anymore as a discipline but as the unpredictable premises of any possible science.

1. PROLOGUE THE HUMAN CRISIS

1.1 Man is outdated

According to Umberto Galimberti, who is considered one of the most articulate interpreters of the contemporary era, we have for several decades been the involuntary protagonists of the apparently unstoppable crisis of the concept of man. In support of a paradoxical, and in some ways disconcerting thesis, the author repeatedly invokes the argument of technique, captured in its progressive egress from the horizon of reference of classical-humanistic thought (Galimberti, 1999). In this perspective, technique no longer appears as an instrument through which the living body - or the *lieb*, clearly distinct from the *korpen* as a "conditioned" body (Husserl, 2002)- emancipates itself from its programmatic condition of structural inadequacy with respect to nature, in which it is involuntarily "thrown", but now presents itself as the very "environment" in which man is provocatively "called" to act. Paraphrasing Gunter Anders, one of Heidegger's most prolific and intellectually restless pupils, it follows that "man is outdated" (Anders, 2002). In fact, from an original "civil servant of the species", as Schopenhauer himself had already predicted (Schopenhauer, 2002), he has, without his knowledge, become a "civil servant of the technique". Galimberti, following a long tradition of thinking initiated by Anna Harendt (Harendt, 1964), who finds one of her most illustrious followers in Giorgio Agamben (Agamben, 1996), maintains that it was the organisation of concentration camps, in its perverse dynamics and dramatic rituals, that decreed the irreversible end of the Anthropocene (Caffo, 2017).

In all honesty, this is the completion of a project intentionally pursued by the bourgeois culture, launched in the aftermath of the Enlightenment revolution, which was very clearly explained in the above-mentioned terms, with the primary objective of expelling the "Other" from the very idea of modern society, through its progressive colonisation. It is not by chance that the premise of the phenomenon, which Agamben defines as a disconcerting "being outside from within" (Agamben, 1995), is found in the particular historical conditions that, demonising the social role of religions, considered as the source of superstition and obscurantism that Reason must do away with without reservation, will lead Nietzsche to prophetically affirm, in a statement that sounds unusually provocative still today, that "God is dead" (Nietzsche, 1977).

1.2 The colonisation of the "Other"

However, it is up to Carl Schmitt, considered the most eminent international law scholar and theoretician who appeared in the "short" century, to have grasped the basic premise of "modern thinking" in the colonisation process of the *New Lands* (Schmitt, 1991). The conquest of the Americas, to Schmitt, is not only the premise of a socio-economic-political revolution, but even more an unprecedented reversal of the paradigms of thinking, which becomes progressively modern through the affirmation of the colonisation process as a working practice of the nascent modern State form. The overcoming of the Pillars of Hercules, symbolically evoked by the *Plus Ultra* motto, which stands out on the heraldic coat of arms of the royal house of Castile, which promoted it materially and claimed its historical supremacy, evokes a crucial phase in the European civilisation process, of which the adventure narrated in the *Odyssey* is still the unsurpassed archetype today. This project reveals, in Schmitt's interpretation, the most devastating provocation addressed to Western culture by Modernity itself, indirectly called to account for its choices and its work. In fact, in that surpassing, which is reflected on both the factual and mental level, the overcoming of the "Nomos" manifests itself for the first time, well beyond the fascinating claims of the Myth. Although the term, etymologically speaking, expresses the concept of "pasture", that is, of an instrumentally bent nature, with the maximum economy of means, to the primordial needs of anthropic living, the indissoluble link between architecture and law can be found in it. In fact, for Schmitt, the "Nomos" expresses the archetypal power that, through the original subdivision of the soil, on which it inscribes its own implicit order, literally becomes space on the indefinite terrestrial surface, circumscribing its own action and establishing the law as a mnestic trace of its pro-

cess and an "attempt", sought by trial and error, of which it becomes an explicit "sign" (Pareyson, 1988). In this way, in itself necessarily conflictual, the conventional meaning of space and law takes on importance, and the responsibilities connected with the reciprocal implications become binding for all those who recognise its validity[1]. The centrality of the concept, which implies the pre-eminence of the body, in the sense of the aforementioned *lieb*, as a system of measurement and development of values, is destabilised for the first time by reaching the New Lands, without it yet recognising a form of explicit intent. In fact, in overcoming the proverbial Pillars of Hercules, Schmitt saw the sudden reversal of trend in the millennial process of anthropisation, no longer in favour of the land, and its conquest, but prospectively facing the sea, increasingly the object of a desire impossible to capture, despite the continuous attempts promoted in its favour, destined to prove itself as a convincing metaphor of Kant's "infinite evil" (Schmitt, 2002). Cacciari himself, who has critically re-read Schmitt's thoughts in the context of a more general update of so-called political theology, recognises in the process of de-territorialisation implicit in the dismissal from the "Nomos" - although he has historically postponed its affirmation with respect to its first manifestations (as we shall shortly argue) - a reversal of the trend that sanctions the apparently irreversible divorce between space and law (Cacciari, 2004). Therefore, the conquest of the sea, initiated by the unexpected reaching of the Caribbean coasts, completely randomly, coincides in fact with the progressive resolution and dissolution of all the symbolic ties that have come to define the sense of community within the tradition of thought consolidated in the Old Continent, with respect to which the New one offers itself as the "Other", in which all forms of political, cultural, economic and social dissent, in search of a promise of absolute freedom, soon will be provocatively called to "precipitate", initiating a rite destined to repeat itself, from generation to generation, without apparent suspension. Even more so, the conquest of the sea decrees the progressive discharge, destined to become a real farewell, from the structuring link between space and law, made possible by the performative-conformative-normative presence of the *lieb*. Tafuri, although not directly referring to the unsurpassed and still very topical lessons of the German jurist, is first to argue in disciplinary terms the impact on architecture of that reversed perspective. Reflecting on the culture of the Urban Plan in America, the Roman historian saw it as the completion of a process of problematic splitting, not only on a purely political level, between the State and the Market (Tafuri, 1973). The former, in fact, becomes the place where the expression of a purely formal democracy takes shape, willing to guarantee the latter an autonomy, never granted to the third state in its "continental" development phase, provided that the new entrepreneurship acts in exclusively economic terms and does not aspire to claim roles of institutional representation[2]. It is, indirectly, the delegitimisation of the aforementioned triangulation in which, quoting Pareyson, the "doing", while doing, progressively meets its own rules, acquiring consciousness and translating into a "know-how" that claims the role of representation of the former. In this way, architecture is bound to lose its original autonomy and significance. Forced to operate within a false horizon of reference and freedom, which in fact does not allow it to be translated into an indissoluble link between space and law - in this sense prejudicially obliged by that same law, embodied in the Plan, which is the operative expression of the Enlightenment "logos", which precedes it and conditions its course - architecture helplessly witnesses its loss of role and corresponding civil responsibility, becoming the "bachelor machine" of that same corporate culture. The return flow of Eclecticism from the New Continent, where it fully expresses the perspective of the multiculturalism of the early settlers, to the Old one, in which it is reduced to historicist rhetoric, is a phenomenon that is mostly unexplored, or a potentially very fertile field of research, which allows to document the effects generated by the loss of the space-law link within a discipline now resigned to become a nostalgic meta-narrative of an illustrious, by now remote past. If the logic of the "list", launched by the *Encyclopédie*, is confirmed as overcoming that organically organised and hierarchical knowledge, which the *Ancien Régime* elects as its own foundation, strategically used by the Enlightenment's

1 As a spatialised law, the *nomos* precedes its established representation, the *logos*.

2 In this sense, Tafuri's position is resolutely pessimistic with respect to the nature of the constitutional pact underwritten by the American people, in the enthusiastic terms in which Anna Harendt refers to it (Harendt, 2017).

maîtres à penser in order to promote the delegitimisation of its own political antagonist, the architectural catalogue, initiated by the abstract logic of the *Précis* by J.N.L. Durand (Durand, 1802), of which the eclectic drift is the inevitable conclusion, is the necessary complement. Technique, for the first time in the history of the West, divorces itself from reason, translating into a simple valueless resource, freed from any conventional implication, and from the power system it embodies, in order to make itself absolutely available to a combinatorial logic that, claiming a pre-eminence of both time and space, acts as a universal presumption[3]. In reality, we are witnessing a dangerous precedent, which anticipates in problematic terms the issues that Galimberti ascribes to Modernity in the broad sense. In fact, what is clearly presented as a legitimate political choice, in contrast to that made by the *Ancien Régime*, is in fact presented as the "natural" and "inevitable" outcome of a process of liberation from a millenary historical prejudice, which would have forgotten Reason as an indisputable source of Absolute Truth (Guénon, 2014). The "urban forest" predicted by Abbot Laugier, as a visionary expression of bourgeois living, significantly destined to be included after the model of Corbusier's *Ville Radieuse*, thus becomes the operating metaphor of a return to nature, not to be understood as a mere *viaticum*, but as the ultimate destination. The exodus from pre-revolutionary "sovereign captivity", in this way, does not imply a "promised land". On closer inspection, the way in which modern thought insists on identifying, in purely logical terms, industrial and natural processes, reproduces the same ideological premise elaborated by philosophers. The colonisation of the "Other" has thus been definitively accomplished.

1.3 Post- and Hyper-Modernity

940 It follows that what is Modern presents itself as a "crisis project" (Biraghi, 2005), no longer understood in terms of the messianic premise of a new world, but identified as a world itself, which man, by now reduced to a "dimension", seems condemned to inhabit, performing on the urban scene, in spite of himself, the paradoxical condition of a "Chained Prometheus". It should therefore come as no surprise to us how the reflection on "living", started between the two wars in the short 20th century and destined to last uninterruptedly until today, even through different interpretations and continuous contamination between knowledge, expresses a form of obvious dissent towards the aporias of Modern thinking. Similarly, it is not surprising how the "presence of the past", paraphrasing the title of the first Venice International Architecture Biennial Exhibition of 1980, with which it is customary to introduce, at least in historiographical terms, post-modern architecture, is an extreme, out of time attempt to recompose that which has been shattered (Cellini, D'Amato, De Bonis and Farina, 1980). In this sense, it is no coincidence that, despite the diversity of approaches, which cannot be reduced to a uniquely determined position, the common denominator of the proposals turns out to be a critical reinterpretation of the relationship between Urban Morphology and Building typology. Such a disciplinary approach, confirmed in explicit antagonism to the pervasive power of Urbanism - the legitimate heir of Enlightenment Rationality - at least from the late 1950s, thanks to Saverio Muratori's pioneering studies, has nonetheless by now exhausted the original provocative thrust (Muratori, 1959/60). It is no longer about that unprecedented reflection on the city's life cycles, with the aim of bringing out the aporias of International Rationalism, whose assumed universality is manifested through the necessity of the Plan, but about its compromising outcome. If by now "the king is naked" and Rationalism, in its various meanings, reveals an inescapable conventional character - even in the absence of a process of legitimation that justifies it as such - thus reducing itself to language, like the others - its overcoming is celebrated, following a problematic shortcut, through the kaleidoscopic multiplication, and the implicit equivalence, of languages and methods, deprived of historical contextualisation and levelled on the "eternal present". The misunderstanding produces

3 In this way architecture is reduced to a simple production, whose value is limited to the producing (the combined logic of the compositional method, or the *Parti*) and to the product (the whole as a result of the composition, or the *Ensemble*). The technique acts as a simple *a priori* datum, deprived by now of any conventional meaning.

devastating results: instead of leading to the overcoming of the logic of the Plan as such, the criticism of rationalism only leads to the proliferation of codes that the Plan allows for as its possible interpretations, which will be all the more important, the greater the degree of freedom that is rhetorically pursued. Overseas culture becomes the dominant model. The business market is simply replaced by the language market; material work/goods are replaced by intellectual work/goods. To inhabit the "Other", in this perspective, simply implies the choice of the code that is considered more suitable to one's own needs and to the relative *mise*-en-*scène*. In such a scenario, there is only one voice of clear dissent. In a masterly essay, *Delirious New York*, Rem Koolhaas tells the story of the epic clash between Architecture and Plan that took place in the American metropolis between the end of the nineteenth and the first half of the twentieth century and the skilful stratagem[4] through which the former claims to have power over the latter (Koolhaas, 1978). In fact, by pushing the use of the options that come with the new materials and technological patents to the extreme, corporate culture is progressively able to free itself from the cogency of the Plan, reduced to a temporary construction site, progressively voided of any form of legitimacy, within which to experiment with a new prototype, which slowly reveals itself as a retroactive manifesto through which the relationship between urban morphology and building typology can find an unexpected relevance: the hybrid building[5]. In this perspective, *Bigness* is increasingly defined as a Promethean thrust, pragmatically projected in search of itself, finally freed from the improvident chains of universal rationality embodied in the *Grid*, through which architecture aspires to identify with the city (Koolhaas, 1995). The "delirium", as Cacciari recalls, refers to the overcoming of the implicit limit of the Plan as a minimum instrument of containment of entrepreneurial anarchy and, at the same time, expresses the possibility that architecture can once again incarnate that limit, shaping a legitimisation process, from which that same Plan, in the modern meaning of the term, is missing. Thus, it becomes a reference in which to inscribe and circumscribe the idea of a clearly post-modern community (Cacciari, 2004). Koolhaas's young hopes would soon be thwarted by events destined to promote forms of exasperated cynicism with respect to the expectations that have matured. In fact, during the same years in which the Dutch scholar wrote his own essay, capitalism began to transform, from industrial to financial (Sassen, 1997). By overcoming the equivalence between currency and availability of gold reserves, and the progressive liberalisation of the credit instrument, it not only definitively removes the very concept of limit from Western culture, decreeing its uselessness for the purpose of an understanding of the present time, but it also leads to extreme consequences for the de-territorialisation and de-reification process already initiated by Modern thinking. The globalisation processes succeed in destabilising national borders, decreeing the progressive dissolution of state sovereignty and of the relevant institutions, in fact voided of any form of legitimacy, introducing an unprecedented number of resources to the international markets and allowing potential citizens/consumers to discover the option of freeing themselves from the relative socio-economic conditioning of which they must bear the burden. Persuasion is promoted through extraordinarily facilitated and apparently unreserved access to credit. The provocative call of the "money god" feeds a new lifestyle, which is widely generalised and clearly beyond individual possibilities, nonetheless disrespectful of a prudential correspondence between wealth produced through one's own work and the level of debt contracted, thus contributing to exacerbating the collective deficit and leading to an asymptotic identification between desires and possibilities. In the face of a silent minority that, by culture and tradition, resists the seductive power of the "sirens" of the so-called creative finance, the majority becomes angry, unaware of the fact that the condition of promised freedom is actually based on the "chains" of debt. The system is so perverse that, in order to free oneself from a condition of financial distress, one is often forced to resort to further forms of exposure, thus fuelling an endless spiral without means of escape. When money becomes a commodity in itself, what was presented as a tool to reach the "promised land" translates into an end and often, the end of every possible imagined world, confirming the compulsion to repeat the heterogenesis of ends in "Modern Thinking". Thus, the initial

4 This is, without a doubt, an effective update of the Trojan horse.

5 In this way, the pre-eminence of technology, understood as *praxis*, over its normalisation for productive purposes, in the form of *poiesis*, finds full expression in modern times.

euphoria, associated with the condition of freeing oneself from the narrowness of the previous life, whose circumscribed horizon of reference inhibits the very possibility of seeing "beyond" and "differently", is soon replaced by a condition of widespread panic, generated by the fear of not being able to honour the contracted debts. Life, dreamed of in this way, can quickly degenerate into a nightmare from which it is difficult to wake up. Once again, the colonisation of *elsewhere* is expressed through the imposition to inhabit that which is not habitable: the exterminated field of vagueness, uncertainty and multi-voiced rationality. Once again the words with which Carl Schmitt, in the conquest of the heavens, after that of the seas, had already glimpsed at the last phase of dissolution of the *Nomos* and the loss of significance of the concept of space in the construction of the rules of civil coexistence in modern times, sound prophetic (Schmitt, 2015). The acceleration induced by the globalisation processes, in fact, leads to measuring everything in terms of time. Whilst distances are now defined in hours and minutes, and no longer in kilometres and metres, the technique that governs ultramodern time is Logistics, the successor to Urban Planning, which proves to be outdated, as it claims the management of the processes of transformation of space. Similarly, the instruments available to the former to manage time are the infrastructures for the mobility of goods, material and immaterial, people and resources, increasingly organised in an intermodal logic, while the latter still involves settlement models in their interscalar variability (FIG. 1). Living in the present means being citizens of an "ecumenopolis" founded on the unlimited possibility of moving within a surface that tends to be neutral, taking advantage of all the possibilities that arise there, with respect to which the value of architecture and the city is increasingly reduced to the sole function of facilitated access to the theoretically unlimited possibilities of the network, of which they define the strategic nodes (Marzot, 2018).

1.4 The Post-human Condition

In spite of the current extensive literature on the reasons that have led to the financial capitalism crisis, in the aftermath of the collapse of sub-prime mortgages in the international market, basically sought within the relative structural complexity, supported by sophisticated algorithms that have escaped the control of those in charge, the eminently political meaning of the impact has been completely underestimated. After all, it involved the foreseeable consequences of a defective process, slow yet relentless, surreptitiously initiated ahead of time, which robbed financial capitalism of the necessary support by those who had decreed its global success: the citizens/consumers of the globalised world. In this perspective, the distressing landscape of ruins resulting from the phenomenon of the abandonment of disused areas and buildings, well beyond the prefigured horizon through disposal processes during the post-industrial phase, expresses an unprecedented "form of dissent" by a new proletariat that has become aware of itself through a "negative dialectic", that is, by avoiding the growing indebtedness and the unbearable psychological and material burden as a form of contractualised government action, in the present time, of perverse complicity between national governments and international financial dynamics. It is therefore an unprecedented crisis, in that it is not generated by the capitalist system itself and its allies, which can be interpreted in terms of the master/slave dialectic of Hegelian memory, although it has been reversed in a mirror image of its original formulation. The latter, in fact, realising that the richness of the former derives from the latter's work, deliberately removes the latter from the system of reciprocal implications and conveniences, on which mutual recognition is based - made possible by syntheses - making it available for a new adventure of the spirit, unfolding through an unprecedented test/antithesis relationship. If then, as in this case, the Lord has no face but that of an impersonal system - represented by financial entrepreneurship alien to the territorial dynamics, prejudicially recognised by the State, through governmental action, and legitimised subsequently by the complicity of the Slave, who gave in to his flattery of happiness and life prospects in a better world - the manifested dissent acts retroactively as a form of dismissed power compared to that falsely established, encouraged by the additional disenchantment with respect to the latter. The progressive dissolution of the financial world, reduced to a *Great Space* without internal boundaries (Schmitt, 2015), leads to a profound change in the role of architecture. In fact, the globalised world presents itself as a

simple hypothesis among the many possible ones, recklessly endorsed by a democracy that has by now degenerated into a "governmental" form, disrespectful of the demands emerging from the territory, imposed with the complicity of the States, in a desperate attempt to survive the current delegitimisation, favouring relations of power that are explicitly extraterritorial whilst explicitly becoming their instrument. Whilst the wicked pact between financial and administrative power inevitably promoted a generic architecture, at most legitimised by the cult of personality imposed by the star system, its unstoppable deterioration has been reducing constructions to sheer quantitative data.

2. DIALOGUE. TO FREE ONESELF FROM THE INDETERMINATE

2.1 The identification process

Although it may seem paradoxical, *xenophilia* is the necessary, albeit not sufficient, premise for every process of identification and mutual recognition (Simondon, 2001). In fact, through the progressive openness towards the "Other" we free ourselves from any form of prejudice, through which our "social-historical" being is expressed, on whose implicit conditioning our "individual" being depends[6]. The liberating function of this opening, however, is nothing more than the simple premise of the process mentioned, the tool/phase through which identification and recognition can take place (Marchesini, 2016). Tending to the "Other" does therefore not mean identifying with and in the "Other" - and even less "colonising" it - but relating to in a relationship of mutual involvement; through it and, in so doing, accepting to challenge oneself completely. This is the original, and radically adventurous, meaning of any dialogical relationship in Western thinking, the success of which we can never take for granted. The structure of dialogue, as Plato teaches us, is never between individuals who are already in a position to understand themselves, or who can assume "communicability" (Agamben, 1996), but between subjects who work together to create the conditions so that it is possible to reach an agreement, ending up constituting its occurrence medium. Dialogue, in this sense, is a process of construction of meaning that presumes an asymmetrical relationship, that goes beyond any form of conventionality, in order to re-found its premises[7]. As we have tried to argue, the "original sin" of Modernity, as a "crisis project", is not, therefore, that of having artfully provoked the escape from an existing value system - which constitutes, in itself, the necessary scope of every crisis- but of not having created the conditions to replace the existing ones with new values. It is not by chance that this is Nietzsche's thesis when he speaks of Nihilism as the incurable evil that afflicts his time (Nietzsche, 1975). This happened simply because that liberation from existing conditioning, necessary but not sufficient to pursue new horizons of meaning, from a simple means has been translated into an end, decreeing the conclusion of an entire way of thinking based on its instrumentality[8]. The absolute freedom that potentially derives from it, and that can, as such, literally terrify, only allows one form of conditioning, to prevent the onset of dangerous anarchist drifts: the government of Reason. The presupposition of its existence, as for Man, is the unexpected on which Modernity is based. The result is the aporia that Modernity itself has tried in vain to remedy by extending the scientific method beyond the confines of the natural world, effectively initiating the development of the so-called social sciences, and thus removing the

6 In spite of Rationalism, in its various forms, according to which the "I" would constitute the foundation of every form of collective thinking, Realism maintains, through the disciplinary contribution of Social Ontology, that the individual dimension must presuppose a condition of mutual recognition as its principle of legitimisation, which precedes it temporally and structurally, represented by the pre-eminence of the "we" (Caffo, 2017). The weakness of the rationalist position, in this sense, would consist in exasperating the conventional nature of social reality, traceable to the form of the "pact" undersigned between the parties, finding an illustrious and completely instrumental precedent in natural law. In addition, the thesis of the non-existence of a reality other than that organised by the community of human beings would be implicitly confirmed, summed up in Nietzsche's peremptory affirmation, according to which "there are no facts only interpretations".

7 In the structure of the Platonic Dialogues it is Socrates who is always tasked with taking the discussion beyond the horizon of mutual understanding of participants, provoking an unprecedented reflection in both form and content, whose hidden *entelékheia* is to build a new common ground, i.e., an understanding at a higher level, not contemplated before the beginning of the confrontation.

8 It is a form of "heterogenesis of ends", as advocated by Giambattista Vico.

central problem of the political foundation, and of the relative legitimacy, of both terms. In fact, if the original task of politics is to ask oneself what man should be, by recording and circumscribing his role within a horizon of "social-historical" meaning and reference, in dynamic transformation (which constitutes his destiny, of which only man himself can claim paternity subsequently), the removal of the relative concept - as the result of a discussion that is constantly renewed over time, giving to this term the sense of History - is equivalent to reducing politics to the mere public administration, through the State, of private interests in a condition of perennial mutual conflict and competition, within the Market. This justifies, therefore, the attribution of "formal" to American democracy on the part of Manfredo Tafuri. Even more so the cogency of the Plan is explained, the instrumental expression of the Universal Reason, which constitutes the necessary embankment to the inevitable entropy generated by the continuous movement of molecular entrepreneurship[9]. New York's architectural "delirium", with respect to the abstractly containing function of the Grid, therefore stands for the intentionally provocative attitude of a movement, an expression of civil society that, through the instrumental function of technology, prometheically freed from administrative chains, becomes aware of itself, to the point of showing the option - without nonetheless claiming it - of a new way of understanding political practice through the construction of space. This, in fact, is the extreme meaning of the Retroactive Manifesto.

2.2 Resistance of the Urban Plan

Whilst the Plan, since its modern origin, exercises an eminently "containing" function of bourgeois exuberance, conventionally assumed as "absolute", which is freed from any form of historical prejudice, contemporary financial capitalism acts on the market as a propellant able to profoundly alter the initial molecular configuration of the enterprise, in favour of scaled variations, and of a critical mass, which act potentially in support of the process of claiming a (political) role, on the part of entrepreneurship, which has remained mostly latent, in the unconscious state, in the fore-running formulations experimented in the New Continent[10]. This has led to the delegitimisation of the sovereignty of nation-states, but at the same time has strengthened their instrumental function to the benefit of capitalism itself. Through the conformative role of the Plan, in fact, the States have guaranteed, at the different levels of territorial management, the "documentality" (Ferraris, 2009) nature of financial capitalism, thus confirming the paradox of "nominal" legitimisation in the absence of "real" legitimisation, which can only be derived from the territory and its internal dynamics, even when determined by the necessary reaction to external urging. This further reaffirms, at the same time as the new global proletariat explicitly "disobeyed" the imposition of the credit law - blatantly defusing the expectations of its promoters, plunging them into an unfathomable abyss - the need to delegitimise the instrument that capitalism itself has intentionally implemented in order to pursue its own logic (Marzot, 2016). This happened above all because the Plan continues to exercise the above-mentioned "documentary" function[11] in a totally hypothetical manner, i.e., without the conditions that can justify its expectations, or even by basing them on totally falsifiable premises. The plan's resistance should not surprise us. Social reality, especially in the interpretation given to it by analytical pragmatism (Searle, 1996), does nothing but express relations of power. The delegitimisation of the Plan, therefore, would imply the failure of those relationships that, through its "documentality", have been established. The Plan, therefore, today is positioned as a *katekon*, that is a "power that holds back" (Cacciari, 2012) the ongoing defective action and its ability to dissolve the symbolic

9 In this way, one can understand how the double public/private and State/Market dichotomy, to which the so-called formal democracy is simplistically reduced, is based on the opposition between Leviathan and the Multitude and goes into crisis mode when the latter, organised on the basis of oligopolistic cartels, takes on an unprecedented critical mass, beginning to claim political and government roles, the expression of civil society, as has increasingly happened since the 1980s, according to a trend that is still confirmed today.

10 This possibility is not made explicit in Koolhaas' study.

11 It is a representative delegation of interests expressed by the territory, with which the action of government must comply, in order to guarantee a correspondence between the "effects" produced and the legitimacy of the relative founding conditions. It follows that replacing the latter with hetero-directed factors inevitably produces the distortions that we are witnessing in the present time.

bonds on which social reality has been founded since the 1980s. Once the founding law of financial capitalism has been delegitimised from within, it becomes indispensable to distrust all the instruments it has used. This does not mean rejecting the Plan *tout court*, but every form of "documentality", i.e., the established representation of a social reality that becomes falsifiable because it does not correspond to the power relationships emerging within a territory, and based on them.

3. EPILOGUE: THE IDENTITY PROJECT

3.1 Recycling and urban regeneration

The culture of recycling, well beyond the limited horizon of meaning that has always provided its technological interpretation, has the strength to overcome the aporias of the Plan, or rather its inability to represent the relationships of power existing within the territory, if not even falsifying them, providing relative contradictions with full spatial evidence. This is possible simply because this culture is expressed through the very claim of the abandoned and/or underused sites in the city, in the process of being transformed, regardless of the hypotheses of enhancement suggested by the Plan.[12]. These spaces, made available by the crisis of the financial system and the collapse of the social reality based on it, have no real value, in social terms, except that nominally attributed to them by the Plan, with the aim of guaranteeing those budgetary values on which the entire credit system is based. Within this world, now clearly virtual, reactivating unused spaces through experimental practices has a precise political meaning. In fact, it implies the possibility that a new *Nomos*, based on a renewed "significant" separation from the earth, might emerge on the horizon, which would experimentally distinguish its parts and redefine the roles of man and the reciprocal relations of what is similar within new community forms (FIG.2). In this sense, it would be a Copernican revolution of the spirit with respect to the Modern way of thinking. Instead of hypothetically presuming the existence of rationality, and of man as its vehicle[13], without being able in this way to account for either one, rationality to which to preliminarily conform the organisation of Nature - and of the body - designated to carry its significant traces as if it were a neutral, basically indifferent support, it should be better to experiment with the simple possibility of existence, starting again from the interaction between body and environment. Phenomenology and Existentialism had already paved the way for the overcoming of recognised Rationalism, basing their own arguments on the spatial value of "coming to light". This lesson can be rehabilitated today, on condition that the event and the "occurrence" are not recognised as the ultimate form of the liberation of desire and imagination, degenerating into dangerous drifts of which we have been aware since the crisis of the 1970s. On the contrary, they must become the premises, through the comparison of the relative outcomes, for the political reformulation of new forms of conventionality of choices, on which to base social reality, through unprecedented processes of self-limitation. Only by giving back to architecture the dignity and by empowering the design, can it be understood as its legitimate representation, to which the construction of social reality can be traced, as a guarantee of the correspondence between premises and effects, avoiding the distortions that we are still witnessing today. This is, moreover, the accomplished meaning of Autonomy: to establish their own law through a process of self-determination.

3.2 The Right to Architecture

The constructivist misunderstanding on which the "falsifiability" of social reality is based, which has found its legitimising framework in modern Scientism and its last promoter in the financialised world, is derived from not recognising another reality outside of the socially constructed one. As it has been widely argued by New Realism (Ferraris, 2012), this depends on having artfully confused Ontology and Gnoseology, identifying the thing in itself with what

12 It is the same strategy described by Koolhaas, although it is exercised on a different scale.

13 These two premises are the operative assumption for every form of "falsifiability" of the social reality of which, paradoxically, the scientific method is proud (Popper, 2012).

we know about the thing itself. In this way the constructivists are precluded from knowing what they are looking for, i.e., social reality, because they prejudicially assume its foundation, i.e., man. The right to architecture, in this sense, means recognising that man is never "the one who is given", whose existence is presumed, but "the one who can be found" through diligent and continuous research, admitting the possibility of failure. This research is Architecture and claiming its right means not only recognising the political substance of man and the relations of reciprocity that he establishes with his fellow human beings within a community, but admitting that this cannot happen outside the claim of a space to inhabit and that this claim can only be tentative, proceeding by trial and error, with respect to a condition of structural eccentricity and inadequacy vis-à-vis the world, be it natural or cultural, in which we are thrown. In addition, it means admitting that Architecture, as a path towards truth, always precedes the project, which constitutes its "document", or the subsequent legitimisation, founding its social reality.[14]. The confirmation that we are not equipped to face the challenges that the world itself throws at us can be found, not by chance, in the need to be educated. Without such education we would live in a state of continuous disorientation and we would not be able to survive the resulting trauma. For this reason, one cannot inhabit what is indistinct, as the condemnation of what is Modern would have it. We can only live in what is separate, and hence limited, because the search for man and his identity is made by emancipating oneself from the infinite, from the undetermined and from the indistinct. The revaluation of architecture and its historical role consists precisely in the ability to free oneself from any law other than the law established by architecture itself in describing the path of cognitive self-limitation with respect to an endless horizon of possibilities, which constantly provokes us, pushing us towards a bottomless abyss, wrapped in the coils of a disorienting vertigo. If desire is at the same time "the possibility of being and not being" (Agamben and Deleuze, 2011) - or the *dynamis* of antiquity - architecture measures the critical distance that separates us from this state, impossible to inhabit, through that specific form of activity - or *energheia* - that is never separated from its own purpose and relevant effects. It is therefore a matter of understanding architecture as *praxis* (Harendt, 2017), distinguishing it from production understood as *poiesis*, i.e., a hierarchically ordered sequence of distinct operations aimed at pursuing a pre-established objective, and firmly claiming this right[15]. The ways and times of separation measure its quality as the ability to build a clearly defined space to live in, defining at the same time a specific and corresponding idea of man and community within which the former can find himself through defined relationships with his fellow human beings. In the knowledge that what was once found is not a given forever, but can be lost and called into question endless times (Simondon, 2001).

14 This is an important clarification with respect to the misunderstandings generated by an ambiguous definition of "documentality", as a form of power that establishes the social reality based on writing and not on the political decision that legitimises it, while preceding it. In this sense, affirming the pre-eminence of architecture over design means basing the value of convention on experience and its immanent nature, without which any subsequent narration and/or representation is inevitably "falsifiable", distorting its effects.

15 In order for *poiesis* to literally put social reality into practice, it must be founded on praxis, in fact representing it through a project, which constitutes the conventionally predetermined purpose, on the basis of historical belief, namely *doxa* (Marzot, 2017).

Figure 1. Since 1994, the Channel Tunnel Railway Link was conceived to give shape to a trans-European vision, capable of connecting France to England. The project confirms the delegitimisation of Urban Planning and the Plan through logistics and infrastructures. Controlling accessibility and flows implies governing territories, regardless of their vocations.

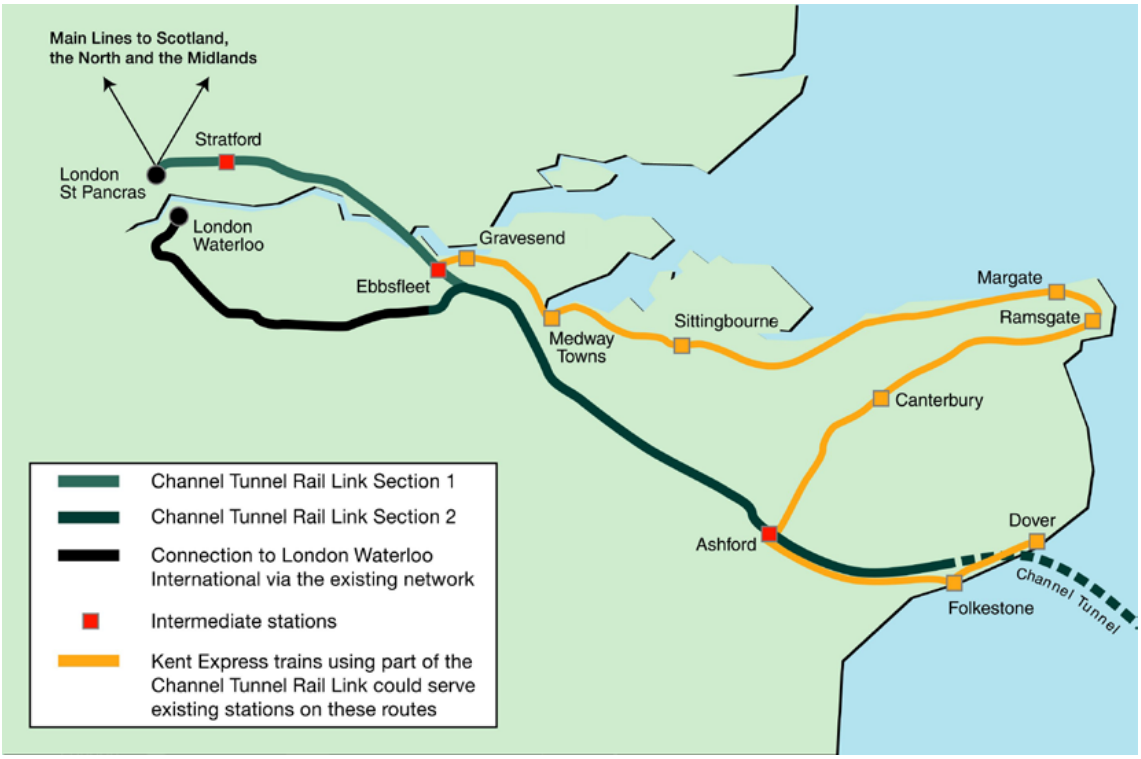

Figure 2. Former cargo terminal Ravone, Bologna. The internal perspective of an abandoned warehouse effectively expresses its potential to achieve fresh results. Due to the financial crisis, the development of the entire area has never begun, condemning the properties to fall into a provocative landscape of ruins. Heedless of the lack of surrounding conditions, in 2015 the Municipal Operative Plan legitimised the destiny of the sector to become a high-density urban district. The reactivation of spaces with temporary uses, affirming the experimental function of architecture as a practice, could contribute to prefiguring alternative scenarios, conforming them to the city's actual needs and suggesting prospects that the logic of the Plan is not structurally able to conceive. Despite this, the advantages of politics resist, confirming the alliance with the laws of finance and revealing themselves unconcerned with the change taking place.

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Urban renewal of Oran city center into question

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Urban renewal is a natural phenomenon in the city that has always operated through different processes of urban change. However, if this approach is not new to the city, the urban actions in the city of Oran continue to be oriented towards the construction of new peripheral districts causing an unprecedented urban sprawl. Meanwhile, the historical center of the city is losing its attractiveness facing the new neighborhoods and knows no global rehabilitation urban project. The downtown has, indeed, many assets to enhance. However, it suffers from many lacks, especially public spaces aesthetic and functional quality, connection between these spaces that remain less favorable to the pedestrian movement and also in terms of architectural insertions. The city center knows building speculation operation generating unreasonable urban renewal marked by the integration of new high rise buildings. Urban actions do not respect the architectural and urban specificities of the city center.

The issue of this paper refers to a main question: how to enhance the attractiveness of the city center and initiate a requalification process? The hypothesis we are advancing is that a reflection on the urban landscape and public spaces are the levers of the urban renewal of the city center. The aim of this study is to analyze the neglected central spaces that present urban qualities to consolidate, if not to reveal, and to highlight the constitutive elements of their landscape and urban forms.

Introduction

Urban renewal is a natural phenomenon that has always operated through different processes of urban changes (Masboungi, 2002). When the city was long circumscribed by ramparts, it renewed on itself to develop. Urban forms are therefore the result of a long process of stratification or substitution. Today, at a time when the inconsiderate urban sprawl of cities is widely decried, the question of the mutation of urban forms and the modalities of insertions of new constructions into existing fabrics is keenly posed (Allain, 2004). In Europe, urban policies have been created to go with the changes in the city central cores. They have also been influenced by economic issues and sustainability concerns. The English urban planning (PPG 12, 1992) and the French law (SRU, 2000) bear witness to this determined policy (Allain, 2004, Ingallina, 2001). This approach involves working on neglected spaces that have the potential to be preserved and reinforced in an integrated urban project to "making the city out of the city" (Grumbach 1998, Masboungi 2002).

However, while this approach is not new in Europe, it does not yet exist in Algeria. In Oran, as in all Algerian cities, the implemented urban actions continue to be oriented towards the construction of new residential neighborhoods on the periphery causing unprecedented urban sprawl to the detriment of farmland, open spaces and natural areas. This fast and chaotic urbanization has caused the historical center of Oran to lose its attractiveness in favor of new neighborhoods and not engaging in any urban renewal project (Mazouz, 2015).

The city center has many assets. Its geography and its deeply rooted urban and architectural forms contribute to Oran's urban landscape. They offer, indeed, a rich architectural heritage and successful public spaces with aesthetics and uses potential (Kettaf, 2013). However, the city center is neglected; its buildings are experiencing degradation, collapse and inappropriate substitutions without any reference to scale such as four-story buildings being replaced by 12-story towers. These urban interventions tend to annihilate the city's landscape and urban characteristic. Public spaces are deteriorating and remain exclusively dominated by vehicular traffic. The spaces of the city core, "so essential to urban life, suffer from the obvious lack of the most basic planning rules that would improve their form aspects [...] in terms of urban aesthetics and architectural quality "(Kettaf, 2013, p. 24).

In this issue, a fundamental question arises: how to enhance the quality of the existing city center and initiate a process of coherent renewal and redevelopment? How to insert new buildings without compromising the quality of the built environment as a whole? The hypothesis we are putting forward is that the urban landscape and public spaces are levers of the city's urban renewal. This renewal cannot be done in a sporadic manner and cannot be done by ignoring the existing characteristics of the urban fabric. It must be part of a comprehensive renewal policy that allows the establishment of laws, tools, planning regulations and architectural guidelines.

This article, the first step of a research-thesis, analyzes the modes of insertion of new constructions in downtown Oran from their morphological and visual dimensions. It examines their impact on the urban landscape through urban massing and building structures in relationship to the pedestrian scale. The goal is to highlight the absence of rules required for a coherent urban intervention and a more sensitive architectural integration in a pre-existing urban fabric.

Methodology

In general meaning, "townscape results from the weaving together of buildings and all the other elements of the urban fabric and street scene" […] so that – in Gordon Cullen's phrase – visual drama is released" (in: Carmona et al, p.147). Townscape is an ambiguous notion that addresses a perceived and lived reality, thus carrying a great deal of subjectivity. However, this dimension is essential in urban and architectural design, because it gives the city its character and identity and contributes to its aesthetics (Allain, 2004). Urban landscape is closely linked to urban forms as perceived in a totality way. Therefore, the analysis involves morphological and visual approaches (Allain, 2004, Carmona et al., 2003).

The purpose of this paper is to identify the insertion modes in downtown Oran. The

methodology used is based on a comparative analysis between towers built in the 1950s and those built starting in the 2000s. Both types are located on the main streets of the city center. We are focusing on four buildings: Leclerc and Antinéa buildings for the first type and the shopping-business center *Khaouadja* and residential building *Khoudja* for the second type (Figure 1). These insertions of buildings-objects have introduced a new urban configuration in the city center. However, while insertions of the first type seem to have responded to a certain number of town planning rules, those of the second considerably alter the urban landscape and seem to have ignored all key elements that characterize the traditional urban space.

This analysis is based on the examination of the morphological and visual dimensions and their components developed by the collective works of M. Carmona et al. (2003) and R. Allain (2004). It addresses the essential element of the building and its siting. How does the building occupy its plot and what relationship does it have with the surrounding buildings and with the public space? The analysis explores two scales of the urban landscape: the first is the urban volume, "the general envelope of the city and its ceiling"; the second is the envelope of surrounding buildings and their relationship to the pedestrian space (Allain, 2014). In this approach, the method of analysis focuses on the exploitation of numerous graphic documents, old maps and photographs and cadastral plans, to which is added literature relating to urban design and morphology linked to Oran urbanization. It also relies on in situ observation with the development of architectural surveys and taking photographs.

Forming process and urban renewal in downtown Oran

Formation of the urban landscape of downtown Oran

The complexity of the urban forms of Oran City contributes to its atmosphere and attractiveness. It is the result of a long urban evolution of a thousand years were Spaniards, Ottomans, French and Algerians have, the ones after the others, built, deconstructed and shaped new spaces. However, the French occupation (1831-1962) illustrates the most significant period of urban spaces production in downtown Oran (Kettaf, 2017, 2013).

The French intervention was an essential contribution to urban planning in Algeria. In a dominant way, the development of the city was conducted according to a traditional pattern based on an urban planning subdivision process. The city space is characterized by a continuous urban fabric structured by a hierarchical network of streets and squares and in which these constitute major urban landmarks. In this traditional city, the street-block-plot system is organized in a planned way and constitutes the fundamental element of the urban form. Up to 1930s, the occupation was progressive based on land uses availability and economic circumstances; the constructions, led by private initiative, progressively infilling vacant urban spaces. Buildings along the streets and around the squares are composed of 3 to 5-storey buildings that give a homogeneous silhouette to the urban volume. After the Second World War (1939-1945), classical logic was supplanted by Modernist patterns. First, tall buildings are inserted into the existing urban fabrics and then, freestanding buildings are set within a 'super block' system on the outskirts. This functionalist urbanism permeates to town planning that continued after Algeria's Independence in 1962 (Kettaf, 2013, Guerroudj, 2004).

Upheaval of the urban landscape of downtown Oran

Between 1962 and 2000, the downtown area did not change significantly. Urban interventions focused exclusively on the production of new residential programs on the city outskirts (Kettaf, 2013; Guerroudj, 2004). At the turn of the 2000s, in a period marked by new liberal economic policies, private actions took precedence over public actions and the city center underwent transformations due to a speculative real estate market based on land and financial opportunities (Mazouz, 2015).

This phenomenon of urban renewal is the result of private real estate developers who build new dwellings so called "high-standing", which spring up from within small block street patterns dominated by low-rise buildings (Mouaziz, 2017). They build higher-rise buildings that

increase density without worrying about the negative impact on the urban landscape and public spaces. They disregard the most basic rules of air and light penetration (Kettaf, 2013). The authorities having jurisdiction over giving building permits for the city center are faced with enormous challenges due to the absence of precise and detailed urban rules and architectural guidelines (COS, height, enclosure ratio, withdraws, easements ...), that should be integrated into urban planning tools such as the "*Plans d'Occupation des Sols (POS)*". These plans don't also provide a global approach to urban form and urban landscape (Kettaf 2013, Mazouz 2015). A POS available or not, a tacit rule applies! It is expressed, as N. Mouaziz argues, without any written record, the sole presence of a high-rise building in the neighborhood allows the developer to claim to reach the same height for his new building without checking if the height-to-width ratios of street enclosures are respected. This affects the urban landscape considerably, visible through an intense densification with buildings competing in height and leading to arbitrary solutions that have a lasting impact on the urban environment (Mouaziz, 2017).

Today these piecemeal operations occur at an increasing pace and affect the major arteries (lifelines) of the city center. Moreover, this phenomenon is also spreading to residential neighborhoods bordering the city center such as the peripheral districts of Bel-Air, Hippodrome and Gambetta. These neighborhoods consist mainly of low-rise single-family homes that are being replaced with new multi-storey buildings "thus weakening a horizontal urban fabric whose specificities are completely ignored" (Mouaziz 2017).

Morphological and visual aspects of urban renewal in downtown Oran

Urban volume

The city's urban landscape elevates sight over the other senses (Querrien, Lassave, 1999). Architecture assumes its importance here. Not the architecture of each building, but the architecture as a whole that makes possible an "art other than architecture", an "art of relationship", writes G. Cullen (1961). It is what brings it closer to urban composition. This refers to the notion of unity that qualifies a set whose parts are well connected and constitute a whole that seems harmonious (Thibault, 2012). The street level unity can be achieved by unifying elements such as buildings silhouette, plot widths and proportions (Carmona et al., 2003). In other words, the unit of a street depends on the integrated scale of buildings in relationship to their context. The integration of these buildings can help to maintain the coherence of the urban fabric as it can also modify the landscape by punctuating it with a focal element or by creating an imbalance (Mougthin, 2003).

In the context of Oran, modern buildings introduce a new scale that exceeds the average of that of existing buildings. They form unintegrated building-objects out of scale, thus breaking with the overall urban volume. In the traditional city, only a few buildings stood out from their context and marked the urban silhouette. Most of these were citywide public buildings that housed religious, political or economic functions. The space of the city is relatively homogeneous, but is "punctuated, paced by alternations [...] of symbolic places and ordinary functions" (Mangin, Panerai, 2009). A composition that in fact alternates the exceptional and the ordinary gives a strong legibility to the city spaces.

However, modern urbanism introduced in Oran from the 1950s is illustrated by the insertion of high buildings and the denial of the traditional urban order. The fundamental problem of the current urbanism is, as Von Meiss emphasizes, the verticality of ordinary elements indifferent to the urban fabric in which they fit (in: Carmona et al., 2003). This problem reappears in the city center and is expressed in the new constructions erected since 2000. The analysis of scale, location, relationship to the urban context, building tops treatment, suggests that the heights of the buildings are not approached from a global vision of the urban silhouette despite their considerable visible impact. Their integration is made only at the plot level based on purely speculative purposes thus annihilating the unity and breaking with the overall harmony (Figure 2). The multiplication of these one-shot operations undermines the legibility of the overall landscape of the city center and ignores its geographical and form characteristics.

Building layout

The urban block system is the fundamental unit of the urban fabric. It is composed of plots organizing back to back with a frontage that borders on the streets. Its buildings are established in lots forming the row and are composed vertically in a tripartite way evoked by a base, middle and top accentuated with a crown (Panerai et al., 2009). If this configuration is common in all buildings downtown, their scale, shapes and decorations change according to the styles and eras of construction. However, the ridgeline of the row is regular and gives a homogeneous appearance to the street.

The buildings of the early 1950s somewhat echo this fragmentation, but on a larger scale. They occupy larger plots and are composed of two separate volumes. The first volume fronting onto the street is located in alignment and attached to existing buildings forming the base, part of which consists of multi-storey car parking overlooking secondary or tertiary streets. The second volume is in setback, larger on main streets than on secondary streets, is a 13-storey, self-contained monolithic tower volume for the Leclerc building and 20-storey for the Antinéa building.

This mode of insertion based on building fragmentation preserves the harmony and unity of the main streets of Larbi Ben M'hidi and Tripoli. It allows keeping continuity and respects the alternation of building boundaries by different architectural styles, while responding to a common language. This approach maintains the sense of enclosed street space while reinforcing the perspective. However, this fragmentation impacts negatively the sunshine penetration on secondary streets while providing shade for long periods of time. The reduced width of these streets (about 7 meters) accentuates the lack of sunshine during the day. Nevertheless, the orientation of the Antinea building tends to minimize this effect by its perpendicular layout to the street.

The footprint of these buildings occupies a larger plot with a different shape than existing plots. These are characterized by relatively homogenous narrow plots with small courtyards or skylights at the rear occupying on average 7% of the plot area. In contrast, modern buildings have more spacious open courtyards because of both the width and the depth of the plot and the elevated building height. These courtyards allow for more flexibility. For the Leclerc building, the courtyard represents 15% of the plot and the 13-storey building occupies only 25%, due to the setback from the base. The Antinéa building occupies the entire plot with a base dug from the second floor of a large courtyard by which emerges an 20-storey building, occupying 19% of the plot area. These two layouts create the necessary clearance for ventilation and sunshine of the towers facades.

In addition to their function (ventilation, sunshine), these courtyards placed in front of the towers allow a hierarchical transition from public to private space. It is from the courtyard that the entry to the housing blocks takes place. The covered-way of the residence Leclerc or the elevated courtyard of the Antinea building express various forms of transition between public and private space while maintaining a visual connection with the street space.

The recent buildings' characteristics are in complete opposition to those existing, the result is discordant chaos in the urban landscape of the city. The shopping-business Khaoudja center stands at the corner of a major cross road and present a monolithic volume. The first two levels forms the base from which emerges a massive 13-storey body. The building fragmentation responds to logic contrary to that of the constructions of the 1950s. It is marked by a larger volume that overflows the base. In addition to its direct alignment on streets (12 meters on the main street and seven meters on the secondary street), its height does not change from one street to another and operates no withdrawal, depriving the streets and neighboring buildings of sunshine and necessary ventilation. In addition, the building occupies an area of 2500 m² whereas the other plots rarely exceed 600 m² (with the exception of landmark buildings such as the House of Culture or the old cathedral library). This building has no courtyard and the land use is total, thus creating a considerable rupture of scale with its surroundings. The second residential building Khoudja of 12 floors high is located in small block street patterns and in existing environment of one to two floors buildings. It also has no withdrawal with a frontage onto a seven meters wide street, while the yard represents only 6% of the plot area (Figure 3). This insertion mode ignores fundamental urban planning rules

and prevents potential evolution of the neighboring plots, noting that constructions change faster than plot patterns (Carmona et al., 2003).

The new buildings' heights, respectively 50 and 55 meters, considerably exceed the width of the streets (from 7 to 12 meters). The height-to-width ratio, which is expressed in H: W, determines the street enclosure and has a significant impact on the local climate of the streets and their activities. (Mougthin 2003, Carmona et al., 2003). Its consideration is therefore necessary for a good street design, because it influences pedestrian feeling and its comfort; it can be an important cause of space disaffection.

The streets enclosures resulting from the insertion of the new buildings exceed the average ratio of the city center which is from 1.6 to 3. They present ratios greater than 4 for the main streets and greater than 7 for the secondary streets. These high ratios of street enclosure clearly reduce sunshine and light penetration into both public spaces and surrounding buildings. They affect the pedestrian's perception of the environment and may lead to feelings of oppression, even claustrophobia (Carmona et al., 2003).

In this perspective, the ideal height / width ratio for the city center of Oran is questioned. Several studies carried out on Mediterranean cities concluded that, for a Mediterranean climate, an H: W ratio between 2 and 4 could present acceptable thermal comfort conditions in summer. This ratio tends to reduce the ambient heat, because the shadow of the constructions decreases the solar radiation. In other words, it's about finding a balanced sun penetration: limited in summer and higher in winter (Achour-Younsi, Kharrat, 2016, Lin et al., 2017). The microclimate is an essential factor that must be taken into consideration in the insertion of new buildings in downtown Oran so that more comfortable spaces can be produced. However, this imperative is completely ignored in the current urban developments (Kadri, Kettaf, 2018).

Facades and urban life

One of the main roles of a facade is to ensure that the ground floor contributes to the city vitality through the diversity of its activities. The treatment of the ground floor contributes to the enrichment of the pedestrian's sensory experience and gives it a sense of security (Gehl, Kaefer and Reigstad, 2006). In this regard, M. Carmona et al. (2003, p. 156) point out that "Although the height of the building is not necessarily significant in achieving a human scale the articulation of facades and the visual interest at pedestrian level is ".The facade must be thought from the pedestrian scale through a thoughtful treatment of its base (Gehl, Kaefer and Reigstad, 2006).

Streets characterize the spaces in the city center with strong pedestrian activity. The ground floors are in the form of continuous spaces open to the streets. They constitute what C. Alexander et al. (1977) designate by active fronts (in: Carmona et al., 2003). They give interest and vitality to the public space and offer opportunities for exchange and social interaction. Multiplying windows and doors suggests a human presence. The more doors and windows are at the street level, the more dynamic and lively the street is. Buildings of the 1950s attempt to combine ground floor commercial spaces on the main streets and parking on side streets. Parking garages' entrances with their ugly metal gates contribute to the depreciation of the public space. The treatment of the base is often austere and does not offer a friendly pedestrian space. As for the recent constructions, they create functional and visual interruption in both cases, illustrated by the ground floors rose above street level. The pedestrian is forced to walk along blind walls on major streets (Figure 4). Consequently, the lack of connectivity weakens and threatens the coherence of the urban fabric (Allain, 2004).

Conclusion

Buildings built in the 1950s attempt to reinterpret a classical language (alignment, homogeneous urban frontage, active ground-floor). The introduction of heights buildings appears to be the subject of a select set of urban planning rules that respect street frontage and their immediate context, despite the impact of their scale on overall urban landscape.

The current constructions present dysfunctions of the same order, but they are erected while completely disregard the places specificities. The result is entire streets without light and sunshine penetration, buildings that ignore the pedestrian scale and incoherent urban landscape. The process of urban renewal that is currently taking place in Oran comes from the juxtaposition and the accumulation of isolated high elements in urban fabric that was not designed to accommodate projects of this size. In addition, the non-respect of the urbanism most basic rules, accentuates landscape degradation.

This renewal process must imperatively be part of a global political strategy that evaluates and respects the spatial, cultural and economic potential of the existing built environment. In Algeria, urban renewal policies concerned with the future of city centers has yet to be addressed and implemented. The challenge of a rational urban renewal is to bring improvements to everyday life by enhancing the city center while reinforcing its attractiveness and ensuring the coherence of its urban fabric and the quality of its landscape. Since urban landscape "is an essential factor in most urban planning operations of quality" (Allain, 2004, p. 14), it becomes important to address criteria for harmonious integration of new constructions that will take into account their impact on the neighborhood image and on the city landscape while reinforcing the urban life and pedestrian comfort.

Within such a thought, we agree with F. Grether (2002) when he writes that "the attraction, the future and the identity of any city, are part of its global, existing and projected landscapes, geographical lay, open spaces, green areas and built-up volumes silhouette [...] The principles of transformation that affect the types of land subdivisions, extensive or fragmented, [...] and building heights must be defined globally and based on their particular sites" (p. 34).

Figure 1.


Port
Boulevard de L'ALN
Rue Med Khemisti
Bd Tripoli
Rue Larbi Ben Mhidi
Boulevard Emir AEK
Rue Mostaganem
Scale 82 M
City center
Leclerc building
Antinea building
Khoudja building
shopping and business center building

Figure 2.

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Figure 3.

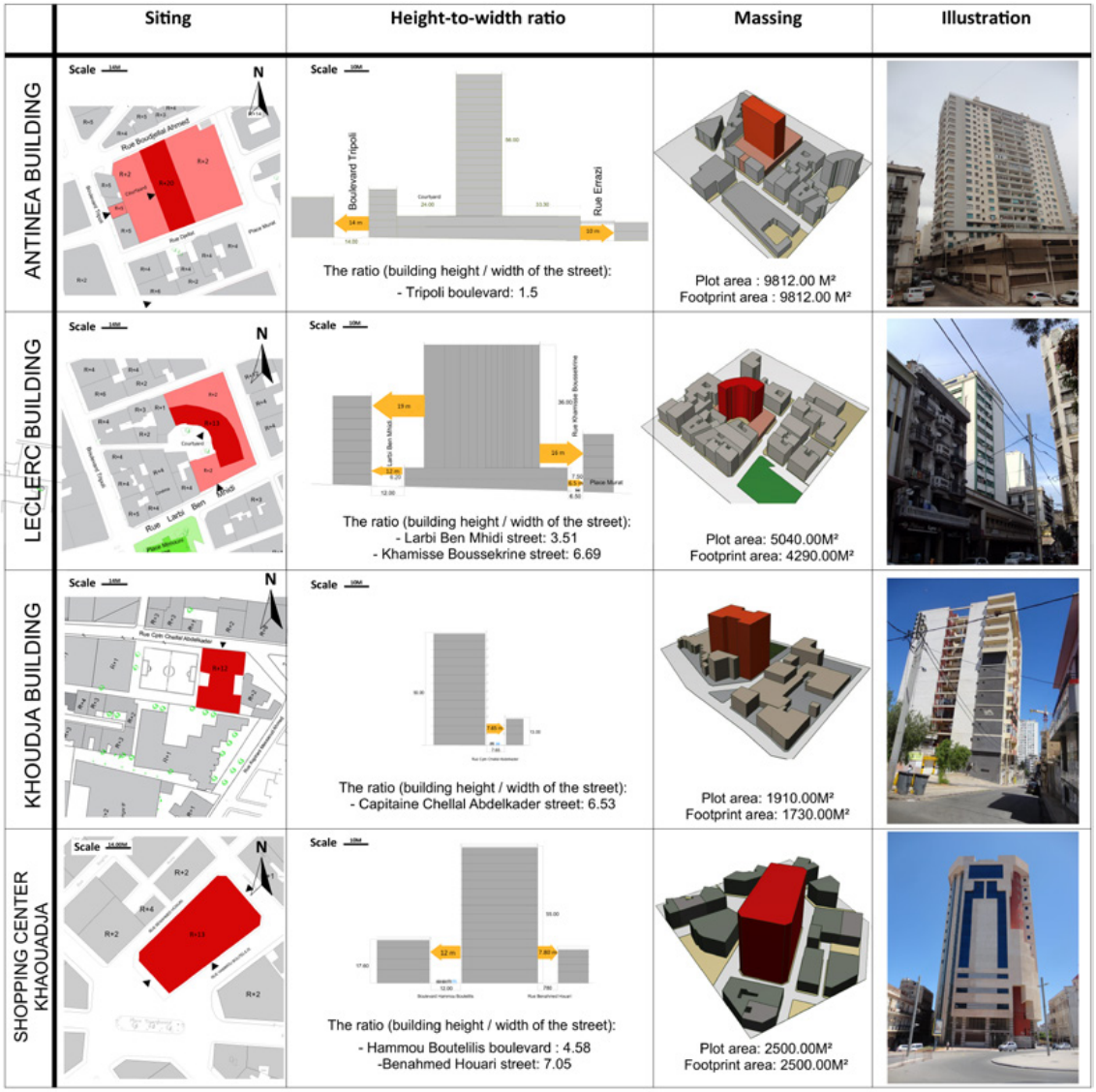

Figure 4.

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On the search of human willfulness that had driven the making of a city in historia: Morella

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This contribution has to do with the powers that had driven the making of a city, in a socio-physical and space-time structural chronotopic manner, following ideas by M.Bakhtin (Bakhtin 1982), P.Ricoeur (Ricoeur 2003), and GIRAS Research Group (Muntañola 2016; Saura 1997). The main case study is the historic core of Morella, in Spain, and is focused upon the analysis of the relationships between: the configurative knowledge that is embedded in the urban form, the voices of their inhabitants considered as users, and the contemporary urban design practice of the architects and town planners Enric Miralles and Helio Piñón.

The method to study the transformations of the city is based on two different perspectives, the first based on the Italian school of urban morphology and typology (Strappa 2003) , the second on space syntax, developed particularly in University College London by Bill Hillier (Hillier 1996). Space syntax analysis will be used to analyse the urban fabric in relation to its connectivity and integration, while urban morphology studies will examine how the settlement has grown and been adapted to continue suiting the living. Then, direct observation and interviews with local residents provide insight into their daily lives and will also address how they have appropriated space to suit their needs.

This analysis of the historical footprints (physical and cognitive) will allow defining the territorial heritage and the basis of a historical-structural approach to architectural design, which takes into account the characteristics of the place, its invariants and its rules of reproduction.

Introduction

What concerns me in this paper has to do with how and why cities took the shape they did. The intention is to explore history in a manner that analyses the historical record in service of the design of buildings rather than as a specialist subset of history. In simple terms, architectural history can and should serve the needs of architecture as a whole, responding to the role of designers in bringing historical precedent to bear on the present practice of architects as source material to be understood (Lucas, 2016). I am not engaged with form in the abstract, architectural meaning is ultimately always lodged in history, in cultural contexts.

In order to develop an evaluation of something so complex as the making of a city in history, we need a solid theoretical framework that help us to explain the different interactive relationships that are established in a specific context. A theoretical model that does not simplify the analysis dividing the physical factors from the social ones. There is a vast modern literature about urban form; how to make it and how to "read" it. Since Camillo Sitte's *The Art of Building Cites* of 1889 and all those other books since then by the likes of Spiro Kostof, Lewis Mumford, Saverio Muratori, Aldo Rossi, Alberto Magnaghi, etc., the professional eye of the designer has scrutinized urban configurations, and drawn prescriptive lessons from such scrutiny.

The main case study is the historic core of Morella, in Spain, and is focused on spatial configuration, taking into account the configurative knowledge that is embedded in the urban form, the voices of their inhabitants considered as users, and the contemporary urban design practice of the architects and town planners. It means to study urban form as a historical laboratory, as a continuous experimentation that set up cultural values, deep forms of communication. But to understand it, we have to look at it from the 21st century. The purpose is not demonstrating that the constructed environment forces a certain action to architects or users, is to show that we can study the cultural values that the constructed environment configures, to learn to design better.

Methodology

In this paper, to explore the urban form of Morella, in Spain, we have searched on pictures, historical drawings, plans, ethnographic and archaeological reports, and on the current and ancient cartography. Studying cities from a scientific approach let us find out the knowledge that we cannot perceive by a direct visual intuition.

The methodology to study the transformations of the city is based on two different perspectives, the first based on the Italian school of urban morphology and typology (Strappa 2003), the second on space syntax, developed particularly in University College London by Bill Hillier (Hillier 1996). Space syntax analysis will be used to analyze the urban fabric in relation to its connectivity and integration, while urban morphology studies will examine how the settlement has grown and been adapted to continue suiting the living. Then, direct observation and interviews with local residents provide insight into their daily lives and will also address how they have appropriated space to suit their needs.

The main methodological strategy to understand the historic urban form consists of a process of artistic and technical production based on the representation of the complexity of the territory and the transformations of the urban fabrics overlapping geographical, environmental and historical maps, and the current cadaster, in order to see what remains, what disappears and what is new. This allows us to understand the territorial structure from the present to the past, looking back to understand the meaning of the things. In this way we can identify the architectural characteristics of the territory and the specific qualities of the cultural and geographical environment of the city. As a result, we see that landscapes have genetic codes of identity.

Forming process

Morfotypology is a synthesis through an iconographic representation of the morphological and typological dimensions interrelated. By the analysis of Urban Morphology, we can

represent the elements that highlight the formal characteristics of places in their individuality. Moreover, an analysis of the typology makes evident the formal characteristics of places that are repeated in more contexts and in time[1].

The purpose in this case is not to stablish a classificatory model. My contribution will show how to discover some important generative rules that explains the current spatial configuration of the city, whether geographic, cultural, sensorial, etc. How to demonstrate that form is a receptacle of meaning, that we "read" form correctly only to the extent that we are familiar with the precise cultural condition that generated it. Kostof pointed out that the more we know about cultures, about the structure of society in various periods of history in different parts of the world, the better we are able to read their build environment.

In *De re aedificatoria* León Battista Alberti observed that since Antiquity, two types of urban form had been used for shaping urban fabrics: the orthogonal-grid form and/or the semicircular form. These two main types of form used for building the geometry of walls, are still visible today in the skylines and the perimeters of most urban fabrics in Europe (Alberti, Rivera Blanco, & Fresnillo Núñez, 1991). Morella is a walled city located in the slope of better solar orientation of a hill and has got a castle on the top. The city has a semicircular form, an urban layout of concentric perimeters. There are lots of types of cities on the ground, such as settlements disposed in a topological way along the ridge, on the plateau in the land, on the slope of the hill, etc. Talking about the concept of "Type" Saverio Muratori says:

Non si tratta di un concetto didattico nato dall'arbitrio di un classificatore, ma di una realtà umana innegabile, risultato di uno sforzo comune di creazione, dal cui ceppo germogliano le singole opere come fiori e frutti vivi di una propria originale individualità, senza rinnegare i valori vitali comuni. Il tipo così inteso non è più la serie standard del positivista né la varietà biologica fissata una volta per tutte da un determinismo meccanico… (Strappa, Ieva, Dimatteo, 2003).

A Territorial Morphotype is characterized by the formal interpretation of the relationships between the urban fabric and its environment[2]. Morella has traditionally been considered a medieval city, because its settlement can be identified with the morpho-typological model of medieval fortified hilltop settlements, located on strategic high points of the territory with high visual control, with good defensive conditions before the probable attacks due to the frequent confrontation between peoples.

Thanks to the old fortification walls, the gates, the streets, etc., we know that there was a total architectural and urban interaction between the design inside and outside. There was a link of interdependence. Magda Saura (Saura, 1998) says that people were forbidden to build houses attached to the fortification walls and were only allowed to enter through the gates of the ancient city for a few hours during the day. Therefore, people were aware not only of the security the defense walls offered, but also of the kind of use they were able to make of these architectural structures. Use of space was regulated by law. The physical aspect of urban settings can only be meaningful in this context, when they are studied together with the legal codes that ruled people's behavior.

Alberti considered town planning to be a product of making, a human activity, a mental construct. He knew that since Antiquity, people had been aware of the role of building laws in defining the use of urban space. In Early Renaissance, people continued to be represented on city councils and were able to approve or reject an architectural design project if it did not comply with codes governing the use of urban space.

The separation between countryside and city in different units of analysis makes more difficult the understanding of the urban form. Spiro Kostof already pointed out that in the history of cities, the organic fallacy cannot account for spontaneous urban growth, unconscious or unplanned urban design (Kostof, 1977). As Aristotle recorded in his urban theories, Persian know-how was inherited in Ancient Greek town planning, and was carried through the rest

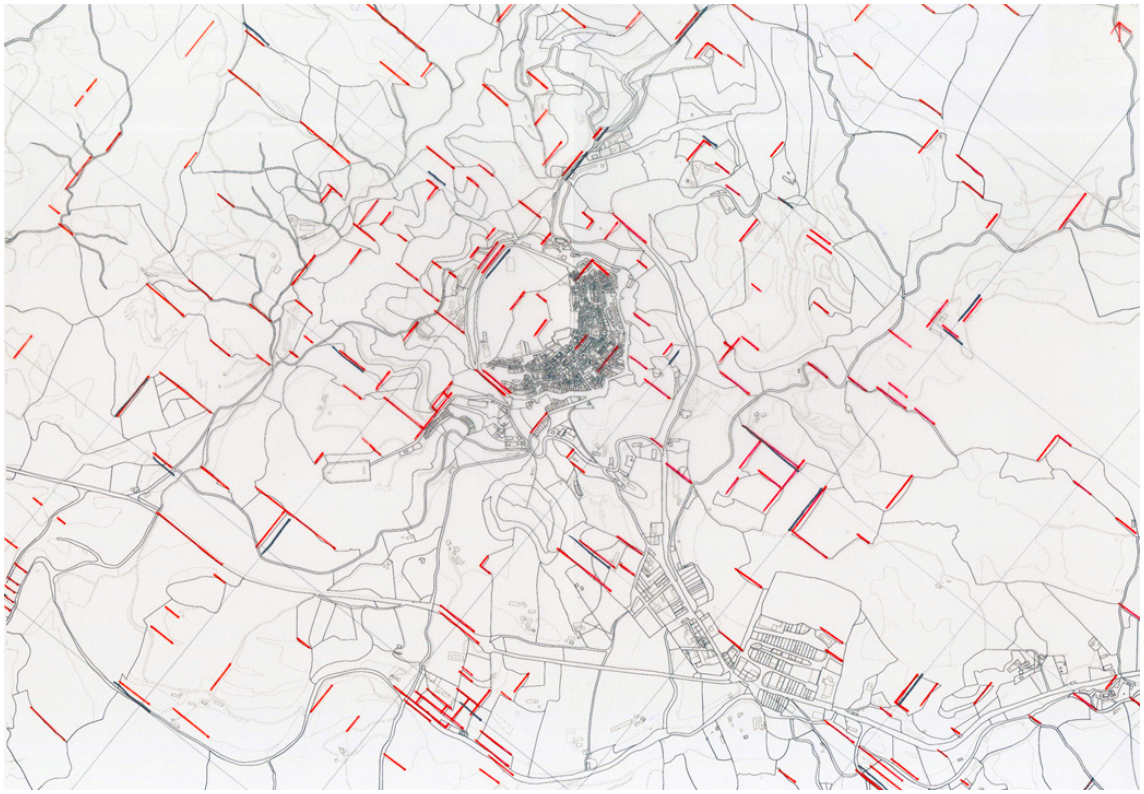
1 Definitions of Alberto Magnaghi extracted from the conference at the COAC during the scientific conferences Architecture, Education and Society. Barcelona, May 31, 2013

2 Idem.

of Europe through the ancient institution of the Roman cadaster, dividing private and public property. Originally the purpose was to collect taxes from agriculturally, zoned land, and this ancient planning tax policy still exists in many countries.

Saverio Muratori defended that all the territory of the Empire was planned from a gird of 720 x 720, the Roman cadaster. I have developed a hypothesis of centurion in the territory of Morella from the current cadaster and this gird. (Figure 1) On this hypothesis, we find a Roman logic because the grid is perpendicular to the Bergantes river, where there are the most fertile lands. Moreover, this gird is aligned with the castle's shape, and with the layout of some of the main streets of the city. The archaeological evidence shows that since the Neolithic period the rocks at the top of the hill where Morella is located has been inhabited. This place is a strategic point of control on the land, and I am sure that had been an important location for Romans. But, provably there was not a Roman city, there was a camp under the castle.

Figure 1. Hypothesis of centurion in the territory of Morella.



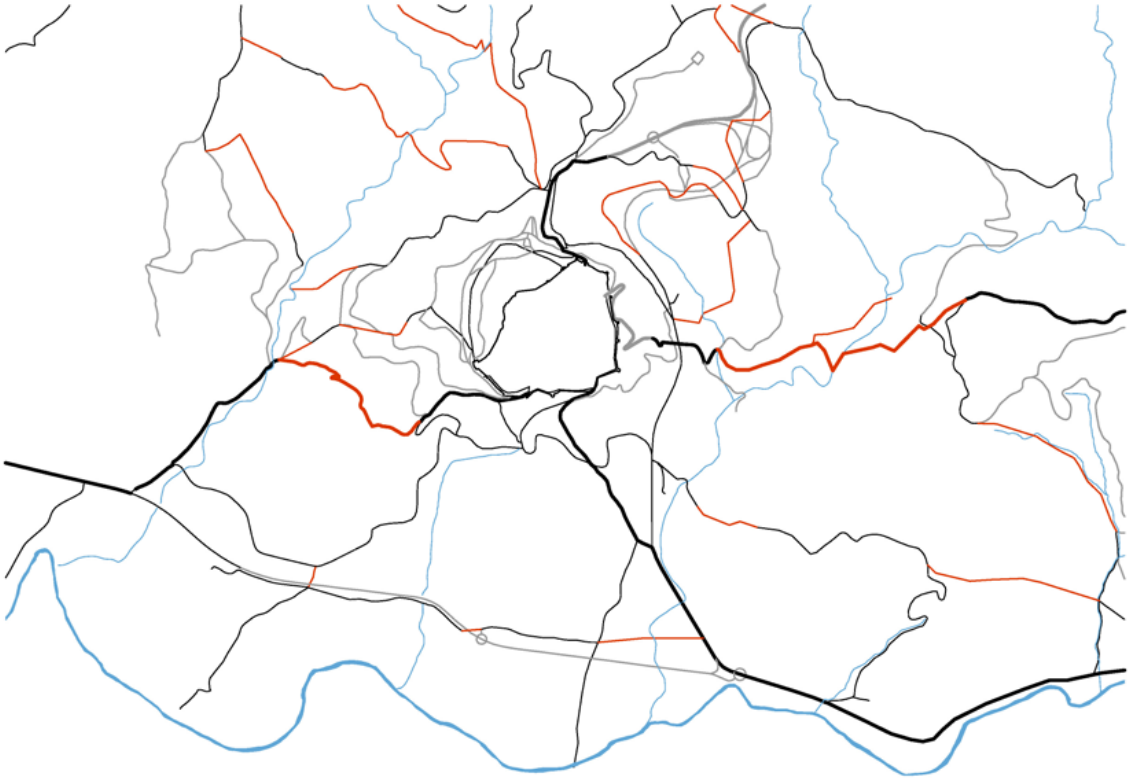
Morella is located at a crossroads, at the boundary of *Comunitat Valenciana,* very near form *Catalunya* and *Aragón*. For this reason, has been a wonderful location of visual control, strategically located from a military point of view. Figure 2 shows the overlapping of a military map form 1910 with the current road structure. In red we can see the roads that have disappeared, in gray the new ones and in black the ones that have remained. We see that the triangular structure of roads is modern, because in the past there was a fourth important road, which even corresponds to a historical gate in the fortification wall that was closed.

An urban morphotype is characterized by the formal interpretation of the urban layout of public and private space, streets, squares, etc., and by the relationships between them[3]. I will attempt to exemplify the contribution that urban morphology can make to the understanding of historic urban landscapes in the current era of concern for managing historic cities. This research direction on which we chose to focus corresponds to the historical reconstruction of the physical form of urban areas and it is supported by a diverse set of data sources, such as fieldwork in existing urban tissues, the analysis of old maps, the study of historical documents,

3 Definition of Alberto Magnaghi extracted from the conference at the COAC during the scientific conferences Architecture, Education and Society. Barcelona, May 31, 2013

and archaeological work. Crossing different scales can be very useful when analyzing the structure in order to search for the oldest streets of the city (*Il percorso matrice*). There is a correspondence between main streets of the city and main access roads. Moreover, in Morella the old gates of the fortification walls are located at the meeting point between the main streets and roads.

Figure 2. Result of the overlapping of two maps: a military map from 1945 and the current cartography. In red we can see the roads that have disappeared, in gray the new ones and in black the ones that have remained.



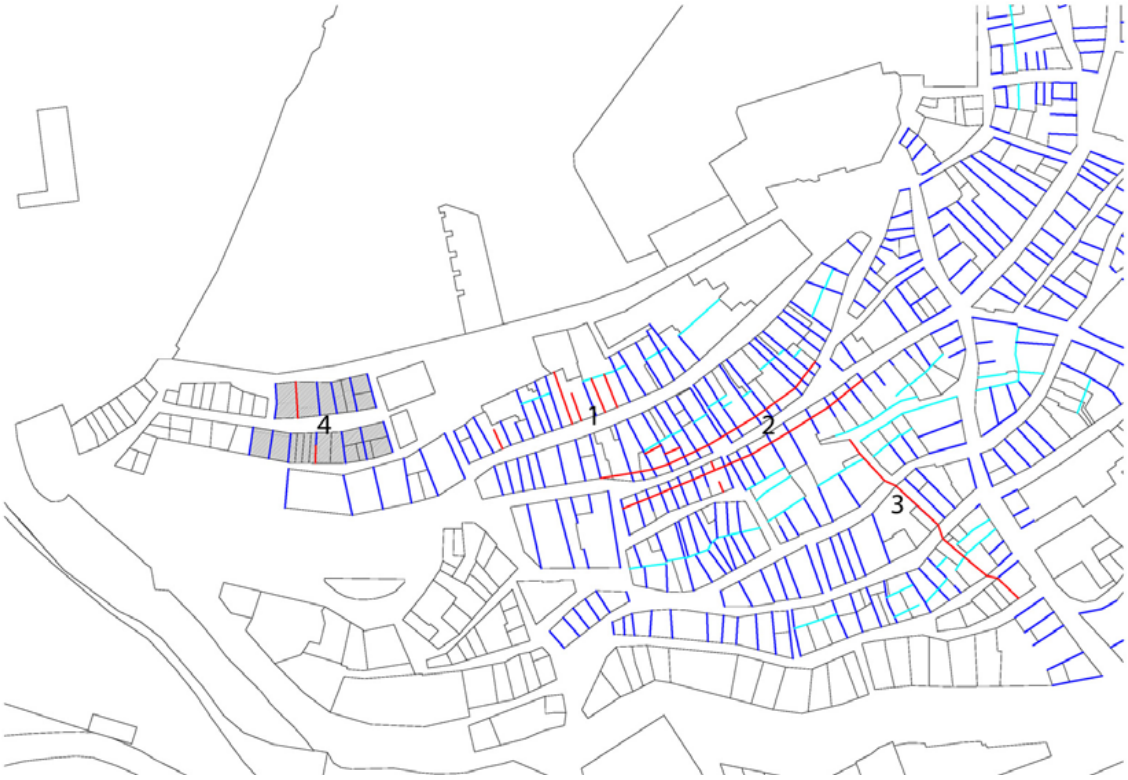
An aspect of plots was their dimensions. These can be subjected to metrological analysis, which affords an important means of reconstructing the histories of plot boundaries. For example, by analyzing measurements of plot widths, are able to detect regularities, speculate about the intentions of the medieval surveyor when the town was laid out, and infer the original plot widths and how they were subsequently subdivided or aggregated (Whitehand, 2010). In figure 3, in number 1 we can see how the street *Mare de Déu* in Morella was formed with regularity of plot widths, of approximately four meters, and the old palaces in the street are probably the result of the purchase of three consecutive plots. Another aspect of plots was their shapes (Strappa, Ieva, Dimatteo, 2003). Residential plots are likely to have been created as a series of rectangular shapes, which is the norm for plots in a housing area. So when we find irregular dividing lines, we assume a growth of the plot. Usually *dividing lines* are perpendicular to the first façade of the plot. In the number 2 of the figure 3 we see an overtaking of the plots on the street. It appears as a continuous porch on the street *Blasc d'Aragó*. On the other hand, in number 3 we see an alignment of plots in different blocks, and when more than three lines are aligned it seems to me that it cannot be casual. The main hypothesis is that there was a street that was closed in the past. These three hypotheses are only three examples to see the potential of information that the cadaster keeps as memory in the form.

Another important source to the historical reconstruction of the physical form of urban areas is the study of historical documents. In the Historical Archive of Morella we found some

documents of the late 18th century, about the construction of a neighborhood. The process of creating housing plots began in 1789, when a rural property within the old fortification walls was sold in order to build to houses. The historic document specifies the dimensions of the plots in rectangles of 26x40 spans. This structure has remained until the present, as we see in Figure 3 (number 4) although was destroyed and rebuilt after suffering major damage in successive wars.

"Sépase por esta escritura publica como yo Doña Francisca de Zaldua, viuda de Dn. Miguel Piquer, vecina de esta villa de Morella … otorgo que doy en enfeudación y concedo en establecimiento y treudo perpetuo para siempre a Vicente Palos y Joaquín Palos, jornaleros y vecinos de esta propia villa … un sito o solar para formar una casa cito y puesto dentro los muros de esta propia villa y Parroquia Mayor de ella, en el bancal dicho de Piquer, que tengo debaxo del Convento de San Fancisco, que consiste dicho sitio en veinte y seis palmos de ancharia y de cuarenta y ocho palmos de largaria que linda por delante con calle que se deberá formar por medio de dicho bancal para subir del Llano del Estudio al dicho convento de S.Francisco, de un lado con sitio para forma una casa de Geronimo Monmeneu Alvanil, del otro lado con bancal mío propio y por la parte de arriba con el propio convento de San Francisco y bancal junta a el calle publica en medio que pasa del dicho convento al Sementerio Nuevo…"(A.H.N.M.,1128. page 2015 v. 4/11/1793)

Figure 3. Historical reconstruction of the physical form of urban areas. 1- Metrological analysis of plots in Morella, 2- Overtaking of the plots on the street, 3- A street that was closed in the past 4- Configuration of residential plots, described in a historical document.



Space syntax represents a more technical, logical and abstract version of public life studies. This map (Figure 4) was made with the help of information from a computer program about the probability that pedestrians and drivers would choose one way or another. The color scale illustrates the results, with blue the least likely and red the most likely. The red color in the map (Figure 4) indicates a good connectivity regarding the whole core of the city. The program analyzes the length of the vectors, which represent the visual capacity of people in a straight line and also the most direct routes. An important red line in this case goes from the Town Hall (1) to the old fortification wall (2). This red line indicates a good visual control from

far away to this place. But in this place, there is no public life. It is a priority car street.

Figure 4. Depthmap analysis of the public space inside the old fortification walls. The map shows connectivity.

In historical documents, military maps and engravings, we can identify a gate of the fortification walls in this place, that has disappeared and a road outside. In addition to the historical images and plans, visual exploration is essential in locating the gate. If we look at the old fortification wall next to the tower, we can find some of the stones of the destroyed arch of the city gate, and outside there is a water source. This arch is five meters below street. In the municipal archive of Morella, we have found the memory of the urban Project of 1934 of the creation of a highway for cars that did not have the need to stop in the population. The creation of this road for cars supposed to break the old fortification wall and to raise the level of the street, hiding the old gate.

"*Para evitar el peligro que representa el tránsito de vehículos por las estrechas y empinadas calles de Morella, el Ayuntamiento de esta ciudad acordó construir una travesía exterior que uniese directamente la Puerta de San Mateo con la de San Miguel, a las cuales afluyen las principales carreteras que pone en comunicación esta ciudad con Castellón, Zaragoza y Teruel y los caminos vecinales que la unen a los pueblos próximos, evitando con la construcción de esta travesía el obligado paso por las calles, de los vehículos que no tuvieran necesidad de detenerse en la población*". A.M.M. (Archivo Municipal de Morella) Memoria proyecto Travesía exterior. Ing. Luis Calduch Pascual. Año 1934.

When applying Space Syntax analysis on a hypothesis of historical growing of the city, we see that each new street that appears modifies the complete structure of the city. The disappearance of a historic road that arrived from countryside affects the entire streets structure. The interesting thing about Space Syntax is that it is a specific tool that measures changes, not in an intuitive way, but in a more scientific way, from a systems theory. The

computer analysis with Dephtmap is useful in this case to systematize what we had seen with the previous analysis, overlapping historical maps.

Conclusion

In Conclusion, space syntax adds to traditional urban morphology methodology and proves to be extremely useful. A prerequisite shown in this paper claims the need for an accurate choice of historic maps and ethnographic reports, data previously gathered at a qualitative, interdisciplinary level. Future studies are needed to predict the impact of new infrastructure and design upon cultural heritage and upon social life.

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Water routes and open spaces for the urban regeneration of the Kasbah of Algiers

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Keywords: *Urban landscape, regeneration, water channels, open spaces, Algiers*

Dealing in a continuous shift between preservation and innovation, projects for the restoration and regeneration of historic settlements must be grounded on the need to preserve the overall historic and cultural characteristics of the urban landscape.

This is particularly true for the World Heritage Sites that have been affected by processes of abandonment or trauma and that now need extensive and consistent actions of urban regeneration. This is the case of the Kasbah of Algiers that, after a long period of overpopulation and lack of maintenance, today need extensive actions of regeneration to return to being white, to solve problems of hydrogeological instability that caused extensive collapses of its building fabric.

Between conservation and innovation, restoration and urban regeneration, this paper aims at exploring methodologies for an urban renewal that has as its core the regeneration of the open spaces, which can be transformed into the real 'knots' of a capillary action that has as epicenters the small squares and open areas traditionally used by the local society. Reconciling the need for urban regeneration with that of maintaining the characters of integrity, authenticity and Oustanding Universal Value, it proposes to re-establish the network of water routes, channels, fountains and gardens as the streams for the urban restoration.

Introduction

Historic urban landscapes are complex phenomena generated by specific cultures in specific regions. They result from an overlay of intentional or spontaneous human transformations of the natural environment, which created, over time, the visible urban form. Combining physical features and cultural overlay of human presence, they reflect the living synthesis of people and places, crucial to local and regional identity.

Dealing in a continuous shift between preservation and innovation, projects for the restoration and regeneration of historic landscapes must be grounded on the need to preserve the overall historic and cultural characteristics.

This is particularly important for the World Heritage Sites that have been affected by processes of abandonment or trauma and that now need extensive and consistent actions of urban regeneration, such as in the case of the Kasbah of Algiers that, after a long period of overpopulation and lack of maintenance, today needs extensive actions of urban recovery. (Fig. 1)

Between conservation and innovation, restoration and urban regeneration, this paper aims at exploring methodologies for an urban renewal that has as its core the regeneration of the open spaces, which can be transformed into the real 'knots' of a capillary action that has as epicenters the small squares and open areas traditionally used by the local society. Reconciling the need for urban regeneration with that of maintaining the characteristics of integrity, authenticity and Outstanding Universal Value, it proposes to re-establish the network of water routes, channels, fountains and gardens as the streams for the urban restoration of the Kasbah of Algiers.

The Historic Urban Landscape of the Kasbah of Algiers

The Kasbah of Algiers stands on the side of a promontory at the end of a ridge route connecting the hinterland to the Mediterranean Sea. From the top of the upper Kasbah, where the Palace of the Bey is set, two routes (Rue de la Kasbah and Rue Porte Neuf) reach the coastline through the settlement.

These two 'matrix routes' (Caniggia and Maffei, 2001) follow the presence of the natural resources that have been at the basis of the urban settlement. It is not a coincidence, therefore, that along these two routes are set the main buildings of the historic city core, such as mosques, schools, workshops and shops, wells, fountains, public baths (*hammam*), but also underground and open air canalizations, as well as small public spaces.

In particular, the network of water structures and natural resources is strictly connected to these streets because, before the city was built, the area was already provided of natural springs and occupied by gardens and orchards (Hireche, 2015). Later on the natural water system has been improved with the construction of the four Ottoman aqueducts, built along territorial routes to bring the water from the hinterland (Ouzidane, 2016).

The main *suq* of the city was in the valley bottom, near the coastline, along the street connecting Bab al Oued and Bab Azuz. (Fig. 2)

When the French conquered Algiers they demolished the ramparts, substituting the walls with a system of boulevards, and also cut the Kasbah with a 'restructuring route' (Caniggia and Maffei, 2001) that followed the street of the *suq*. Accordingly, they not only divided the 'high kasbah' from the 'low kasbah', but also cut resources and isolated the 'high Kasbah' from the rest of the city.

This action was at the basis of a process of progressive deterioration of the built environment, as well as of the living conditions of this historic site, which had its acme with the Battle of Algiers, when the area started being inaccessible and overpopulated.

Nevertheless, despite the progressive ruin, in 1992 the cultural landscape of the Kasbah of Algiers was listed as World Heritage Site for the importance of the architectural remains within boundaries marked by ramparts built at the end of the 16th century, of the citadel, of old mosques and Ottoman-style palaces, as well as for its urban landscape characterized by the high density of urban stratification and by the synthesis of many traditions and cultural interaction between the various layers of local populations.

Unfortunately, the recognition of this Outstanding Universal Value didn't stop the progressive deterioration of the urban fabric. Neither did actions and studies that have taken place from 1990's until today for its recovery, which have had little or no impact on the improvement of the conditions of deterioration of the urban landscape of this Algerian medina.

It follows that today the conditions of this site are particularly difficult, and we need to envision possible ways for its recovery and urban regeneration, after collapses of entire blocks and abandonment by the local population.

This is particularly challenging because acting on the recovery of a World Heritage Sites, as in the case of the Kasbah of Algiers, we have to consider issues of urban recovery and sustainability also in the light of the approved national and international recommendation and charters, and in particular the *Recommendation on the Historic Urban Landscape,* or the more recent *Warsaw Recommendation on Recovery and Reconstruction of Cultural Heritage*.

The Theoretical and Legal Framework

The *Warsaw Recommendation on Recovery and Reconstruction of Cultural Heritage* (UNESCO 2018) states that the overall goal after a state of crisis is the recovery of the economic, physical, social, cultural and environmental layout of a damaged World Heritage Site, in the light of the 2030 Agenda for sustainable development. It stresses, indeed, the need to consider that cultural and natural heritage are essential and integral parts of the recovery action to build-back better a sustainable environment. Including reconstruction of the physical assets of the cultural heritage and considering the associated building typologies and urban structures, it states that recovery and reconstruction should follow people-centered approaches and fully engage local communities, enabling them to re-connect to their 'spontaneous consciousness', that is to their cultural heritage, identity and history. Therefore, before any recovery or reconstruction plan for a heritage site, it is essential to understand the physical and cultural structure of its urban organism, that has justified its inscription on the World Heritage List, and to connect heritage with new values resulting from processual or traumatic changes, also connecting heritage recovery projects within the larger urban and territorial structure.

The *Recommendation on the Historic Urban Landscape* (UNESCO, 2011) defines a historic urban landscape as resulting from the layering and the intertwining of physical and cultural factors, and therefore subject to spontaneous and critical processes that shaped and keep shaping it: buildings, urban structures and open spaces change in time and space not just according to the site topography, geomorphology, hydrology and climate, but also according to local cultural, economic and architectural practices. This recommendation focuses on the concept of 'living organism', which is already well known through the studies of the Italian School of urban morphology (Muratori, 1960).

Both the *Historic Urban Landscape approach* and the notion of 'living organism' see and interpret the city as a *continuum* in time and space, as a moving target destined to change with culture and society: they seek to increase the sustainability of urban recovery by reading and interpreting the characteristics of the existing built environment, together with the intangible heritage and cultural diversity, as well as with socio-economic and environmental aspects.

Framing the design actions in a broader notion of recovery of the historical landscape, that is of the visible result of the transformation actions of a specific culture on a territorial structure, the *Warsaw Recommendation on Recovery and Reconstruction of Cultural Heritage* also strengthens the systemic relationship between natural and anthropic environment, that is, the structural laws between the physical elements that make up the urban heritage and the natural and cultural structure of its background.

Finally, against unmanaged changes that can undermine the integrity of the urban fabric, the *Recommendation on the Historic Urban Landscape* places special emphasis on the harmonious integration of contemporary design into the historic urban fabric, shifting from the emphasis on architectural monuments towards the urban morphologies, the non-

exceptional heritage elements present in a coherent way with a relative abundance, the public open spaces, the urban infrastructures, and all the places around which communities can be recreated.

Recognizing that a historic urban landscape is the urban area resulting of a layering of cultural and natural values, including the natural and built environment, open spaces and gardens, visual relationships or cultural practices, it addresses the urban recovery within an overall sustainable development framework where built heritage characteristics are not limited to the single building: architecture is just one element of the overall urban setting, and in the recovery process we have to take into account all the different urban layers.

If we apply these approaches to the reconstruction of the historic urban landscape of the Kasbah of Algiers, it will be easier to envision an urban regeneration that is in continuity with its past and cultural history, and which is focused on the interrelationships between the physical form of the historic areas and the natural settings, on the relationship between water structures and the built-up area, and on an adequate re-use of the open spaces. Bringing special attention to this fragile built environment is a key factor for the reconstruction of the cultural identity characteristics of a city core that was listed as site of Universal Outstanding Value because of the importance of a traditional urban structure associated with a deep-rooted sense of community.

The current conditions

The heart of the Algerian capital and the symbol of the Battle of Algiers, after the events of the 1960s the Kasbah became an isolated an neglected neighborhood engulfed by a large metropolis of more than three million inhabitants. The subsequent demographic pressure due to overpopulation has increased exponentially a degradation that has led today, particularly in its northern portion, the white Kasbah of Orientalist memory to be reduced into ruin.

It is not just a problem of urban decorum or of the color of the plaster: negligence and neglecting caused also by the illegal occupation of many houses, together with social, economic and demographic changes, have accelerated exponentially the level of an urban degradation that has brought, in its most dramatic forms, to the informal and uncontrolled transformations of the most of the houses, and to the collapse of large portions of the built-up area.

It is not a coincidence, also, that the most of the collapses are concentrated along the urban and territorial 'matrix routes', which are set along the waterways and the Ottoman aqueducts, and especially in the areas where the natural flow of water has been interrupted by the 'restructuring route' that have laid the basis for the segregation of the 'upper Kasbah'. (Fig. 3)

Furthermore, the difficulties in sharing the single-family building of the courtyard house by more than one family have challenged the structure of this residential typology in which today each room corresponds to a different apartment, which has been greatly increased in height, and in which the courtyard itself has been transformed into a hall or covered living room. The sum of all these transformations has undermined, indeed, not only the microclimatic behavior of the house, but also its constructive and distributive layout, together with the visible form of the entire medina.

Consequently, the deterioration process at the scale of the neighborhood accelerated: the increasing social degradation has led to further changes in the resident population, and to the consequent abandonment of the traditional economic and social practices related to handicraft and commerce.

Last but not least, these changes affected also the cultural use of public open spaces, such as the street and the small suqs, the fountains and the small squares where the craft activities used to take place.

Therefore, any plan of revitalization of the Kasbah of Algiers requires today an overall strategy for its recovery instead of a specific focus on a single building or on a group of monuments. It requires, above all, a consistent vision for the future recovery of the ancient urban core.

This is particularly important for a settlement that in the past was characterized by a very

high building density but that today has wide voids given by the collapse of entire blocks, which presence has completely changed the consolidated structure of the urban fabric: what was in the past a compact North-African medina is today full of 'voids', which are inconsistent with the cultural and sustainable traditional urban layout.

Follow the Water. Methodologies for the Urban Recovery

Which design approach and instruments to adopt for a sustainable urban recovery? How to reconcile projects for urban regeneration with the need of maintaining the characteristics of Outstanding Universal Value that underlie the Kasbah's inscription on the list of World Heritage Sites? From where to start in urban regeneration: from an action area or from a capillary action that has as its epicenters the small places of traditional sociality?

The present relationship between natural and water resources, urban fabric and open areas, architecture and community spaces of the Kasbah of Algiers displays the necessity to bring back to an inter-scalar vision for its recovery and urban regeneration, which traditionally made its 'urban organism' sustainable.

Therefore, with the aim of adopting a consistent approach for the urban regeneration, we have to consider the overall features of this 'urban organism' and to focus our design on the 'urban structures' instead of on the single buildings. The traditional structure of the open spaces of the Kasbah represents, indeed, the linkage between the buildings and the urban form: streets and small squares are, indeed, not mere 'voids' of the urban fabric; they are instead 'urban structures', that is the rule that defines the form of the aggregates of building parcels along or around them (Caniggia and Maffei, 2001). 'Urban structures' can be isolated by their specific function and form in the 'urban organism', and their arrangement determines the urban and open spaces form, the sense of places and the urban figurative values.

Generally speaking, we can say that open spaces are 'urban structures' made up by diverse and heterogeneous 'urban elements' such as buildings and architectures, water channels, vegetation, and so on. Their characteristics are culturally determined from the way in which 'urban elements' are linked to one another. Different arrangements create different forms that are synthetic of the essence of a specific city, in a specific area, and in a specific cultural and historical period.

In the specific context of the Kasbah of Algiers open spaces were traditionally small squares, or more properly widenings of the street around fountains set at the junction of urban and territorial routes that follow the lines of the water channels and aqueducts. Around these 'urban nodes' urban facilities such as small suqs, workshop places, community buildings, *hammam* or mosques were set. They defined the epicenters of the neighborhood life. (Fig. 4)

Today, for the real urban recovery and regeneration of the cultural form of the Kasbah of Algiers, we have to consider the role that these open spaces had for the historic urban form versus the role that the new voids, created within the very compact structure of the urban fabric after collapsing of buildings or entire blocks, are having for its progressive decay.

The urban landscape of the high Kasbah of Algiers has changed profoundly from its original form, when it was characterized by the presence of large areas with productive gardens. Going through a phase in which the houses were still equipped with a small pertinent garden – whose traces can still be found in the U-shaped structure of the secondary courtyard -, starting from the Ottoman period the urban landscape of the Kasbah has apparently become devoid of green spaces. Since that time also the gardens inside the courtyards of the houses became totally abstract, and the green was reduced to symbolic elements. Nevertheless, here wells and channel systems symbolically and physically reconnected the courtyard of the house to the main urban water system, through the urban public spaces: small neighborhood fountains connected to the *hammams*, mosques and local commercial systems.

It follows that these open spaces have always been the places of relationship between heritage practices and urban functions, traditional ways of living and sustainable urban forms. Today they are therefore the critical nodes from where to start for the reconstruction of the Kasbah, and for the updating of its urban landscape. It is therefore necessary to concentrate

on their design and recovery, to transform them into the real drivers of a sustainable urban landscape regeneration.

In the traditional structure of this Algerian city, in fact, these widenings around fountains, were the places of the traditional practices of the social life, of community practices and sustainable development.

Today, therefore, they still can be considered as the cornerstones of a sustainable urban recovery based on the restoration of significant elements, on the design and possible reconstruction of the collapsed areas as new urban elements. To give back to the Kasbah its lost characteristics and structure, these new open spaces can be therefore envisioned as epicenters for a possible restoration and morphological regeneration of the surrounding areas, as hubs for a network of gardens and community open spaces. In this way, small and punctual interventions on the open spaces will be the driving force of a more extensive regeneration of the neighborhood, while the sum of punctual re-knitting of the collapsed areas, designed as new 'enclosed gardens' containing functions for leisure and community activities, will define a sustainable recovery of the urban landscape and public life. To build-back-better the urban form could also mean to recall an intermediate phase of the urban development, which is more suitable for the contemporary needs.

In a moment, indeed, when the associations for the rehabilitation of the Kasbah of Algiers and its inhabitants are strongly asking for new public spaces for the local community, and especially for the youngster, this design approach is particularly significant in cases when the design of the open spaces mirrors a synthetic approach to urban form and sustainability that takes into consideration issues of urban renewal, ecology and people-centered approach. As in all the cases of contextual design for places of cultural significance is not a mere problem of new functions to give to the ancient city but instead of the most appropriate form to give to the needed functions.

In the Kasbah of Algiers, therefore, crisis can be overcome by supporting the capacity of local communities to regain their cultural spaces and heritage elements, in the context of changed social and cultural needs, by physically ri-knitting the voids into the urban fabric and landscape and by updating the community spaces to the current needs, in the light of a sustainable development.

Accordingly, this recovery vision for a sustainable urban regeneration, will also consider tangible and intangible aspects connected to cultural practices, the physical structure and the role that the open spaces have always had in the making of the urban morphology and for the local society, the need for retaining peculiar characteristics and values related to the local history, environment and collective memory.

Nowadays, when vision and strategies for the Kasbah's urban development are aimed at orienting towards a sustainable and inclusive recovery, to lay the groundwork for an 'individual' development projects means to identify in the network of open spaces and gardens along the 'water routes' the new urban cores for the civic and economic life: new system of community hubs for the urban landscape reorganization.

Conclusion

As the structure of an historic urban landscape changes over time, blindly keeping historic and folkloristic forms can cause it to become static, or even dead. Innovation in a recovery vision is an essential factor for the establishment of a dynamic culture and is part of the evolutionary process.

Designing within the morphological process of a historic urban landscape, which is in constant transformation according to social, economic, aesthetic, functional and technological needs, innovation is necessary to upgrade living landscapes to contemporary society and needs. When new spatial and typological needs arise, according to new customs and habits, understanding and respecting the inherited structure of these urban landscapes, and their connection with the territorial structure, is a sensible way to pave the way for a sustainable urban landscape regeneration.

The years of the Battle of Algiers are far away but this memory is still strong both for the inhabitants and the various associations for the protection of the Kasbah, who are asking loud

to start from the public spaces of the Kasbah for its recovery and regeneration. All of them agree on the need for a widespread action of urban recovery that starts from the renewal of public spaces, the design of new gardens and equipments for the inhabitants and on an identity reference that recalls the history of the Battle to restore a historic center that in recent decades has undergone a process of degradation that today make it unrecognizable.

This landscape design centered approach can give new perspectives to the urban recovery, by grounding regeneration into topics of cultural and morphological continuity, even in a context of changed circumstances given by collapses of buildings and social changes. Introducing 'enclosed gardens' and public open spaces along the water routes, means planning an urban recovery grounded on the principles of ecology, morphological continuity, consistency and, at the same time, updating of the urban landscape to the contemporary needs.

Figure 1. The World Heritage Site of the Kasbah of Algiers.

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Figure 2. The Kasbah of Algiers as 'living urban organism'. Relationship with the territorial structure.

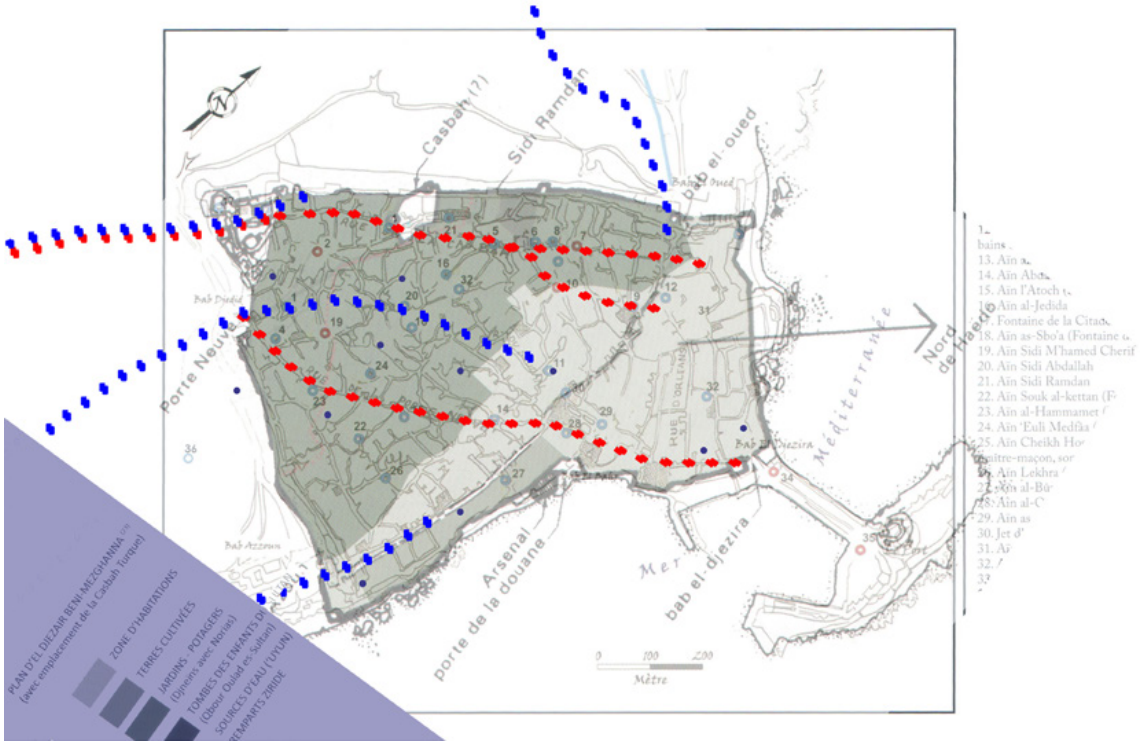

Figure 3. The Kasbah of Algiers. Water routes and new empty areas.

Figure 4. Cultural open spaces of the Kasbah of Algiers.

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The restoration of a notable building: Palazzo Testa-Pelosi in Frigento

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Within PON_MeTRiCs "Methodologies and technologies for the management and recovery of historical centres and prestige buildings" research project, the DiARC multidisciplinary research group coordinated by author, in order to verify the achieved methodological acquisitions, converged, in the research's ending phase of Experimental Development – after the examination of some exemplarizing case studies – on the area in the North-West urban fabric of the historical Centre of Frigento.

These project insights involved many disciplinary skills – the relief, the technological and environmental design, the restoration, the architectural and urban design – beginning with some basic preliminary contributions provided by the disciplines of history of architecture and the city.

All these contributions and experiments had a significant moment of synthesis and integration in the project proposals for Palazzo Testa-Pelosi. This noble building of ancient construction, now in a ruinous state, was paradigmatic of a coherent intervention with the research themes and objectives in order to recover valuable artefacts, recognizing the historical and documental value of monumentum or of primary element (Rossi, 1966) to this vestige in relation with the urban fabric (Caniggia-Maffei, 1984).

The case of Palazzo Testa-Pelosi, in this framework, is paradigmatic precisely because it raises a number of issues and theoretical and methodological hubs within research and design in the relationship between old and new, in the field of urban restoration and post-trauma building re-construction. A relationship that is particularly significant when the ancient, its vestiges being ruined largely lost their formal unity while retaining a significant testimonial value both for the urban location and for the spatial qualities, for the morphological-typological structure of which they represent a stable stage and relevant re-formulation.

Introduction

Within MeTRiCs project, after the end of the Industrial Development phase, the DiARC multidisciplinary research group, in order to verify the achieved methodological acquisitions, converged, in the last phase of Experimental Development – after the examination of some exemplarizing case studies – on the area in the North-West urban fabric of the historical centre of Frigento (Municipality selected by Consorzio Stress as a common case study for the research project) and particularly the area between vico I Roma, via Frontespizio, piazza Duomo to the South and via Limiti (SS76) to the North. In this selected study area some preliminary survey campaigns were carried out using advanced technologies – drones, photo rectifications, as well as direct measurements on site – which gave an overall and accurate three-dimensional modeling of the chosen urban area and of the artefacts on which were subsequently undertaken a series of operational insights in order to prepare a series of transformative, of maintenance, urban and architectural regeneration, of restoration and retrieval of artifacts and of open spaces interventions.

These project insights involved many disciplinary skills – the relief, the technological and environmental design, the restoration, the architectural and urban design – beginning with some basic preliminary contributions provided by the disciplines of history of architecture and the city. All these contributions and experiments had a significant moment of synthesis and integration in the project proposals for Palazzo Testa-Pelosi. This noble building of ancient construction, now in a ruinous state, was paradigmatic of a coherent intervention with the research themes and objectives in order to recover valuable artefacts, recognizing the historical and documental value of monumentum or of primary element (Aldo Rossi, 1966) to this vestige.

Moreover, again in this reference context, the completion of the head of the block between vico II Rome vico III Rome was proposed, as an emblematic case of morphological reorganization of a historical aggregate urban fabric, consisting of basic building (Gianfranco Caniggia - G. Luigi Maffei, 1984) on a ridgeline. The decision to concentrate the experimental activities on these two different artifacts, the first exceptional and the second aggregate, was motivated by the consideration that the two cases offered issues and problems that allowed a possible generalizability of the answers and technical-formal transformative solutions. The generalizability concerns both the coherent and adequate modalities of intervention on the stratified and unfinished tissues and those inherent to a certain quality reduced to the state of ruin due to calamitous events, poor maintenance and/or functional and maintenance obsolescence.

Methodology

- The project as knowledge

The primary choice of the DiARC group was to offer the research, in its experimental phase, not a model simulation or a sample intervention but an urban planning project and some architectural projects on specific artefacts and it was supported by the possibility of assuming the project – in its possible architectural, urban, restoration, technological and environmental values – as one of the specific and peculiar ways of understanding physical and immaterial reality in the historical centers and beyond. In fact, if some preliminary investigations of historical-critical reconstruction on the morphogenetic evolution of the aggregates, on the historical-anthropological events that led from the origins to the current conformation of the sub-Apennine settlements as well as the scientific measurements acquired from the survey campaigns expanded, from the infographic side, the baggage of knowledge as priority to any possible transformative/ modifying action on the status quo, the project itself, in its multidimensional value with its techniques, its syntactic procedures, its theoretical-epistemological status of reference and its models allows those objective knowledge to expand and become operative in a hermeneutical sense in view of a better condition of living in the broadest sense of the term. The study area is characterized by the convergence along via Frontespizio of different urban parts – consolidated urban fabric/aggregate on the ridgeline

or open to the landscape of the valley – and includes a number of unfinished head blocks of the historic center, a system of public and natural spaces and a notable building – Palazzo Testa Pelosi – moreover, already investigated in the preliminary phase and then assumed as a paradigm of ways and techniques of intervention consistent with the objectives of the research project.

- The project as transformation

If the project as a specific prefigurative and predictive activity (pro-jectus) expands the knowledge of the physical and immaterial relationship on which it intervenes and of which it provides a version and description expanded at the same time, in order to do it, it must induce transformations and efficient modifications. These modifications, which must always legitimize their choices through the knowledge of the places, their history, their culture but also the respective reference statutes, must be become more well-founded if applied to stratified historical urban fabrics and valuable artefacts that have their formal and figural identity to be protected and valued. In this sense, the modifications that the project induces can not only be resolutive and conform to performance and regulatory frameworks related to static safety, environmental comfort, energy sustainability, technological developments and materials and techniques but have to, just starting from these, offer adequate and responsive solutions to the formal and documental value of the subjects on which they intervene, making choices, selections, transformations able to make themselves intelligible. Conscious and appropriate choices precisely in the ability to take those dates, those values stratified as the very subject of action, as a necessary legacy of the transformation of the "already been" to allow its conservation and its future enhancement in a time consistent with the needs and the ways of today living.

The transformation, in other words, must be appropriate and necessary without attempting precarious recoveries/ adjustments, only technical, or improper restoration in style but not even foreshadowing programmatically dis-tonical interventions with the traces of the past on which these modifications are installed. These shape memory traces, once recognized, classified and decoded, have to be made intelligible and resurfaced in the project to give them new meaning perspectives capable of defining formal constructs responding to contemporary needs. Figurations at the same time, knowing how to put into play the lessons of history and the syntactic orders that the urban fabrics, the typological structures, the materials and the vestiges offer us.

- Theoretical-methodological assumptions

The case of Palazzo Testa-Pelosi, in this framework, is paradigmatic precisely because it raises a number of issues and theoretical and methodological hubs within research and design in the relationship between old and new. A relationship that is particularly significant when the ancient, its vestiges being ruined largely lost their formal unity while retaining a significant testimonial value both for the urban location and for the spatial qualities, for the morphological-typological structure of which they represent a stable stage and formulation. In fact, the building, located along via Frontespizio, in direct relationship with the Cathedral with the entrance aligned with vico II Rome, the last offshoot of the theory of blocks of the Roman-sannita original core and leaning against a curtain block recently restructured, presents to the north a large garden area that slopes towards Via Limiti.

The building that, according to some reconstruction hypothesis, had a series of additions and modifications on the west corner front can be classified as a row aggregated block type that in the central part, in correspondence of the entrance hall, presented a small courtyard completed by a staircase longitudinally arranged with the presence of some arches to define two rooms facing the garden. Today the walls in the ridge of the front remain, together with some portions of the wooden floors in the west part and the masonry in elevation around the scale as well as numerous accretions and incongruous addition in reinforced concrete toward the garden. Moreover, on the main and later lateral side, some stone decorations can be seen, such as the portal, the shelves on the main floor and some squares of the rooms

open on the street. With respect to such a rather shapeless conglomeration of ruin, but which underlies a clear formal now lost order, the theoretical assumptions to which reference are of various nature and orientation. Discarding a priori any hypothesis of reconstruction in style that would constitute a historical false and being impracticable in the absence of sufficient iconographic and graphic documentation also the "museification of the ruins" left in the current state with minimal interventions as often happens in some contemporary ephemeral experiments/ installations, closer to contemporary art than to architecture, the main options examined can be classified into three methodological guidelines which, as we will see below, will produce as many plausible and legitimate design solutions. Furthermore, the three orientations can be ordered according to increasing levels of modification corresponding to the same number of methodological-design attitudes in the "old-new" dialectic and referable to corresponding and alternative building typologies in the interaction with adjacent buildings in the aggregate.

The first orientation – of low modifying impact – that can be defined as "building a shelter to the old" through an elementaryist addition distinguished by shape and used elements, works by rejection and estrangement by introducing new recognizable elements into the building that draw to a syntax different from that of the existing building – which covers and gives new meaning at the same time – although referable to it in the revival of the main alignments, layers and planimetric imprint.

The second orientation – of medium modifying impact – that can be defined as "building above the old", instead operates according to a different strategy in placing a new artefact clearly distinguishable from the existing one, determining an apparent volumetric continuity that defines, in the detachment between the two parts, a new configuration of the building: a construction over the existent that investigates analogous or different expressive registers but to some extent alluding to a possible, even if mediated, volumetric unit.

The third orientation – of high modifying impact – also referable to a series of exempla present in the literature (Giorgio Grassi, 1988), can be interpreted as "building in continuation with the ancient", extrudes the artefact in continuity with the traces of ancient remains not detaching, unless the variation of the materials and the recognizability of the parts, but assuming not the formal and decorative register (falling in this way in the case of restoration or worse of the forgery) but more the regulatory syntax. The scans, the rhythm of the windows, the axialities and the internal spatiality.

Forming process

The design experimentation on the basis of the theoretical methodological assumptions above described has therefore scoured three different solutions that would support and verify in corpore vili the greater or lesser efficiency and adequacy to the case under investigation, according to multiple parameters and requirements (from use to technology and normative feasibility, from energy sustainability to seismic efficiency, to the degree/ impact of induced modification, etc ...) without prejudice on the scientific dignity of the approaches used. After a first phase of elaboration on basic materials that had not yet been regularly verified and systematized by the surveying activities, the research activity proceeded to complete elaboration (the graphic — two-dimensional and three-dimensional — comparative elaboration was made under my guidance by the architects Roberta Esposito and Claudia Sansò (PhDs candidates) and by the architect Davide Casale) of the three compared hypotheses, according to the recent behavioral methodology proposed by Martin Boesch and others (Martin Boesch, Laura Lupini, João F. Machado, 2017) that allow a clear articulation and evaluation of the outcomes, potentials, limits and distinctive characters on the formal and urban level of each of them.

The first solution, in application of the theory of "building a shelter to the ancient", once freed the ruin by incongruous additions, infesting vegetation and non-reconstitutable materials and after restoration and / or integration of missing masonry and stone walls, provides a raised up to the presumable quota of the original eaves cover that eliminating all the incongruous superfetations and restoring only where possible the planks of decking leaves, after the appropriate consolidation and conservation interventions envisaged in the

restoration project (sacrificial surfaces, efflorescence cleaning etc ...), the traces of the pre-existing building left in a state of ruin. A ruin that, however, due to the new roof is not only protected but increasingly re-designed as a civic loggia, a tectonic shelter, designed to accommodate civil functions almost a fenced extension of public space that is recognized and enhanced by the presence of the great "canop" of the cover opening it to the view of the landscape (natural and urban) and likewise making it possible. The metallic carpentry cover that follows the mixtilinear shape of the main perimeter walls on Via Frontespizio turning up along the spine wall at the adjacent building along the continuation of Vico I Roma is supported on the perimeter by a double theory of hieratic concrete columns of suitable diameter (to cope with the peak load and instability phenomena), suitably outdistanced from the existing walls and located in proximity of cantonal to accommodate the orientations and different layers of the urban fronts. The volume of the staircase is recovered and completed at the level of the cimasa offering the possibility of landing at the original level with the realization of a metal walkway with wooden planks for exteriors from which to be able to observe from a high level the typological-material structure of the palazzo through the vision of the masonry crests allowing new views both towards the old center and the cathedral as well as the valley of the Limits and, in the distance, in the direction of the landscape determined by the mountain systems located to the north. In this hypothesis, the choice is to create a semi-open and multi-functional covered public space that presents a hole at the entrance axis in order to sign the presence of an original court. The roof, in addition to being proposed as a device/prototype for the production of alternative energy from renewable sources, will allow the spatial plan, on one hand, to determine a public place connected to the churchyard and in reference to the heads of the blocks in the NS direction of the old center, and on the other hand, to realize a conspicuous visual permeability with the natural background.

The second solution, in application of the "building above" theory, introduces two significant variations in the same constructive and typological scheme. The roof is not unique but double in order to create an inhabited volume appropriately separated by the masonry ridges and supported also by a theory of columns, in this case made of steel and of smaller diameter (as interrupted by an intermediate deck) once again placed in proximity of the cantonal walls. This hypothesis allows, on the ground floor, to recognize the ancient parts illuminated by the hiatus produced by raising the level of disembarkation of the reconfigured staircase and on the first floor the construction of a hypostyle civic hall on the west side and connected services and offices separated from it from the revival of the internal courtyard (illuminated from above by the drilling of the roof). In the architectural features, the stereotomical masonry mode is re-established but in completely different facies in which the new volume diverges and finds in the repetition of the rhythm of the alternating stones and holes a reference to the language of the dovecotes, of the agricultural constructions and of the farms present in the area and investigated in the first phase of the research. The superimposed volume, on the roof and on the first deck, will show a puncture at the entrance axis to point out the presence of an original courtyard. In this case, the perimeter masonry crests will not be reconfigured but only protected with sacrificial surfaces and the distinguishable stone wall integrations will be limited to the reconfiguration of the passage on the right of the entrance portal. The new volume will establish a relationship by contrast and difference with the ruins below and will allow on one hand to provide the village with further public equipment and on the other to preserve the memory of the remains of the ancient palazzo. The northern body that contains the scale will be volumetrically reconstructed with the reconfiguration of the vertical connections (extension of new staircase, new elevator, services duct). The first deck, to allow an effective detachment from the remains, will be placed at a level of about 4 m from the current entrance level to be aligned with the adjacent building deck. The new livable floor, served by the new staircase in continuation of the old one, appropriately equipped with the necessary services and technological systems, will be divided into two parts: the one on the left of the entrance completely uncluttered for exhibitions, meetings and the right one for the study-training classrooms and small conferences.

The third solution instead, in application of the theory of "building in continuation of the ancient", in repeating the geometry and the structure of existing masonry and according

to some reconstructive hypotheses proposed by the disciplines of representation, allows to accommodate many other uses from the original one or even collective functions (training school, exhibitions, etc ...). The new masonry for which several construction technologies can be assumed (masonry/Cold-formed steel with stone coating or plastered panels) is based on the consolidated and regularized existing walls, introducing in the thickness of the existing masonry appropriate connection and breakdown beams or through walls in reinforced concrete in adherence on the internal face of the walls with cantilevered beams, they will be distinguishable from the original ones for grain and size determining in correspondence of the contact surfaces appropriate undercuts. The decorative system – stringcourse cornices, lintels, eaves – will also be undercuts realized to evoke, in absentia, the ancient molding. The windows of the piano nobile will be re-proposed in the presumable size and in the previous height, but not re-proposing any decorative apparatus but only their rhythm and alignment with the existing ones. The reconfiguration of the volume even if in a stylized way reconstitutes an appreciable density and porosity that in the current condition of the ruin is reduced to a two-dimensional enclosure without realizing an authentic volume and living interior space. In this case, stringcourses or decorative apparatuses, still observable in some old photos, will not be proposed again, but the masonry will be moved back to reveal the withdrawal of stone parts now lost. The volume (with pitched roof) will follow the mixtilinear shape of the main perimeter walls on Via Frontespizio, turning up along the wall of the spine in correspondence of the adjacent building along the continuation of Vico I Roma. In this hypothesis the choice is to realize a volumetric reconfiguration in which the ruins will be integrated into the new masonry. From a functional point of view, the building will host, in the same way as in the second hypothesis, a civic hall for exhibitions, conferences, high-level training, tourist info-points connected to the redevelopment hypothesis of the village as a "diffused hotel". The volume will have, at the roof and the first level, a drilled hole in correspondence with the axis of the entrance to point out the presence of an original court. The perimeter masonry ridges will be integrated at the foot of the new distinguishable walls (stone, adobe, empty case, etc ...) placed in continuity that will also affect the reconfiguration of the door placed to the right of the entrance portal. The volumetric completion will establish with the ruins a relationship by affinity and will allow on one hand to provide the village with a further public equipment and from the other to preserve the memory of the remains of the ancient palace, in this case, reused and incorporated. The northern body that contains the staircase, likewise, will volumetrically reconstructed through the reconfiguration of the vertical connection (recomposition of the staircase, new elevator, services duct). The first deck will be aligned with the original level of the main floor located at about 3 m from the current entrance level. The new livable space, served by the new scale continuation of the old one, suitably equipped with the necessary services and technological systems, will be divided into two parts: the left of the entrance divided into two spaces for exhibitions, performances, and the right to study-training rooms and for small conferences.

Conclusion

Downstream of the experience conducted in the final testing phase it is possible to propose some considerations which, however, not intended to be definitive but representative of some findings, emerged in this demonstrative verification stage of multidisciplinary and interdisciplinary knowledge, shared in the inescapable preliminary investigation within the industrial research. The three here developed proposals allow not only and not so much their comparability and measurability of the effects that each of them induces on the different plans and expectations assumed by the research but above all the confirmation of the methodological coherence that has innervated it. In fact, if there had not been, in the various areas of interest and competence involved in the project, a specific and well-founded application of those knowledge oriented and based on the choices, this preliminary activity would not have had, de facto and de re, the possibility of determining generalizable results that can be transferred to a wider community with relevant modifications and improvements in the state of the techniques and methodologies that can be used in historic contexts, on buildings with particular architectural, environmental and cultural values.

In this sense, the three solutions discussed and developed by the research group, in turn, referring to different recognized and complementary theoretical and methodological models, were deliberately kept together, without choosing one of them because they were all legitimized by a scientific and cultural foundation and therefore provided – as more and more in the recent debate on these issues (Renato De Fusco, 2012) – to be used "case by case" on account of the objectives, goals, costs, practicability, constructive efficiency but also of the social reception which, every time, one must be able to feel represented and to recognize in those forms, in those spaces. Forms and spaces that are not only available to be used but also to convey renewed values and meanings.

Figure 1. Sketch of early proposal.

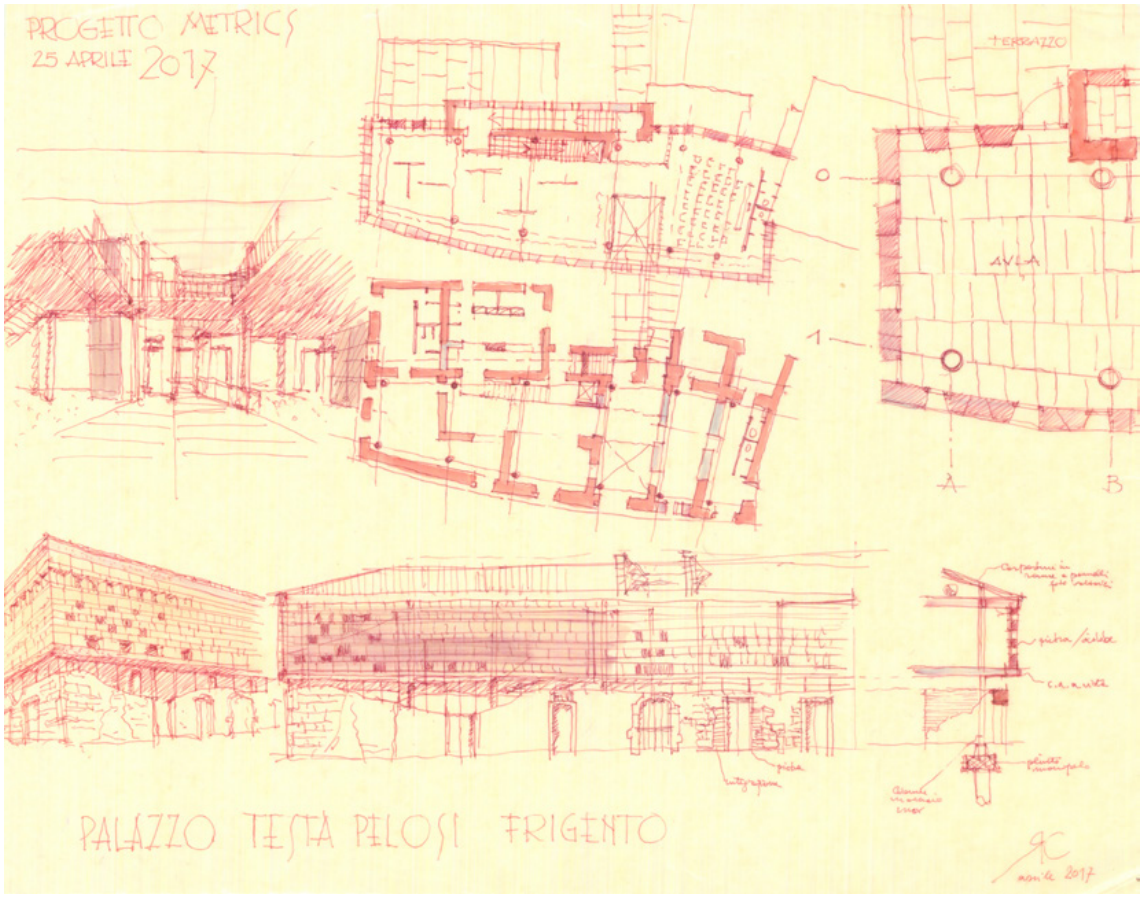

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Figure 2. Comparative axonometries of 1st, 2nd, 3th, 4th solution.

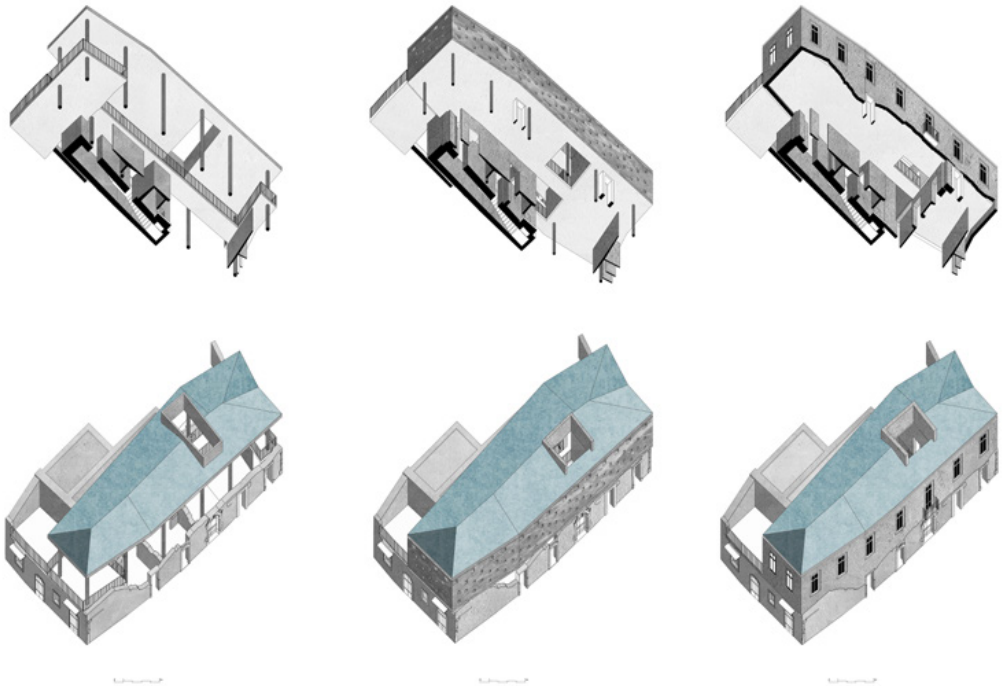


Figure 3. Comparative concept.

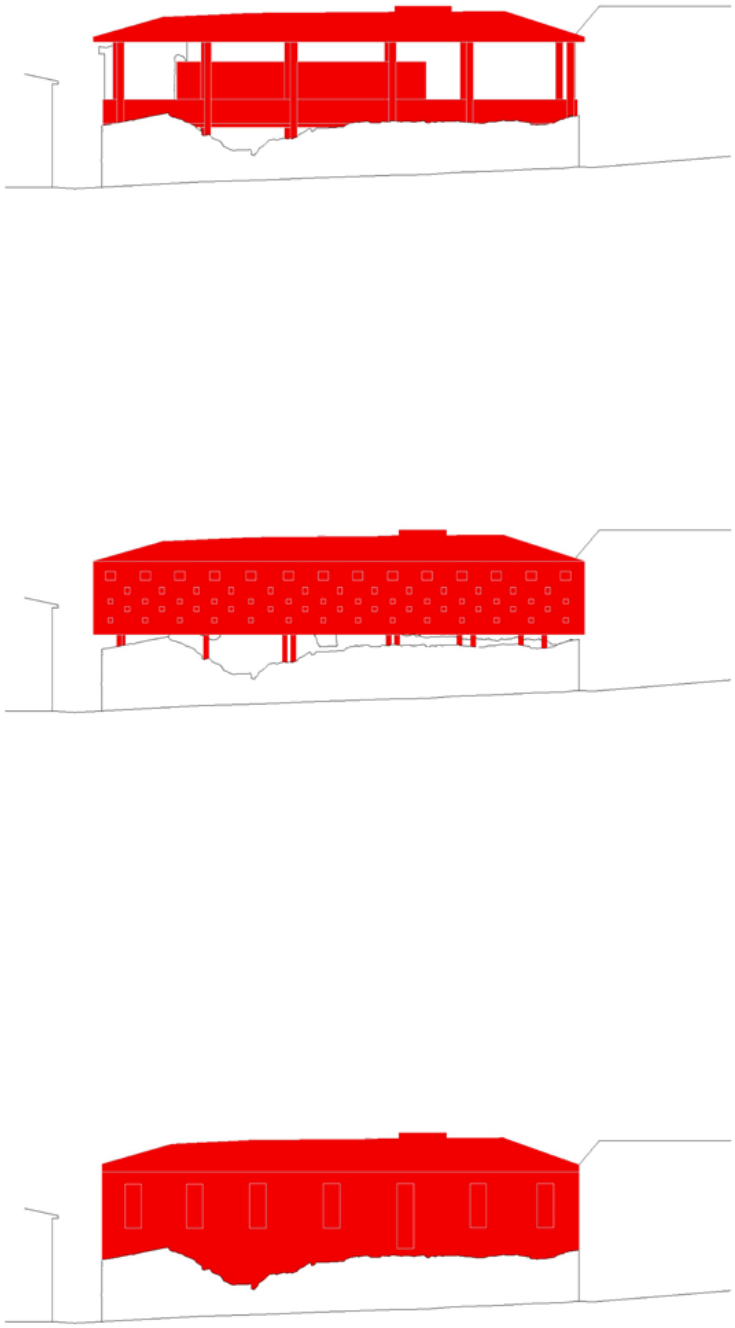
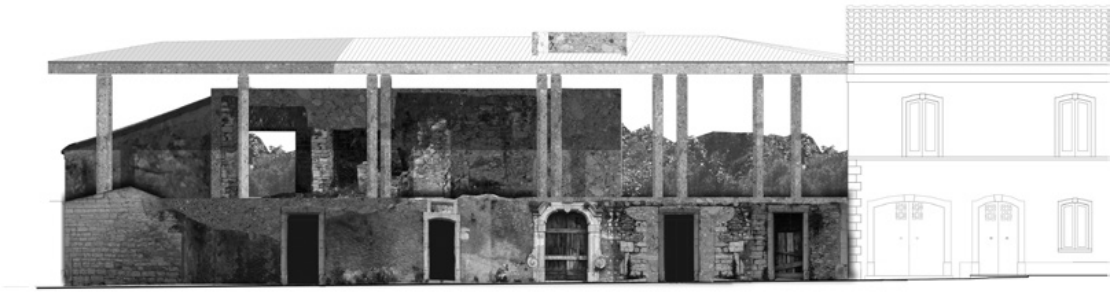


Figure 4. Collage of the 1st solution "builiding a shelter to the ancient" .



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Architectural forms on archaeological ruins: a tectonic approach

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The tectonic dimension of architecture, with its ethical approach to the urban transformations, as prefigured by many studies as well as demonstrated by reasonable design experiences during the last decades, may be a guarantee for the contemporary urban and landscape form sustainability. But what happens when its required to establish a direct relationship with an existing structure such as a ruin, a historical trace or an ancient wall? In which way the design process starts to be influenced by the presence of the archaeological ruins and what kind of tectonic relationship could be constructed between new architecture and old constructions?

The addition of a new building in an archaeological settlement poses a problem in terms of architectural and constructive solutions and the role of tectonics, in its semiotic and epistemological dimension, becomes fundamental in order to recover an ethical approach for the architectural design able to change the current interpretation of the Vitruvian triad in which utilitas (conditioned by economic rules) totally outweighs firmitas (ensured by technical customaries) and venustas (distorted by wrong cultural references), bringing it closer to a new poetic quality for the project.

The essay addresses these issues through the analysis of some architectural experiences in archaeological contexts with a view to find out new strategies and tectonic approaches more linked to the cultural identity of the places.

Introduction

The tectonic dimension of architecture, with its ethical approach to the urban transformations, as prefigured by many studies and authors like, between others, Kenneth Frampton, Hans Kollhoff, Gevork Hartoonian, etc., as well as demonstrated by reasonable design experiences during the last decades, constitutes nowadays the only choice to avoid, in the architectural discipline, on one hand the effacement of history and on the other hand the tendency toward the ephemeral and sometimes rhetoric scenographic representations: a reaction to some contemporary trends in architecture which distort the natural and traditional urban and landscape form concept of sustainability, to which the tectonic approach opposes an architectural design experience deeply rooted in space and time (Paris, 2016).

But what happens when the project is required to establish a direct relationship with an existing structure such as a ruin, an historical trace or an ancient wall? In which way the design process starts to be influenced by the presence of the archaeological ruins and what kind of tectonic relationship could be constructed between new architecture and old constructions?

The addition of a new building in an archaeological settlement poses a problem in terms of architectural and constructive solutions and the role of tectonics, in its semiotic and epistemological dimension, becomes fundamental in order to recover an ethical approach for the architectural design able to change the current interpretation of the Vitruvian triad in which *utilitas* (conditioned by economic rules) totally outweighs *firmitas* (ensured by technical customaries) and *venustas* (distorted by wrong cultural references), bringing it closer to a new poetic quality for the project.

In this mark, this essay tries to outline an analysis methodology for the architectural forms in ancient context that, starting (in the paragraph called 'Methodology') from the recovery of the above mentioned Vitruvian triad in a contemporary vision and passing through the 'montage' as a way to reach a new idea of 'unity', arrives to the tectonic approach as a way to ethically control the new interventions criteria in the archaeological contexts, in which the new building becomes a 'fragment' of a larger cultural context. Then, in the following paragraph ('Forming process'), the essay briefly reconstructs the cultural path of the architectural approach in the ancient urban context from the Fifties until today, showing as study cases three important recent experiences through which emerges a thesis that demonstrates how the issue of the relationship old/new is strictly related to the instances of tectonics.

Methodology

Constructive montage versus architectural unity

In the Vitruvian architectural triad, as described in *De Architectura*, is possible to find out the will to search and finally establish a unity between 'thinking' and 'doing': a unity to which nothing can be added and from which nothing can be taken away and, moreover, where it's explicit the strong integration existing between style, rules of the materials and properties of the constructive systems. In other words, the traditional *utilitas*, *firmitas* and *venustas* are not abstract concepts but concrete architectural elements useful to establish clear and ethical scientific principles. Even if here it's unquestionable the coincidence between the idea of 'unity' with that of 'classical' (or, better, 'continuity of the classical'), it is also true that the Vitruvian thought also contains an important sign of modernity that is the relationship between history and new materials and techniques, expression of a semantic connection between signified elements and factors which give them significance (Hartoonian, 1994).

In the modern age, in the field of architecture, the classical unity all too often seems to be broken and this condition can be unequivocally considered the main cause of the 'crisis' and sometimes of the radical separation between old and new (Tortora, 2006). Gottfried Semper, with his four elements of architecture (earthwork, hearth, roof work and screen wall, images of the four industries of masonry, ceramics, carpentry and textiles, respectively), has

been historically the first in breaking with the Vitruvian triad: in his theoretical approach the classical unity with its coherent totality and its linear progression is transformed into a new dimension made of informal, social and cultural architectural elements whose relationship starts following a new mechanism, still relevant today for the architectural debate: the montage (Semper, 1852).

The montage qualifies as an idea, perfectly compatible with the contemporary trend towards the fragmentation of the constructive and architectural artifacts, that becomes a process through which on one hand the idea of tradition is reinterpreted with new forms and new technologies and on the other hand new relationships are defined between elements that now are not technical any more but mostly 'cultural'. Is in this sense that Semper, studying in particular the relationship between earthwork and framework, establishes the first action of montage that consist of bringing together the traditional masonry construction and the modern steel frame construction, which are the main formal, constructive and architectural categories and at the same time can be the symbols respectively of the 'old' and the 'new' (Frampton, 1998).

The new triad: tectonic, type and techne

It's for this reason that we can operate a transposition from the duality earthwork/framework to the dichotomy ancient/modern: the earthwork is the action that marks the site and, becoming the base for the new building, can be represented by the ancient archaeological walls, while the framework, seen as a textile articulation of heaviness and lightness, enclosure and exposure, can coincide with the new contemporary constructions. This transposition demonstrates the importance of the tectonic culture also in the cases in which an architectural form is required to establish a relationship between the rational and the ethical dimension of the new interventions and the historical remains. Thus, if we re-discover the role and the meaning of 'tectonic', we can join together form and construction, architectural figures and technical facts, through the cultural identity of any construction, both old and new: this means that the concept of construction is enriched not only by the modern rational technological devices, tools and fabrication rules, but primarily by 'knowledge', 'awareness of the places', consciousness of the social and historical values, and this brings our reflections to the concept of 'techne' that, unlike technology, strictly belongs to the dimension of the cultural values of a territory. Moreover, if we consider 'The question concerning technology' by Martin Heiddeger, we find a very useful convergence between 'techne' and 'poetics' in which techne is also 'revealing' the knowledge and the significance of something that always has been in a certain place or, in other words, an ontological intersection between 'tectonic' and 'type', where the latter is intended as a constructional form that, maintaining its permanency in the continuous modification of custom and use, becomes an inner formal structure constituting the cultural significance of the architectural objects (Heiddeger, 1977).

The importance of this confluence of 'tectonic', 'techne' and 'type' referred to duality old/new lies in the fact that in the relationship between ancient ruins and new architectural forms, a dialogue can exist through the definition of a common language between new and old, in which the new form transcends its geometrical and functional aspects and reaches a unity whose boundaries are design directly by history, memory and identity (Muntañola, 2002). Furthermore, objectifying the 'same' in the 'different', bringing together the making of a construction with the construction itself and carefully alternating attitudes of concealment and exposure, the triad tectonic-techne-type permits the restatement of the ancient constructions by new means and new significance according to the contemporary social values, using new forms and materials without dominating the existing ones.

Forming process

Historical environment and case by case

The origin of the modern tectonic approach referred to the new architectural forms in

the historical contexts can be traced back to a change of behavior that took place in the second half of the Fifties by a group of young architects among whom there are names like Franco Albini, Ignazio Gardella, Giuseppe Samonà, Ludovico Quaroni, Saverio Muratori, Mario Ridolfi and Ernesto Nathan Rogers, who for the first time tried to bridge the gap between new architecture and historical context by joining the concept of 'environment' inherited from Gustavo Giovannoni with the adherence to the principles of modernity. The latter, in particular, in his book 'Esperienza dell'Architettura', published by Einaudi in 1958, tries to outline a real theory, saying that as history has never been a static system but a 'sequence of mutations', the contemporary society needs to be expressed by a temporal presence in a certain urban space (Rogers, 1958). This means that the ancient city goes back to being 'contemporary': always made of specific elements, characteristics and special formal qualities, it becomes a place capable of being transformed. Thus, the modern architectural language becomes for its part manageable, context-sensitive and able to build relationships of 'analogy' with the environment, so far as to often reduce its objectivity and its physical substance. But this approach has suffered from some limitations that mainly concern the difficulty for its architecture to relate deeply enough with the ancient urban context, of which it used to consider almost exclusively the formal and the environmental aspects, may be due to the more prioritized interest in offering an alternative to the International Style's rules.

Typological structure and analogy

The critics to the positions of Rogers come during the Sixties from Aldo Rossi with the opposition between the concept of 'environment' and that of 'typological structure', in which the monuments regain a primary role in the urban grid. The peculiarity of these new attitude lies in the fact that while the Roger's generation used to consider the historical city as an 'environmental *unicum*' made of buildings with certain dimensions, proportions and alignments, Rossi considers the historical city as a system of 'urban facts' that, with their individuality, relate to each other through an urban texture defined not formally or volumetrically but 'typologically'. For Aldo Rossi, then, the quality of a new form in the ancient context depends on its potential to become part of the typological rules of the urban structure, always maintaining its formal autonomy (Rossi, 1966). It must be said that between Rogers and Rossi there's a common ground called 'analogy', an approach that is opposed to any mimetic behavior that tends to conceal the new intervention in face of the existing city. Furthermore, analogy means continuity with the pre-existence: a condition in which the new form finds legitimacy only if it looks for an ontological substance.

The analogical process, in the last decades has radically changed because of a renewed vision of the 'context': the increasing necessity to 'musealize' the archaeological settlements (and in general all the historical remains) and to provide them with new buildings for tourist accommodation, expositions, etc., has generated a more 'contextualistic' behavior that worries about the integration with the environmental and archaeological context through a constant research of a dialogue of forms and materials. Thus, the new architectural constructions must be generated by a deep knowledge of the 'site' and of its history that leads to a 'poetical discretion' more than to a 'mimetic typological repetition'. The intervention at the Museum of Castelvecchio (1956-64) by Carlo Scarpa can be in this sense considered emblematic: the ancient walls become materials for the project and besides them we can find additions, structural replacements, new elements and materials, whose mutual autonomies dialogue democratically in space and time one to each other in a new ethical unity where the 'contemplation' leaves room for the 'critical knowledge'. In the same way, the project for the Roman ruins' protection in Feltre (1975-78) by Carlo Scarpa is itself a critical lecture of a context characterized not only by ancient ruins but also by the presence of a church (The Feltre Cathedral) and by the necessity to build a church square in front of it: a dialogue between different ages in which new functional necessities linked to the contemporary use of an historical space are taken by the project that chooses to work on the topic of 'accessibility' and 'limit', designing the connections' profiles between the time and spatially different parts using modern materials like reinforced concrete and steel.

One of the first experiences coming from the debate on the relationship ancient/modern

and practically applied to an important archaeological settlement is represented by the project for the archeological settlement of Villa del Casale in Piazza Armerina (1957-1963) by Franco Minissi. Here for the first time architecture as a discipline reclaims its right of coexistence with archaeology and, even if operating with an analogic approach, declares its technological and constructive autonomy and its formal recognisability. Minissi demonstrates first of all that the protection of the archaeological antiquities can be done *in situ*, using the most advanced technologies (reversible structures, innovative materials, etc.), secondly that the conservation requirements can co-exist with those of the memory reenactment. The project gives back the spatial and volumetric image of the Roman *domus* introducing some innovative principles such as the dialogue with the social context, the legibility, the reversibility and the technological flexibility.

The urban collage

Due to a radical change in the critical vision on the urban growth, in the Sixties develops a new *modus operandi* that, unlike the previous interpretative methodologies, doesn't look for a 'contextual order' but, considering the place as made of parts coming from different codes and ideally and historically far apart one to each other, is based on the principle of 'multiplicity': not the search for a final and well-defined configuration, but the definition of an architectural discontinuity characterized by a dualism in which the historical time is crossed by an equilibrium between 'identity' and 'difference'. Just like the mechanism of the *collage* in which techniques of significance are developed starting from the opposition of autonomous fragments that being faced they produce a new specific meaning, in the same way the architectural design by comparing the old structures with the new ones finds the form in which past and present recognize one another. The interventions attributable to such approach tend to define a sort of microcosm in which the architect becomes the creator of a new heterotopic order obtained with the use of formal devices that follow the logic of 'dispersion': an attitude that far from emphasizing the existing system of rules, prefers to follow the technique of *collage*, basically free even if sometimes governed by precise typological schemes or conditioned by the presence of certain urban fragments (Bagnato, 2017).

Permanency versus addition

At the beginning of the Eighties, the attention for the ancient contexts changes its interpretative approach due to a new issue that becomes fundamental in the debate on the relationship between old and new: the conservation. The conservation, referred to any kind of old construction, now represents the only way to act on the ancient contexts where, tending to reject all kind of new forms, *de facto* it pauperizes the architectural design, defending as a general concept, the 'material permanence'.

The first architectural exposition at the Biennale of Venice in 1980 directed by Paolo Portoghesi and entitled 'the presence of the past' and, some years later, the issue no. 498/9 of the review 'Casabella' entitled 'architecture as modification' are proofs of the urgent necessity to establish a new system of value for the architectural discipline. The immediate effect of the debate generated by these cultural events is that on one hand every part of the urban territory is finally included in the ambit of 'heritage' (and not anymore only the ancient town), on the other hand that the actions of 'building on the built' become 'typical' and as such, it affects any kind of strategy of architectural design. This means accepting that is impossible to define a unique universal system of aesthetical values and, on the contrary, that is necessary to evaluate critically each situation before any kind of intervention. Thus, becomes clear how the only way to ensure the maximum respect for the ancient contexts' historical values is to archi-tectonically qualify their natural and inevitable transformations, through different operations that must be on one hand necessary, on the other hand absolutely non-invasive and non-traumatic for the environment.

A particularly significant experience of these years is the project for the reconstruction of the Colossus of Nero in Rome (1982-84) by Carlo Aymonino. The project, which comes from a

general reflection on the Imperial Forum, expresses the necessity to complete an important urban place through an act of 'addition', that is in other words the placement of a new architectural form. But it's with Leonardo Benevolo and Vittorio Gregotti, commissioned by the Superintendence to propose a plan for the area of the Imperial Forum in 1984, that the problem starts assuming a tectonic significance: for the first time we talk about 'connection' between different archaeological parts and between different quotas, 'nodes' between ancient walls or foundations and ground, 'constructive relationships' between structures of different historical periods (Gregotti, 2000).

From the subtracting architecture to the architectural fragment

During the Nineties, the approaches that consider the architectural intervention as an 'addition' leave space for a new sensibility that introduces a new form of dialogue between ancient and modern based on operations of 'subtraction', that means excavation and ground-modelling: in a certain way, this interpretative approach is intended as a conceptual interpretation of the archaeological excavations but not with the aim of getting documentary information but rather to recreate the lost historical memory of the site. In other words, the new strategy tends to reduce the quantity of the architectural signs making the new interventions more 'discrete' and 'minimal'. Even during these years the lesson of Aldo Rossi becomes fundamental: in *Autobiografia Scientifica*, published in 1990, he lays the foundation for the overcoming of the dichotomy ancient/modern, substituting the idea of 'archaeological find' with that of 'architectural fragment' (Rossi, 1990). This overturning of the conceptual framework *de facto* joins together the idea of 'ruin' with that of 'architectural object' because the fragment is no longer dependent on history and on its role of evidence of the past, becoming a purely architectural element able to generate new forms and new meanings: what happens is not that the ruin becomes modern, but, on the contrary, is the new that becomes 'archaeological' in an a-temporal dimension.

The contemporary age: some examples of architectural forms on urban archaeological ruins

Joining together the tectonic methodology with the dialogic design approach coming from the development of the 'analogy' as a behavior, is possible to analyze some recent architectural experiences attributable to the topic of interventions in ancient urban contexts, with a view to find out new aesthetical parameters and ethical strategies more linked to the cultural identity of the places.

Between the recent design experiences in which is possible to identify a plausible tectonic path related to the duality old/new, an important examples is represented by the Kolumba Museum in Cologne (Germany, 2007) by Peter Zumthor. The new museum is an 'addition' on a dense archaeological site in which the ruins of the Gothic Church (produced by the bombing of the Second World War) have a very deep symbolic significance. Respecting the original plans (thus working on the concept of type-tectonic) the new building tries on one hand to bring all the fragments and materials into a new unity, on the other hand to dialogue with the urban environment creating an aesthetical architectural continuum that restores a corner of the historical city center. The external seamless wall is a sort of 'masonry membrane' whose textile character with all its nodes and joints is perceived not before the detail scale, while the internal space is the place of memory in which the ruins remain into an a-temporal condition.

As a second example, the cultural Center 'Escuelas Pias de Lavapies' in Madrid (Spain, 2004) by José Ignacio Linazasoro works on a different kind of dialogue with the ancient history: here the concept of 'unity' is not as much referred to the physical-morphological dimension of the historical architectural complex as to the categories of interventions, and this happens because the design strategies don't make a distinction between the actions of restoration, renewal and new addition. The new walls are based upon the old ruins of the Church of the *Escuelas Pias de San Fernando* but the entire building, that contains a library and some university classrooms, includes also the contiguous courtyard and finds a relationship with

the Agustin Square too. Moreover, respecting the tectonic articulation between basement (massive and devoid of openings), corpus (with high opening in a more articulated wall made of constructive elements with vertically corresponding joints) and crown (a simple horizontal slightly overhanging dark steel covering), defines a unity that also passes through a montage of constructive materials that from the ruins permeates the whole building.

The third and final example is offered by the Extension of the Architectural Association of Tarragona (Spain, 1992) by Rafael Moneo, in which the new architecture interprets the concept of montage as a 'construction of different temporalities', establishing new rules in the relationship between historical remains and new building. Starting with the elements having the greatest historical value (the high-imperial diving wall and the façades of the houses on the cannon Canals and Arcadia), the new building, by positioning along the existing walls, creates two new façades: the first one throughout the length of the St. Lorenç Street (more sober and discreet), the second one inside the plot towards the new courtyard (more rational and articulated). The tectonic approach consists of giving physical and social significance to the *topos* (image of the memory of the place) and the *typos* (expression of the identity of the urban structure), thus the final aesthetical configuration is produced by the acceptance on one hand of the morphological invariant of the old urban context, on the other hand of its scale. The latter, in particular, is respected and re-represented in the new construction with an ethical proportion of constructive elements and voids, openings and walls, and through the rhythm of nodes and joints between formally different architectural elements.

Conclusion

As a short conclusion, without being exhaustive and far from giving definitive solutions, we can try to give a plausible answer to the questions contained in the introduction to this essay: what happens when a new form is required to establish a direct relationship with an existing historical structure, and in which way the design process starts to be influenced by the presence of the ancient ruins? First of all, the definition of a new form comes from a clear 'idea of construction' in which the old walls and the new elements belong to the same tectonic unity; secondly, the aesthetical strategies concerning the new interventions result from concrete system of actions depending on the actual constructive processes' rules. This first claim is compatible with the concept of 'ontology of the present', expressed by Michael Foucault, who interprets the modernity as a dimension referred to what of the past is till operative in the present (Foucault, 1997), and with the idea of 'otherness' outlined by Paul Ricoeur, a dialectical process of an autonomous cultural product anchored within a given cultural experience whose appropriation happens through actions of montage (Ricoeur, 2000).

Thirdly, this 'architectural unity of construction' in which the traditional Vitruvian triad is integrated by the triple Framptonian declination of 'typos' (institution), 'topos' (location) and 'tectonic' (art of construction) would not reach a progressive abstraction of its forms but rather works on the congruence of scale, proportions and materials. And finally, in the above outlined process of montage, the architectural production is at the detail scale that reveals its tectonic logic because is here that becomes important the role of the 'joint', a fundamental discontinuity always existing in any architectonic system (masonry and/or tectonic), thus indispensable part of the tectonic form (as enshrined by the semperian *bekleidung*), that conceptually represents the (open) distance between sign and significance, a gap in which the contemporary design can fit through a specific interpretation of the present time.

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Authenticity[1]/Identity. Forms and Features of the Post-Earthquake Reconstruction

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The recent and iterated seismic events that have affected the Italian Apennine regions have highlighted on the one hand the inconsistency of the preventive measures and the safeguarding of our heritage, and on the other the concern for the safety of the places, for the reconstruction of their identity and beauty. The decision to rebuild the cities "where they were" derives from the will to stay in the places hit by the earthquake as an identity choice and expression of the cultural roots of the populations in their territory. The aim of the research to which this essay refers is the definition of models for the construction / reconstruction of the Italian hill town, capable of combining the theme of safety with those of authenticity and identity.

The methodological, multidisciplinary, multiscale and experimental method is based on the identification of three intervention scales, that of the single building unit, of the aggregative forms and of the urban parts or recognizable fabrics, defining a conforming dimension of the intervention able to restore the authenticity of the places not referred to an a priori defined aesthetic identity but as the result of a design thought that consubstantially combines constructive and formal value. The case study identified is the village of Trisungo in the municipality of Arquata del Tronto, a valley settlement along the River Tronto and the Via Salaria. The project assumes the elementary urban unity as conforming dimension of the intervention, considered as a morpheme capable of expressing in an organic way the reaction between the spatial, typological and morphological characteristics of the village in their relationship with the forms of the ground and its stratigraphic composition.

1 From the Greek *authentikós*, by his own hand, which corresponds, in the Western world, to authentic and original. The concept of authenticity assumes, over time, different meanings: for Plato, the authenticity of the work of art was closely linked to the creative idea, from which many copies could spring. In the Vocabulary of the Academics of the Crusca (1612) there is the definition of "authentic" as "valid, authoritative".

Introduction

The frequent natural events such as seismic or hydrogeological events that mainly affect the Italian hill regions highlight the ineffectiveness of preventive measures and the absence of a strategy for the protection and recovery of architectural and landscape heritage.

The historic absence of an effective protocol for reconstruction following natural disasters causes insecurity in the affected populations but also the conviction to rebuild their cities to continue living in native places, to recover material and immaterial identity as an expression of their cultural roots.

The aim of the research line started in the Dicar and Dicatech Departments of the Polytechnic of Bari, of which a partial summary[1]. is presented here, is the identification of models for the prevention, recovery and reconstruction of the cities hit by the earthquake, combining the theme of safety with that of safeguarding the the identity and authenticity of places, starting from the recognition of the authentically distinctive characters of the places affected. The challenge of research is to summarize, in the strategic choices aimed at the reconstruction of the places affected, the "technical" reasons (structural stability, safety requirements of public spaces, living and functional comfort) and "formal" reasons (relationship between orographic and urban types, recognizability of elementary urban units, form and character of urban spaces), recognizing in the link between forms of the earth and forms of architecture able to interpret the profound reason for the identity of places.

The case study is represented by the urban center of Trisungo placed along the Tronto river within the municipality of Arquata del Tronto (Ascoli Piceno).

Theoretical Content

The beauty of the Italian hill towns is in their authenticity, in the identity of their urban forms, in the permanence of the "classic landscape" of which they are a part, the result of a building and housing tradition that is constantly renewed, often as a result of extraordinary events such as the earthquake which, in addition to being addressed for its urgencies, linked to the sense of insecurity[2] of the communities affected constitutes an "opportunity for regeneration of the existing city"(VENEZIA F., 2016). The communities recognize themselves in the landscape, a space that returns identity (CORBOZ A.,1998) through, the permanence and the recurrence of those "signs" of the territory such as the soil control works (centurions, substructures, dry walls, etc.) that over time they are merged with the geography of places to a process of total identification, becoming a system that unites often disjointed spaces (MARINI S.,2010). The permanence of these signs, of settlement and housing principles, of urban forms and their constitutive grammars, of the physical characteristics of natural landscapes, expresses the authenticity of places as a result of a tradition.

The decision to "rebuild where it was" renews this tradition: rebuilding the affected centers allows people to remain living in their places of origin, not only as an expression of their cultural roots but also to reconstruct the immaterial aspects of reality (beauty, culture, social cohesion, participation) to be considered as substantial aspects of social reconstruction and the cultural identity of affected communities. The uprooting produced by the blind politics of the new towns, substantiates the nostalgia of the places of origin and their authenticity and the will to reconstruct their beauty, strengthening the will to remain in the places affected and continue to inhabit them.

Because if "Building means collaborating with the ground (...) contributing to that slow transformation that is the life of the city itself (...) Rebuilding means collaborating with time in its aspect of" past ", grasping its spirit or changing it, extending it, almost , towards a longer

1 In particular, the topic presented here was developed within a Graduate Laboratory of the Master's Degree in Architecture, focused on the problem of seismic risk mitigation, securing and reconstruction of minor settlements in inland areas, addressing at different scales, the restoration of existing buildings, the recovery and reconstruction of urban forms compromised by the earthquake, and, where necessary, the construction of new settlements.

2 In Italy there is a natural destructive event every five years (seismic events, disasters caused by the hydrogeological instability of the territory, etc.) a clear sign of the high rate of exposure to risk that brings our country closer to those sadly most famous for their vulnerability like Chile, Japan, Turkey, India.

future; means to discover the secret of the springs under the stones" (YOURCENAR M., 1981)

Research methodology

The research is aimed at identifying and design experimenting of a method for the reconstruction of the cities affected by the earthquake, starting from the need to mitigate the seismic and the hydrogeological risks in the Inner Areas of the country, both by making the territory safe and by promoting natural and cultural diversity to start an organic process in which prevention, safety and reconstruction are part of a unitary "maintenance" project of the environment (BARCA F., 2013) [3].

The partial or total reconstruction of the cities, having lost the authenticity of the buildings, the spaces of the city and the affected territories, constitutes an opportunity to reconstruct the identity of the places through the reference to the constitutive grammars of the *Forma Urbis* in relation to their ability to interpret the forms of the ground. The reconstruction of the city "where it was" envisages partial or total substitutions of elementary urban units whose shape, congruent with the urban layout and the underlying structure, is able to ensure the permanence and legibility of the shape and spaces they define formal identity and structural authenticity of the urban system, guaranteeing the coherence and compatibility of the project with the consolidated features.

The elementary urban unity is assumed as a conforming dimension of the project intervention, that is a morpheme able to express the identity of the city as a synecdoche, through the profound relationship between the forms of the ground and the forms of architecture that integrate and complete the physical forms of the site, ensuring the permanence and the recognizability of the identity features of the places.

The morphological-type analysis of physical and environmental contexts, associated with the knowledge of the material and immaterial culture that produced them, provides the tools necessary for the recognition of the distinctive features of territorial, urban and building structures, on which to base the development of new integrated settlement and structural models. An analogical process of design experimentation is associated with a logical process of building a cognitive framework. In particular, the aim of the research was to define a new intervention methodology that combines research on urban and architectural forms and spatial configurations of the city with that on appropriate structural forms responding to seismic stresses. Therefore, "elementary urban units" have been identified that through bases, podiums and substructures are able to establish a significant relationship with the physical form of the site and to identify unity as a form resistant to the actions of the earthquake. This presupposes an organic vision of the problem of prevention / control / reconstruction in which, through a multidisciplinary approach (geology, geotechnics, structural engineering, hydraulic engineering, architecture, urban planning but also sociology), the problems relating to the different spatial contexts constituting the territory are faced , capturing the inter-scale relations between architecture, city and landscape. The project is assumed as a tool of knowledge that develops in a circular way integrating itself with the analysis and assumes the role of an experimental verification tool of the theoretical and methodological aspects of general value, applied to paradigmatic case studies.

Forms of the ground and forms of the settlements of the upper Tronto valley

The formal structure of the territory has been analyzed considering its inter-scale dimension (geographical territorial units, urban nucleuses, aggregative forms and urban spaces, single architectures) to recognize the significant anthropic and natural and identities features through the relationships between settlement and housing systems and the geographical forms with their geomorphological nature.

The identified study area coincides with a finite geographical form, able to delimit an interior and circumscribed space as a "territorial room" endowed with its own settlement

3 "Nuove strategie per la programmazione 2014-2020 della politica regionale: le aree interne". Italy in the National Reform Plan (PNR) has adopted a Strategy to counteract the demographic fall and relaunch the development and services of these areas through ordinary funds of the Stability Law and EU funds.

and anthropic structure: it consists of the section of the Upper Tronto Valley between Capodacqua and Aquasanta, a landscape unit formed by the valley and its slopes within which the Tronto river flows.

The main settlement structure is that of the valley floor of Roman origin, consisting of the Via Salaria which runs parallel to the river and of the discontinuous *centuratio* orthogonal to it that identify a double-comb structure at the bottom of the valley.

This linear system, which is integrated with the agricultural particle structure developed in the lower part of the valley and compressed by the presence of the mountains, corresponds to a second settlement system of medieval, punctual and nuclear origin, placed high on the peaks and headlands.

The urban centers downstream are mainly linear and open city-roads, while the high ones, located on the promontory, on the slope or on the acrocoro are mainly nuclear and closed. The form of settlement structures and urban nuclei has a direct relationship with the geo-morphological and geophysical features of the territory, highlighting the relationship between seismic hazard and the shape of settlements: the open and linear one has withstood the earthquake better than the closed nuclear one has suffered the greatest damage.

The critical interpretation of the cognitive framework allows identifying characteristics at the different scales to be assumed as "invariants" of the project, recognizing the elements of crisis of the historical forms of the settlements.

Settlement and structural integrated models for the post-earthquake reconstruction of the upper valley of the Tronto river. The case study of Trisungo

The case study is represented by the urban nucleus of Trisungo in the municipality of Arquata, between the villages of Capodacqua and Acquasanta, a valley bottom settlement along the Tronto river that suffered extensive but not total damage caused by the amplification effect of the seismic stresses that the alluvial consistency of the soil has induced.

From a morphological point of view Trisungo is a city-road formed by the synecistic union of distinct parts (Ponte, Capo la Villa, Trisungo and the area of the Vicinato mills) arranged in an alternate and asymmetrical sequence of buildings and vegetable gardens along the two opposite banks of the river, connected by a stone bridge. Each of its nucleus takes form and finiteness based on the conformation of the soil on which it is located, developing the typological paradigm of the area in an identity-based manner according to the shape of the site. This recognizes the way in which the Italian hill town assumes the forms of the ground as its etymological roots, showing an uncommon ability to interpret the relationship with nature, that is, to represent, through the forms of architecture, a deep relationship with the shapes of the land, building a place (C.Martì Aris 2009). Its formi s a that of a longitudinal and linear double-combed road city, which accompanies and flanks the position of the river.

The main route partially coincides with the ancient site of the Via Salaria: from it orthogonal roads depart that end against the slopes that delimit the valley bottom, creating a fabric of perpendicular *strigae* or *scamnas* parallel to the river.

The primary elements and the collective spaces are constituted by the churches and their churchyards, placed on hillocks or on the highest plates of the riverfront.

The stone bridge replaces the existing wooden one and fixes the root of the two linear settlements of Trisungo and Capo la Villa. The elements of relationship between building and topography such as basements, terraces but also cordonades, stairs and terraces, identify and relate urban units to the form of the land, topologically establishing their permanence.

The identity of the three constitutive nuclei derives from the typological and settlement differences of its elementary urban units, from their positions and from the construction systems adopted according to their ability to interpret the geomorphological characteristics of the site.

They correspond to 3 aggregative *morphemes* consisting of as many housing types: the row of houses with "Buffiria" in wood, monocellular or multicellular aggregated according to linear isolates perpendicular to the river at Trisungo; the row of houses with "profferlo" aggregated according to linear blocks parallel to the river in Ponte; the nucleus of isolated and oriented houses, or accidental aggregates, in topological tension between them on

the rocky spur at the foot of the bridge at Capo la Villa. The morphological units are also structural units, in which a static equilibrium of the whole is reached through the rotation of the buildings of warhead that contrast the isorientated aggregation of the internal rows, also formally connoting the head with respect to the building curtain.

The behavior of these urban units, which have suffered the most obvious damage, can be compared to that of wall elements (wall and arch) that respond to seismic stresses according to their shape, their arrangement with respect to natural forms (slopes, sides, promontories) and the direction of seismic stresses (CANGI, 2017). The structural check of the existing urban units and the comparison with those of the project was developed with the method with distinct elements applied to the constituent parts of the aggregate.

The relationship between type (row-house or block-house in shapeless stone masonry and wooden frames), and construction was developed in the project assuming the wooden structures as elements of stability and safety for continuous / discontinuous masonry structures, considering the structural behavior of the aggregate forms, analyzed as complex units, able to summarize urban space and architectural form of identity. In this way, the project responds both to the more strictly "technical" reasons (structural safety aspects, living and functional comfort parameters) and to the "formal" ones (relationship between orographic substrate and urban types; elements of relationship between topography and building, formal value of substructures, spatial relationships between urban voids and the built). The project has taken three focus scales of architectural and structural themes, coinciding with the size of the single building unit, with the aggregation units and with the urban parts defined by them. The structural behavior of the individual housing unit varies in the case of aggregate forms and must be analyzed as a new complex unit, capable of summarizing the identity values of urban space and architectural form in continuity with the principles that determined the identity of Trisungo.

The elementary urban units have been defined according to their ability to express the identity values of the architecture and of the city of Trisungo, through a constructive unity of irreducible form and space, as a tool to reconstruct also the intangible aspects of reality (beauty, culture, social cohesion, participation).

Conclusions

Destructive events are progressively erasing the identity of the Italian Apennines, the most authentic and representative part of the nation.

The desire to rebuild the affected cities "where they were" can ensure a return to the "normality" desired by the affected populations, re-establishing the continuity of a housing and construction tradition, starting from the reconstruction by morphological units able to mend the multi-scale relations between territory, properly urban spaces and architecture.

Then transform to preserve traces and memory starting from a deep knowledge of what it was to define intervention models able to assume the pre-existing complexity and to reconstruct its identity.

The most appropriate solution to adopt is to recognize urban units as urban morphemes representative of foundational relations between urban nuclei and territory and as design tools to reinterpret the characters and spatiality of the vanished places, according to a truly multidisciplinary and multi-scale approach to reconstruct the continuity of the settlement systems that characterize the identity of the Italian hill town.

Figure 1. Alta Valle del Tronto, sistema insediativo e centuriazioni della zona di Pescara del Tronto

Fonte: Angiulli F., Colonna M., De Lauro A., Pisanello A., Pavone R., Pellegrino F.

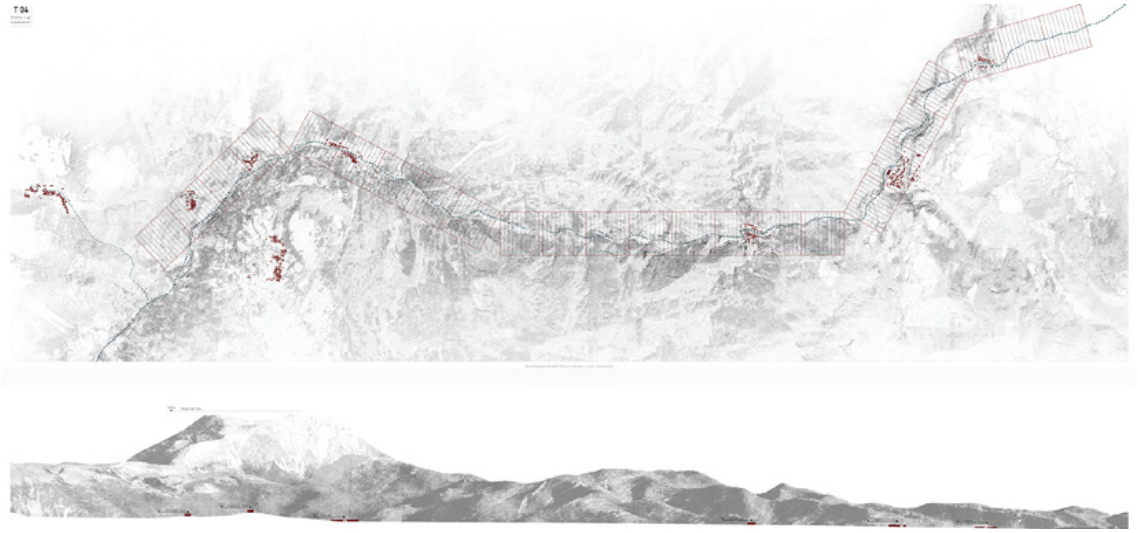

Figure 2. Trisungo (AP), pianta tipologica dell'intervento progettuale con l'indicazione delle tre unità urbane individuate

Fonte: Angiulli F., Colonna M., De Lauro A., Pisanello A., Pavone R., Pellegrino F.

Figure 3. Trisungo (AP), sviluppo morfo-tipologico e costruttivo della unità edilizia con "Buffiria" a struttura mista in pietra e telaio ligneo

Fonte: Angiulli F., Colonna M., De Lauro A., Pisanello A., Pavone R., Pellegrino F.

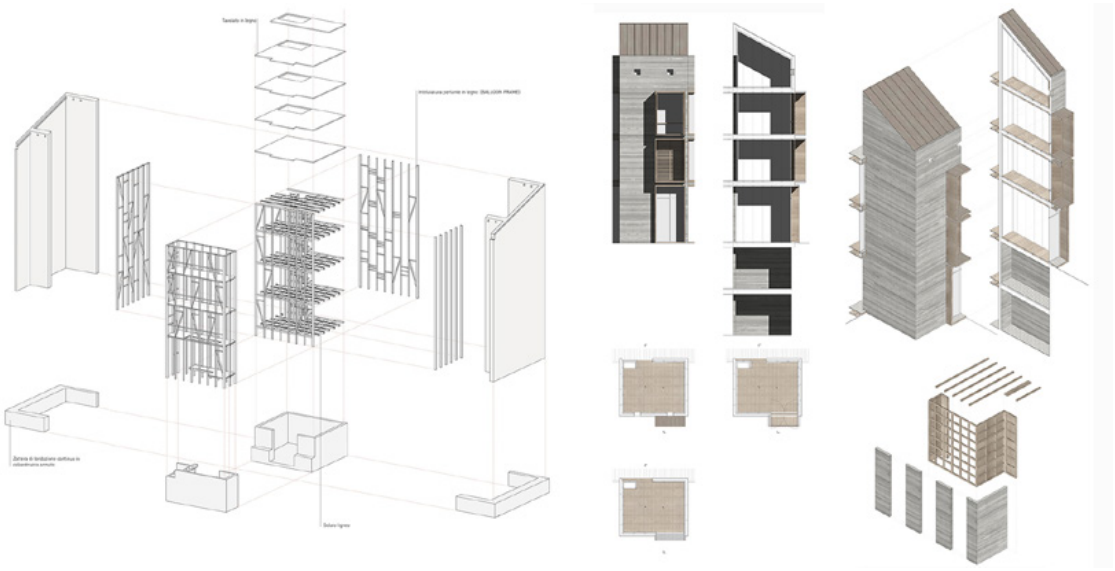

Figure 4. Trisungo (AP), sviluppo morfo-tipologico e costruttivo della unità edilizia a sezione aperta, con struttura mista in pietra e legno

Fonte: Angiulli F., Colonna M., De Lauro A., Pisanello A., Pavone R., Pellegrino F.

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Zone Urbaine Sensible and urban regeneration: preserving place identity by improving social inclusion

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Keywords: *Urban regeneration, place identity, sustainability*

Since 20 years, France is involved by an interesting urban regeneration process which improves the quality of life in terms of economic, social and environmental sustainability (Nijkamp and Perrels, 1994; Porfyriou and Sepe, 2017; Sepe, 2013a, 2014). The Zone Urbaine Sensible – ZUS, namely sensitive urban zones created in France in 1996 with Décret n°96-1156 are some disadvantaged areas supported by the PRU (Projets de Rénovation Urbaine), with the financial help of the ANRU, Agence Nationale pour la Rénovation Urbaine that manages public-private funds and is aimed at integrating people through employment.

In particular, within the Alpes Maritimes territory, 5 ZUS are located, three of these in the city of Nice, one is divided between Nice and Saint-André, and the last is located in Vallauris. In Nice, the urban regeneration of the ZUS is aimed at improving the quality of life and reduce the social differences through actions of new building, redevelopment, demolition and reconstruction. The demolition is carried out when the redevelopment, which must be characterized by principles of sustainability, is economically disadvantageous. In these contexts, urban projects mostly concern the redevelopment of public spaces and renovation of housing which fulfilled the objectives of the PLH (Programme Local de l'Habitat) to increase social development and improve the quality of life. Vieux Nice area (old town) is the historical and touristic heart of the city. The area, densely populated - 17,500 inhabitants in an area of 70 hectares - is considered a ZUS as a result of overcrowding which improves the real estate value, but decreases quality, comparable to social housing.

The project idea of the PSMV (Plan de Sauvegarde et de Mise en Valeur), is also in this case to improve residences replacing them with environmentally sustainable buildings, all preserving place identity. The ZUS renewal is part of a wider process of regeneration which is interesting Nice by 20 years in the framework of the PNRU, Programme National de Rénovation Urbaine. The principal aims include mixed uses to increase employment, housings and social life. The new strategy is to decrease vacant areas performing differentiated activities in different moment of a day. The challenge is both renovating the urban environment and improving social inclusion, by respecting the urban form, and preserving place identity. All in a sustainable perspective (Pendlebury and Porfyriou, 2017; Sepe, 2013b).

The paper will illustrate, the process of urban renewal which is interesting Nice since the beginning of 2000, starting from the emblematic Zone Urbaine Sensible and focusing on the questions deriving from the aforementioned challenge.

Introduction

The history of a place, together with its historic urban fabric and heritage, and the development of suitable policies constitute important elements in determining the future of that part of the city and its renewal.

At the same time, recognizing the value of place identity as a fundamental component of urban history and in implementing urban change serves as a reference point both in terms of society's wishes and in safeguarding and constructing both sustainable and innovative urban image (Landry, 2000; Lynch,1960).

Cities are simultaneously buildings, material structures, and also people, networks and intangible elements, such as memory, history, social relationships, emotional experiences and cultural identities. The city is as an organism: each element is inextricably interwoven and planning is based on how people feel the city from an emotional and psychological point of view (Carpenter, 2006; Carta, 2007; Florida, 2005; Musterd et al., 2013). Accordingly, the creation of an urban environment which encourages the setting up of innovative activities requires, at the local level, the construction of a specialized production system and the establishment of an urban environment which can support the testing of consensual practice of regional government.

The mix of all the aforementioned elements is on the basis of many projects of urban regeneration, which are in development in Europe in the last 30 years (Nijkamp and Perrels, 1994; Porfyriou and Sepe, 2017; Ruijsbroek et al., 2017; Sepe, 2009, 2013a-b, 2014a-b). In particular, France is involved by an interesting urban regeneration process, which is improving the quality of life in terms of economic, social and environmental sustainability.

The SCOT general territorial plan is the departmental document that coordinates the different territories and programs ensuring coherence between the various plans at various levels. The main French urban tool is the PNRU - programme for urban renewal established in 2003-, which is the territorial higher-level planning tool that operates in about 500 districts to standardize the National territory. It is focused on housing, public buildings and urban development to balance social differences especially in the most disadvantaged areas. These kinds of areas include the sensible urban areas called ZUS, which are characterized by low urban quality, few urban spaces, isolation, lack of facilities and a high concentration of families with economic and social difficulties as a result of disproportion between residents and occupation (Bonnet-Galzy, 2014).

Starting from these premises, the paper will illustrate, in the framework of the IRISS CNR research project "Contemporary urban landscape design: place identity, happiness, liveability, health and sustainability" (with the author' s responsibility), the process of urban renewal which is interesting Nice since the beginning of 2000, beginning from the emblematic sensible urban areas ZUS. Nice is a well known place by both local and international tourism. The aim of the Municipality is to extend its attractivity to all the city and become a site of innovation and sustainability, creating new architectures, providing a wide programme of renewal and introducing suitable policies. The main objective includes mixed uses to increase employment, housings and social life. Furthermore, new architectures designed by international "archistars" are realized to create contemporary landmarks for the whole region.

The ZUS were created in France in 1996 with Décret n°96-1156 and are supported by the PRU renewal programme with the financial help of the ANRU Agency for urban renewal, that manages public-private funds and is aimed at integrating people through employment. By 2004, French ZUS are 751, with 4,4 millions oh inhabitants - 7,5% of population – and are subdivided in ZRU, presenting high inoccupation, few degrees and few potential tax, and ZFU, that have the same characteristics of ZRU, but with more citizens (8500) which need more strong actions as tax incentive for companies settled in the territory. In particular, within the Alpes Maritimes territory, 5 ZUS are located, three of these in the city of Nice, one is divided between Nice and Saint-André, and the last is located in Vallauris. In Nice, the urban regeneration of the ZUS is aimed at improving the quality of life and reducing the social differences through actions of new building, redevelopment, demolition and reconstruction. The demolition is carried out when the redevelopment, which must be characterized by

principles of sustainability, is economically disadvantageous. In these contexts, urban projects mostly concern the redevelopment of public spaces and renovation of housing which fulfilled the objectives of the PLH Programme for local housing to increase social development and improve the quality of life. Vieux Nice area (the old town) is the historical and touristic heart of the city. The area, densely populated - 17,500 inhabitants in an area of 70 hectares - is considered a ZUS as a result of overcrowding which improves the real estate value, but decreases quality, comparable to social housing. The project idea of the PSMV Plan of Enhancement and Safeguard of old and degraded neighbourhoods is also in this case to improve residences replacing them with environmentally sustainable buildings.

The general new strategy is to decrease vacant areas performing differentiated activities in different moment of a day. The challenge is both renovating the urban environment and improving social inclusion, by respecting the urban form, and preserving place identity: all in a sustainable perspective (Pendlebury and Porfyriou, 2017; Sepe, 2013b).

Methodology

The case study reported in the paper is part of a broader research project entitled "Contemporary urban landscape design: place identity, happiness, livability, health and sustainability", coordinated by the author, in development by the IRISS of the National Research Council.

The objective of the study is threefold: the research of new methodologies aimed at identifying and designing the identity resources in emblematic areas of urban transformation; the identification of best practices of urban regeneration, and the creation of guide lines for sustainable urban regenerations. In particular, the study presented in this paper is related to the identification of the best practices of urban regeneration in Europe.

Each of the cases has been treated as a separate case (Van Winden et al., 2012). After reviewing the scientific literature, this has been associated with quantitative and qualitative secondary data collected from: database concerning population, labor, economy, creative industries, tourism; the official websites of the respective regeneration programs, from local magazine articles and press releases.

The primary qualitative data were collected through interviews with users of the site in order to understand their satisfaction concerning the regeneration and/or the area in general.

The cases were chosen with the purpose of obtaining a broad framework of new generation projects and identifying generalizable issues common to all cases (Van Winden et al., 2012). It was decided that the case studies concerning the whole research should focus on medium-sized cities in Europe where the regeneration process is focused on redefining the identity not only of that particular place but of the city as a whole.

Environmental policies characterise many of the current regeneration projects in Europe and are practically a trait d'union. In some cases, attention to the environment and landscape becomes the prime feature, as the Nice one and, more in general the French case studies, where policies have long focused on the landscape also in social and economic terms. In this perspective the cases of Nice is emblematic for its combination of history, urban and landscape projects to ensure a greater sustainability for the area in question and the city and the preservation of its place identity.

In all the case studies materials have been gathered in order to verify: attention to history, urban projects, socio-economic regeneration and participation. The urban project is an important element in the process because it represents the objective physical transformation involved. The methodology used identifies the various phases, features, scheduled implementation times, objectives and measures adopted. The surface area of the operation and the designated uses in percentage terms - residential, public spaces, buildings for culture, vegetation - constitute an important factor in assessing the urban sustainability. It is useful to collect plans on the territorial scale, which lie behind the projects, guidelines and strategic orientations. The investigation also seeks to identify the issues encountered and the state of advancement. Furthermore analysing three aspects of the area surrounding the city extend the information on the urban projects: geography; historical evolution; projected

image and new identity (Sepe, 2009).

The case study

Nice Côte d'Azur metropolis, trough many new urban projects devoted to improve liveability and sustainability, is investing strong energies in order to become the Green city of the Mediterranean. The idea is to transform not only the city centre but also suburbs. The purposes of both innovation and urban renovation is to "Diversify and improve the supply of housing, open the neighbourhood and redevelop public spaces, reinvest the existing urban fabric to fight against urban sprawl, promote social and economic integration of the inhabitants of neighbourhoods". As emblematic of these challenges, in the following the illustration of the regeneration project will be focused on the ZUS (Zone Urbaine Sensible) and Éco-exemplarité projects and the results of the questionnaire administered to users of places.

Social participation, place identity and quality of life

The Sensible Urban Areas - ZUS - are present and supported by the PRU project of urban renewal, with the financial help of the ANRU National Agency for Urban Renewal. In the Alpes Maritimes territory there are 5 ZUS, three of these are located in the city of Nice, one is divided between Nice and Saint-André, and the last is located in Vallauris. In Nice, the neighbourhoods of interest for the case study are Ariane (borders are situated in various municipalities) and Pasteur, that are in the east zone.

The neighbourhood of Pasteur is a ZUS area situated in North-East of the city, near West side of Paillon river. It was the first included in PNRU National Programme of urban renewal by ANRU in 2005. It has 5400 inhabitants and urban regeneration tends to improve the quality of life and reduce the social differences through actions of building (79 housings), redevelopment (50 units), demolition (250 apartments) and reconstruction (151 homes). The demolition is necessary when the redevelopment, which must have sustainable features, is economically disadvantageous. Another aspect identified to exalt the quality of life of citizens is the redevelopment of the Paillon riverfront with bike paths and pedestrian areas, and the Maccario square that includes relaxing and play areas.

In the North-East zone of Nice, in the Plaine du Paillon, the Ariane neighbourhood is located. It has 12.000 inhabitants of which 34% are young people to encourage to not go away from the area. Since 2007, in agreement with the ANRU, the Ariane PRU was divided in two phases. The first- from 2007 to 2012- aims to increase the value of the neighbourhood (which is a ZFU with 862 companies located in 2003), incorporated in a broader urban regeneration of East zone. Redevelopment mainly included îlot Saint Pierre and its annexed streets. The second phase of PRU began in 2012, when the sides of the Paillon River were adapted to the project, the residents were rehoused and works of the first phase were finished (MNCA, CGAM, 2011). Here urban projects mainly regarded the redevelopment of public spaces and renovation of housing which fulfilled the objectives of the PLH plan for local residences, to both increase social development and improve the quality of life. In 2003, some lands were expropriated to build Social Housing to sale or rent to people with small incomes. Among public services, library, post office, Palace of Justice, shops, public spaces, sports centre and stationing of transport were designed (ANRU, 2007; VdN, NCA, 2008; www.nice.fr; www.nicecotedazur.org;).

Another important area is Vieux Nice (old town), the historical and touristic heart of the city. It is delimitated by the sea at South, and the covered Paillon at West. Here an independent plan by PLU's Nice is active, the PSMV plane of safeguard, approved in 1993 and modified in 1997. It is a neighbourhood with a lot of shops, restaurants and cafes, administrative buildings. The area, densely populated - 17,500 inhabitants in an area of 70 hectares- has considered a ZUS as result of overcrowding which raises the real estate value, but decreases quality, comparable to social housing. The concept is to improve renewable residences and demolish ramshackle, replacing them with environmentally sustainable buildings, to increase the commercial economy, improve places and public services, all preserving place identity. The terms of project are expected in 5-7 years from 2012.

History, sustainability and innovation

Green technology is only one of the techniques to have environmentally sustainable projects. Indeed, it is also necessary to pay attention both to existing landscape – which is part of the place identity - and waste management, energy and water consumptions.

This process, called Éco-exemplarité, established 13 Ecocities in France. The main purposes of Écocitès are an energetic certification to build, management, and installation of shippers for electric cars to encourage and improve the use of them and increase the number of public spaces for: a better sociability; creating an urban laboratory to find solutions against heat of the Mediterranean zones. One of which is in NCA Metropolis, formed by 3000 hectares, located in the southern territory of Plaine du Var, between Baronne-Lingostière (North) and the airport and Saint-Laurent du Var (South). In the Écocitè area, led by the EPA, there are 12 projects, including Grand Arénas, Nice Méridia and La Baronne-Lingostière. Four purposes of 12 Écocitè projects in Nice Côte Azur regard a responsible urbanisation - with, among others, intelligent urban management –, a suitable transport system -with an increasing of tramway and development of electric cars system-, a future energetic autonomy -using thermodynamic and geothermal sea centrals- and the objective to will be the intelligent city of the future (Mateo et al, 2012).

La Baronne-Lingostière hub is situated in La Gaude and Saint Laurent du Var, near Var River, municipalities, and the future Cote d'Azur market of national interest (MIN - Marché d'Intéret National). The project expects an extension of 60.000mq in 25 hectares, with possibility to extend in order to begin the most important agrifood and horticulture hub. The idea is to increase quality's local agriculture and improve logistics. La Baronne design has continuity with natural and urban Lingostière neighbourhood's landscape which is located on the other side of river. Part of the project reuses existing buildings to integrate them into new projects. The works are scheduled for 7 years (2012, the year of consultation, 2018, the delivery of food platform) (MNCA, EPA, 2013).

Saint Isidore is a neighbourhood in Éco-Vallée, near Allianz Riviera Stadium, extended on 8 hectares, primarily designed for environmental purposes. Every project considers housing, services and shops with sustainable technologies such as natural light, recyclable and low-impact materials, geothermal energy, roof garden, etc. Also private partners must respect protocols of the plan. An example is IKEA, which will open the mall abandoning the classic format to use glass, wood and underground parking to impact as little as possible on the environment and landscape. This urban regeneration makes the place so recognizable that the investment will be guaranteed by commercial tourism, also from Italy (www.nice.fr).

In addition to these neighbourhoods, there are a lot of projects regarding architectural regeneration. The Grand Arénas neighbourhood is divided in blocks, designed by Dominique Perrault, and composed by 18.000 m2, which 8.000 mq offices and shops and 10.000 mq by hotel. It received BREEAM Excellence energy certification for the environmentally sustainable techniques of design and management which reduced consumptions about 30-45%, using solar panels, control systems of lighting and temperature and heat pumps that use groundwater. The works are scheduled in years 2014-2018 (VdN, NCA, 2008).

In the same neighbourhood, the Allianz Riviera Stadium was designed by Wilmotte et Associés architects et Vinci Concessions. The aim of this project was to show that it is possible organize low-environmental impact events and distractions. The metal and wood structure decreases of 3.000 tons carbon dioxide emissions; geothermal energy, natural air conditioning and water recovery are present and he excess of energy can be reused in the Saint Isidore neighbourhood.

Among the projects which are important for the redevelopment, there are three in the city centre of Nice: Massena Square, Promenade du Paillon, and the South railway station. The program for the renewal of old areas - PNRQAD national programme of old neigh borough - that organized this urban renovation operative since 2012, expects an improvement of housing during 5 years, more public spaces, revision of traffic, and pedestrianization of some areas.

Urban renovation of the Promenade du Paillon redeveloped the area connecting old and new town of Nice, reaching to the des Anglais waterfront. The contractor of project

is Nice Côte d'Azur metropolis, that have among the partner Péna & Peña as landscape architects, as a result of relevance on entire metropolitan territory. In the past there was an usual street covering Paillon river that was substituted by the green space, opened in 2013 (www.nice.fr; www.touringclub.it).

This is now an urban park that is extended for 12 hectares through various neighbourhoods, using different woods to get blooms all year, thanks to the Mediterranean climate that permit the planting of different species, 50, with about 60,000 of plants, trees and shrubs. It is a place designed as buttonhole of urban regeneration of Nice because it solves three sustainable principles: social (strongly used by all citizens), economic (with a strong improvement of tourism) and environmental (broad presence of vegetation). The park has a strong impact on the territory as a result of different spaces and activities to carry out art and music exhibitions in addiction to 3000 mq of water mirrors with water jets, sounds, lights and sprinklers to create a high visual and emotional impact, and wooden toys for children that are present. These are the main purposes that make it a place of wellbeing and with one of highest quality of public spaces.

The South station renovation in the Liberation neighbourhood, at city centre of Nice, expects the *Ecolabel* environmentally sustainable certification. ING Real Estate Development (Reichen e Robert & associate architects) images an high quality of public spaces achieved by the ancient station redevelopment (1892) and new architectures. The project aims to preserve and enhance the historical sense of the area with some devices such as a library included in the old building (opened in 2013). Redefinition gives versatility to spaces permitting to use them for a lot of activities in every hour of the day to renovate all neighbourhood. Bioclimatic design is provided by use of solar panels, roof gardens, and a minimal impact of yards. This include: 10,500 mq of public spaces, 167 student residences equipped with public spaces, and 98 housings, of which 44 socials and some experimental devices designed for disabled needs (www.nicecotedazur.org).

The perception of people

Perception of people was collected with interviews administered to users of the sites in order to understand their satisfaction concerning the process of regeneration in development. Two emblematic areas were chosen to collect the data: The old town (Vieux Nice) and the Promenade du Paillon urban park. Questions concerned: 1) What elements strike you most (persons, things, etc…)? 2) Is there one or more elements which produce a particular sensation? 3) Is for you preserved the place identity? 4) Is there something which bother you? 5) If you could change, improve, or enhance anything, what would you do? 6) Is this area comparable to another area of Nice or elsewhere? If so, why? 7) What is the symbol of this city? What is the symbol of the area?

Most of the respondents were tourists from America and Europe (Italy, Britain, Spain, Sweden, Holland) and locals; English was the language used above all for foreigners, and Italian for the Italians. About 80 people were interviewed in both areas, with an age range from 20 to 60 and all the people approached took a genuine interest.

To the first question, in the old town the majority of people answered the old buildings, the Cours Saleya market, the cafè, traditional food. In the Paillon garden, answers mainly regard, both for locals and tourists, the landscape with trees, plants, etc., the water jets, the space for different activities or for the break. To the second question, in the old town the majority of people answered the nice atmosphere and the livability of the place in general. In the Paillon garden, people answered the smell of nature, the water mirrors, the sensation of serenity. Answers for the third question, although the Promenade du Paillon is a new Park while the old town is historical, was mainly positive for both places.

The fourth question asked whether there was anything that constituted a nuisance, and more than half of the respondents answered in the negative in both places. Few people in the old town answered the crowds and the difficulty to find a place to sit in some hours, In the Promenade du Paillon, very few people answered the difficulty to walk close to the new fountains, without getting wet.

The fifth question asked what people would change if they had the chance. In the

Promenade du Paillon, the majority of the respondents answered nothing, while in the old town half of people indicated the presence of more benches and street furniture in general. To the sixth questions, for the Promenade du Paillon, people answered other new urban gardens in France, while for the old town, people answered many historical centres of the South France.

For the last question, respondents of both areas answered many different places, including Place Massena, the Promenade des Anglais, the Cours Saleya market.

Observation and conclusion

The renovation process, which has been presented in the paper, concerns the Nice Côte d'Azur metropolis, placed in the Provence-Alpes-Côte d'Azur (PACA) French region. Although the process is still in course, the projects which are planned and those which have been completed give the possibility to identify it as a best practice with respect to liveability, social inclusion, sustainability and place identity topics.

The general idea is to transform not only the city centre but also suburbs. Particular interest is posed on disadvantaged areas, defined ZUS (Zone Urbaine Sensible), where the aim is to improve the quality of life and reduce the social differences through actions of building, redevelopment, demolition and reconstruction. Another aspect identified to exalt the quality of life of citizens, is the redevelopment of the Paillon riverfront with bike paths and pedestrian areas, and the Maccario square that includes relaxing and play areas.

An interesting aspect of the operation of regeneration is the technology used for waste management, energy and water consumptions, called Éco-exemplarité, with the purposes: to obtain an energetic certification to build, management and installation of shippers for electric cars to encourage and improve the use of them; to increase the number of public spaces for a better socialization and to use them as an urban laboratory to find solutions against the heat of the Mediterranean zones.

Among projects not regarding entire districts, but important for the regeneration process, *Gare du Sud* is one of the most interesting. The South station renovation in the *Liberation* neighbourhood, in Nice city centre, expects the Ecolabel environmentally sustainable certification. The project aims to preserve and enhance the historical sense and place identity of the area with some devices such as a library included in the old building (opened in 2013).

Nice, and the Cote d'azur in general, is well known by both local and international tourism. Its beaches, the Promenade, open-air markets, gardens, historical centre are only some of the main attractions of the city. Since twenty years the municipality is beginning a new challenge, to innovate in sustainable way the image of the city, preserving the place identity as well. Locals and visitors, as the questionnaire has confirmed, are well prepared to the new trend to put people as protagonists of urban contest; the improvements obtained by changes highlight the positive trends by both urban and social point of view (also the economy takes advantages, as consequence). The switch to more sustainable new lifestyles (sustainable in threefold sense: economical, social, environmental), including housing and public life, is the result, and at the same time is the engine, of urban regeneration based on the satisfaction of human needs, with particular attention to the psychological and sociological ones.

The balanced mix of historical memory, technological innovation and new architectures are attracting visitors also in areas less known of Nice. Important factors of success are provided by creating the identity of the neighbourhoods starting from the place and its history, constructing the most suitable urban policies and strategies. Some of the new parks, such as the Promenade du Paillon, are now consolidated places of socializations for both locals and visitors, where history, place identity, innovation and sustainability are all present.

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Urban Recovering and Restoration Strategies after the Earthquake of 1915 in Marsica

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The proposed paper aims to analyze the complex relationship between urban recovery and restoration works strategies of residence and historic monumental buildings after the earthquake of January 13th 1915, which destroyed Marsica, in the province of L'Aquila, central Italy, and created a lot of damages in the neighborhood. This event created a new kind of approach to buildings, focusing not only on the form, but also to the structure aspects.

All the population had several damages to their own houses, in some cases totally destructed, so it was necessary to rebuilt new aggregates, according identified urban strategies; differently, the churches and other monumental buildings, cause their irregular form and structure, continually modified over time, had more damages of other type of architecture, so they needed different strategies for their recovery.

We will focus on the using of new technologies, in particular reinforced concrete: the using of this material in this period created the experience conditions for the new rules and guidelines in civil works and for the Brandi's critic and conservative restoration theory; we will focus on recovery/restoration case studies, which were realized in the period before the sixties; we will focus on recovery/restoration case studies, which were realized in the period before the sixties, making comparisons between each strategy.

Introduction

The aim of this paper is focus on the complex relationship between urban recovery and restoration strategies in post-trauma re-construction. In natural disasters, for example an earthquake, every single building shows the critic aspects of its own structure, with damages and collapsing of walls and general structural elements, with clear mechanical behavior caused by the logic at the base of its design, the energy and the frequencies associated to the event, the type of the structure, and last but not the less important, the materials.

The case study is Marsica, which suffered a lot of problems with the earthquake of January 13th 1915, that destroyed large part of residential buildings and caused several damages to monumental and historical constructions. There were more than 80.000 victims and extended damages to all the buildings, in the area comprised between Avezzano and the closer neighborhood, but there were also a lot of damages in the area of L'Aquila, far about 40 kilometers from the case study place, and other areas in Lazio region.

In particular, we will focus on a single case study, the city of Alba Fucens, province of L'Aquila, comparing the different strategies and necessities. In this case the phase of reconstruction was influenced by also other events, for example the coming of the two world wars, which also threw lot of people out of their land. The phases of reconstruction were two, one in the first years after the earthquake of 1915, and the other one in the years during the second post-war.

Alba Fucens, a brief introduction to the development from roman and medieval to contemporary city

1020 The city of Alba Fucens can be analyzed in three different periods: the roman phase, from the establishment of the city, the medieval phase, from the 13th century to 1915, and the contemporary phase, after the earthquake. The position of the city changed after every phase, so we can easily identify the structure and organizations for "each" city (picture 1).

Alba Fucens is a Latin law colony founded by Romans in 307 B.C. Its history is strongly connected to the enclosing land: the presence of the *Velino* Mount in the northern part, the closing to the Lake of Fucino and the "strong" connections with Rome by the *Tiburtina* Way put this city in a strategic position; furthermore, the plant of the city is characterized by the natural presences: the central part of the city, the *Piano della Civita* (Level of Society), is enclosed by three hills, which constitute the limits of the Roman settlement and also strategic points of defense. The residential area is protected by a system of polygonal walls, part of which is still present for three kilometers.

After the fall of the Occidental Roman Empire, the city preserves its important role in the neighborhood: the church of San Pietro *in Albe* represents one of these scraps in the historic continuity of the city during times and also synthesis of the historic and settlement events. Even if we can find the first mention of this church in the seal of Pope Pasquale the Second of 1115 (Sancti Petri in Alba), the archaeological sources date the church to the 6th century A.D. as the development of an ancient Italic-Roman temple dedicated to Apollo, on the acropolis of Alba Fucens.

During the medieval age, there aren't a lot of historic information from documented sources, but we are able to identify the medieval layout from the photos of the city before the earthquake of 1915 and also from the ruins of nowadays (picture 2). The city, developed outside the ruins of the Roman city, could be the result of the reconstruction of an older city after the destruction by Carlo I D'Angiò; the plant takes the *linear scheme* of cities of 13th and 14th century, whose start and end points are the castle and church of San Nicola. In this organization, we can easily report that the structure of the city doesn't follow the orientation of the main street, but, in a reverse way of thinking, it follows the development of residential buildings, built in sequence, with a secondary importance and irregularity of the main street. In this way, the development of the city follows the rugged nature of the ground and not the urban rules of buildings. This city, cause of the uncomfortable position, starting to be abandoned at the beginning of 18th century.

With the strong earthquake of January 13th 1915, the medieval city was completely

destructed and the population had several victims and homeless. After the phase of emergency, with provisional buildings, the reconstruction started in the twenty years of 20th century.

Post-trauma re-constructions between conservation and innovation: residential buildings

In the first phase of emergency after the earthquake, the interested population was collocated inside provisional houses, made in wood and called *baracche*. As emergency systems, their purpose was focus on giving refuge to the homeless only for the first period after the quake event, but lots of these houses were used until the Forty years.

In general, in the city damaged by the earthquakes, after individuating the suitable place for the reconstruction, the location of these kind of aggregates is ascribable to four typologies, according the morphology of the place. In residential areas on plan ground, the new buildings are usually collocated at the limit of the urban areas, along a connection road; in mountain areas, the *baracche* are built on an area in a lower level, along or next to main connection road or railway; in hill and crests settlements, "new towns" are located next to the historic center.

Even if in reconstruction laws it was usually to find guidelines for rebuilding in different areas, not on hills and far from damaged sites, in the case of Alba Fucens, with a lieutenant order in 1915 August 22nd, the original site of the city was considered suitable for the rebuilding of the city, thanks to the rocky subsoil. In the emergency phase, the *baracche* were collocated on the other hill of the land, near the church of San Pietro, instead of existing city's hill. The local population was conscious that the solution of *baracche* was provisional and, when the reconstruction phase started, they explicitly asked for new areas, far from the old city. In this way, the *baracche* were substituted by the new houses, in the same place, designed by the *Genio Civile* (building corporation) of Avezzano.

In a flat level, usually, we had two different aggregation models: the first *baracche* are organized according an encampment scheme, with long "lines" of buildings, called *galopponi*, shorter units, *traverse*, and toilet system in the center; differently, more complex schemes provide the realization of a *road chessboard* and double unit *baracche* organized in line. The structure of these one floor houses, called *aseismic houses*, is in masonry and reinforced concrete: they are designed with a system of columns and beams in reinforced concrete, on a foundation slab, while the walls are in bricks, solid and hollow, and stones.

The *aseismic* settlement in Alba Fucens is organized according the flat level organization, but in a different way. We have close nucleus of *baracche*, composed of different residential elements and organized according a regular road system: thanks this solution, the aim is the restoration of a "neighborhood" unit, able to recover the social spirit of the city and of the community (picture 3). This purpose is evident in the attempt of recovering of the church of San Nicola, put in the center of the new town, and which was the main building in the medieval Alba Fucens. The church is new, but on the façade there are elements taken from the original church, which is in ruin conditions without possibilities of restoration, as the rose window and the main gate of access. Apart from the façade, the entire church is built with a new structure, mixed in masonry and reinforced concrete.

Post-trauma re-constructions between conservation and innovation: historic buildings

Lots of historic building had large damages with the earthquake of 1915, with in some cases also total collapsing. The irregular form of this typology of architecture amplifies the effects of the earthquakes on the structures, with different behaviors for each structural element; also, the material used in this buildings has not sufficient properties for increasing the resistance to the horizontal and shear stresses, as the earthquake ones. The masonry structure, and especially the ones made with poor mortar, are not able to resist to shear stresses, cause the fragile break type of the bricks, the round form of the stones and the different modulus of elasticity of mortar, bricks and stones. With the earthquake, this kind of structures had usually lots of damages, collapsing of some parts (in particular volts and arches).

The church of San Pietro in Albe, Alba Fucens, province of L'Aquila, the case study of this paper,

in 1915 quake suffered several damages, with a lot of walls interested by collapsing and various kinds of cracks. Also the volts and arches of the presbytery of the 15th century collapsed, causing damages on the main nave and the apse. The intervention of restoration appeared complex: the recovering of the entire church, with large part of the existing structure collapsed, was designed in more phases.

First of all, all the collapsed pieces were catalogued and the elements in insecure stability were individuated and then disassembled; this operation was the main premise for the restoration work, which started in 1955. In the restoration project, directed by Raffaele Delogu, one of the most important architect in that period and head of the *Soprintendenza ai Monumenti e Gallerie d'Abruzzo*, the authority for preservation of cultural heritage of Abruzzo and Molise, the main goal was the improvement of the structure of the church. With the disassembling of the elements (columns of the main nave), the architect was able to insert a new structure, hidden from the interior thanks to the covering layer in stones, in substitutions of masonry structure with poor mortar, unable for eventual other quakes. So, the columns were created in reinforced concrete, and linked to upper beams, creating more frames inside the masonry structure, invisible inside the church. The created frames were of two levels, one at the top of the arches, the other one for supporting the roofing system, in wood materials. Also the foundation system in masonry was improved with reinforced concrete foundation beams (picture 4).

The innovation technologies: the use of reinforced concrete

In both the analyzed cases, it is important to underline the importance of new materials and technologies in recovery strategies: the use of reinforced concrete structures represents not only the using of a modern technology, but also the first experimentations for improving the resistance of buildings to quake stresses; in this period, all the technicians, not only engineers but also architects and heads of preservation authorities, were conscious about the risks of this kind of structures, made in masonry, poor mortar without any tieing characteristics. In this paper, it results also the different approaches to the recovery strategies; the residential buildings, simpler than churches, of one floor, had only top beams in reinforced concrete with two couple of columns along the perimeter of the house; in historic buildings, not only churches but also higher noble residential buildings, the reinforced concrete structures are inserted not only on the top, as the supporting systems for roofs, but also for each slab.

The residential aggregates were designed and realized as copies of a single prototype, in which the designers analyze first the functional disposition, then the architectural form and finally the structure, as a consequence of the previous choices. In the restoration, the aspects of architectural recovering, structural solving and functional working had the same importance in the project phase. All these aspects underline the differences also of attentions and economic funds to the problem of reconstruction.

Conclusion

In this paper it is important to underline the main target of these recovery strategies: the attention to social aspects. In Alba Fucens, during the phase of reconstruction, the population asks explicitly to create new aggregates, outside the medieval city, even if the original site was able for the reconstruction of buildings. Only after this choice the project of repopulation started: the main theme in the design phase was the recreation of the social connection systems and urban centralizers: the churches of San Pietro and San Nicola, which had different strategies of recovering, suggested by the historic importance of the buildings (in the first case) and also by the social aspect (the second case).

Focusing on the restoration of San Pietro, it took more time than the other church: the main reason was the attempt for preserving the church according the critic and conservative restoration theory by Brandi (which himself described this restoration as a "dismaying puzzle solved" and "the best restoration work ever in Italy"), and so, according the necessary economic funds, greater than the church of San Nicola. In this last case, cause the importance to recreate quickly an urban aggregator, the elements original church (we remind, the church was in the medieval city in ruin conditions) were taken and put on a new building, without considering the preservation aspect

of the "original" building.

Figure 1. Satellite Photo of Alba Fucens (Blue: the roman ruins; Orange: the medieval city; Green: the city after 1915; yellow: the church of San Pietro in Albe).

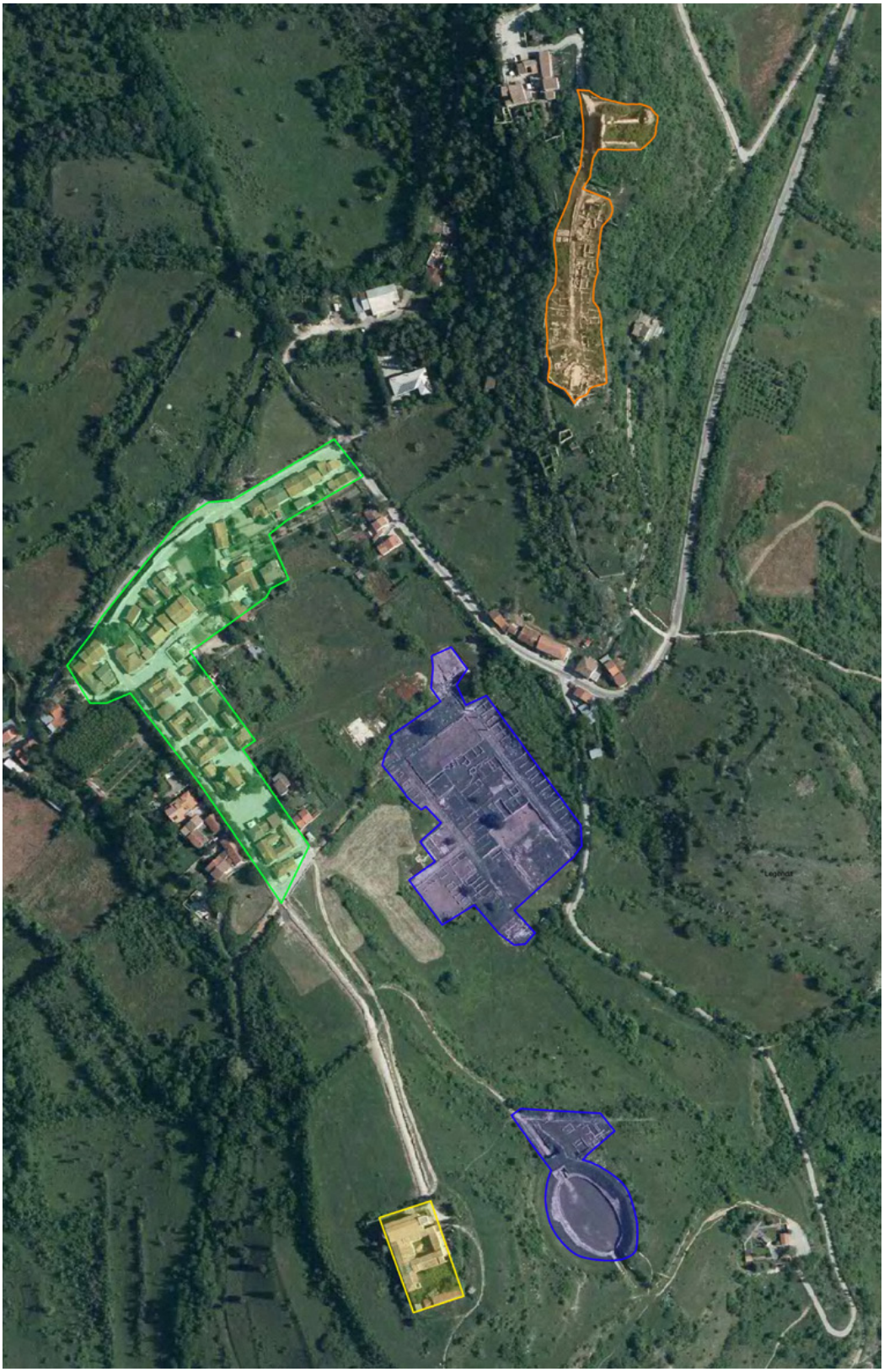

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Figure 2. On the left: the church of San Nicola in the first years of 20th century (PITONI-SALVI 2002); on the right: the medieval city in a picture of 20th century (PITONI-SALVI 2002).

Figure 3. Plan of aseismic urban aggregate of the new city (courtesy of Cooperativa Alba Fucens) and Baracche in Massa D'Albe (GALADINI, 2014).

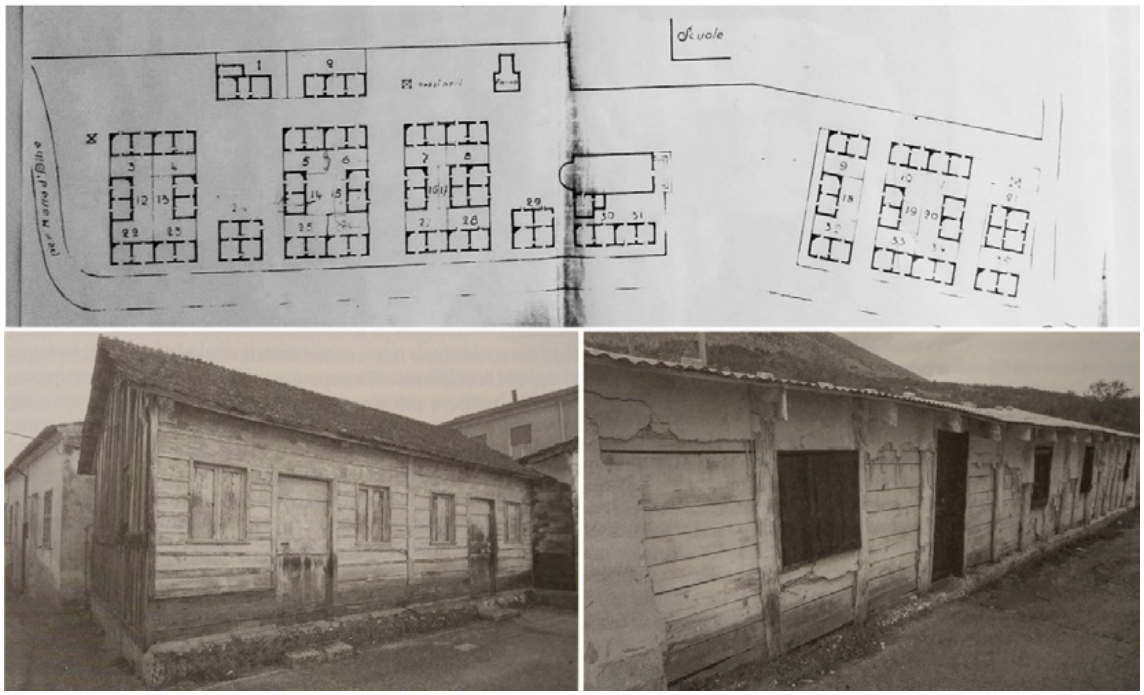
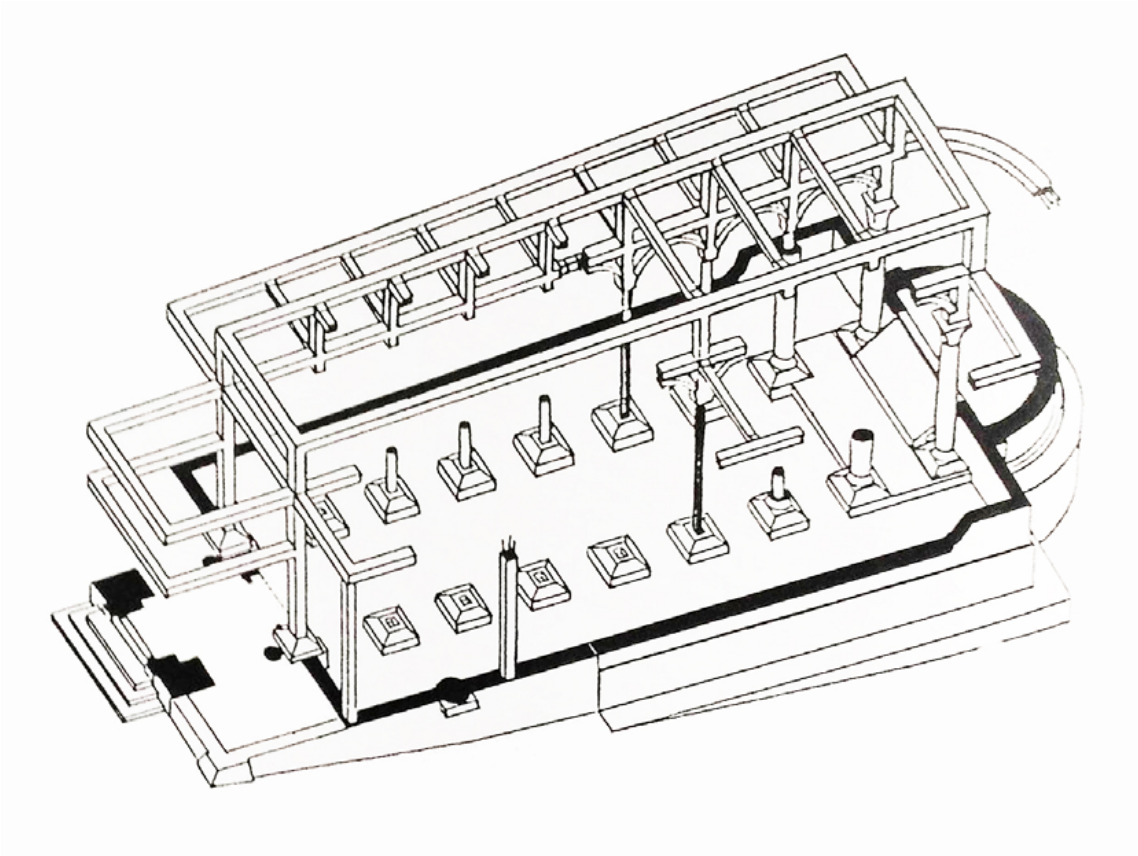


Figure 4. Scheme of the new structure in reinforced concrete for the church of San Pietro in Albe (Soprintendenza per i beni ambientali architettonici artistici e storici, 1991).



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The opportunities for smaller villages in the rapidity of globalization: some reasoning on the villages of the "Alta Murgia"

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Keywords: *Vernacular Architecture, Landscape Restoration, Land Enhancement, Minority Heritage, Enhancement of "Weak Areas"*

The Polytechnic of Bari, for several years is developing an analysis process for the smaller cities of Alta Murgia through a network of Conventions and Framework Agreements, resulting in numerous degree theses. In particular, in this case is presented the results of some proposals carried out on the cities of Acquaviva delle Fonti, Gravina in Puglia, Altamura and Spinazzola.

The disciplinary reference framework is on the urban restoration of the minor centers, however it has quickly become clear that the disciplinary instruments on material recovery, although well established and materially effective to the objective of protection and safeguarding, are not effective for the valorization and functional recovery of sites.

This is an heritage largely private and not directly protected by law, but certainly is an expression of a strong and specific identity value of this territory, diversified in its local specifications, but uniform in a vernacular declension of basic construction according to the building techniques, materials and specific local buildings types.

This heritage shows clearly the need to be preserved and handed down, also for the protection of territories and landscapes, but at the same time strongly expresses a serious inability to self-sustain and renew itself.

The analysis system on which we are working tends therefore to constitute a network of analysis of local values to determine development processes related to the cultural supply chain that invests both the socio-economic values and the material assets of the building in order to generate complex processes self-incremental that allow the development of network synergies of local quality values (even if sometimes too weak, if taken individually) belonging to the different areas of valorization to develop a programs of attraction of population, resources and new vitality compatible with the systems of life and with the working and productive world and with the values of the contemporary age.

The challenge of the proposed paradigm is to be able to develop a new updated process of use of the sites that embody our memory and our identity, allowing us to pass on its values, updating its ways of use and the productive and relational capacity towards today's needs.

Summary

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Introduction

The research work analyzes the relationships between the anthropic cultural values of the territory of a specific area of the Puglia region, recognized as a landscape area defined both by the Territorial Landscape Plan and by the establishment of a National Park: The Murgia. It is a karstic plateau, strongly characterized by a harsh and unhospitable landscape that has affected the sensitivity of several Italian artists, starting with Tommaso Fiore, who described it as follows in a letter addressed to Piero Gobetti "[…] And everywhere strong or little walls, not ten, not twenty, but more, many more, lined up on the sides of each relief, horizontally, at a distance of even a few meters, to contain the ground, to collect and hold a little between so much limestone. You will ask me how so many people did digging and aligning so much stone. I think it would have frightened a people of giants. This is the most rugged and stony murgia; [...] it took no less than the industriousness of an ant population ", to Pier Paolo Pasolini who narrates it through images in the" sincere force [of the landscapes] extended and without appeal "of the "Vangelo secondo Matteo".

The research program

The aim is to highlight the local identity values of the minor settlement system and the local vernacular culture, in the relationship between historical minor building and sustainable use of the territory, recognizing in historical use consolidated in a long temporal tradition (today luckily only partially interrupted, in this region) and in the correct proportion of the rural and vernacular building, a relationship of continuity between

the anthropic activity of soil transformation and the development of the social identity culture of the site.

The cities of the Murgian Area

The centers of the Alta Murgia constitute a local identity unit linked to the territory crossed by the Via Appia, from the pilgrimage routes to the saving holy land now included in the itineraries of the "Francigena streets" and the paths of the sheep tracks, constituting a stratified overlap of meetings of very heterogeneous cultures. The Altamura tradition (the most populous of the centers of the Alta Murgia and the one that supplies the national park the majority of the territory), wants a refounding of the city linked to the figure of Frederick II, although it is known for certain that a village with a fortification of control of the transit on the valley to the south of the city that allowed the best connection between the Ionian gulf and the Adriatic, where the Via Appia was built in Roman times, there must have been since the peuceta era. The Federician foundation corresponds to a historical phase in which the configuration of the Murgian ridge dotted with lookout points to defend against the invasion is replaced by a reception formula: Altamura offers Frederick II in the Middle Ages to build houses on an urbanized city, rich in artesian wells and public cisterns, surrounded by walls, with the only cathedral founded by Federico II and arable land; however the surrounding area, strongly karstic to be fruitfully cultivable, needs heavy work to remove calcareous schists, confinement of the bottom with dry walls to protect it from the roads of transhumance and from wild animals of the Murgia, a work that only a united community , beyond the babel of languages and cultures of which it is composed, can hope to complete.

In a different context, perhaps less hostile, at the southern edge of the northern Murgia, in the so-called "Vallo Murgiano" where the ancient tracks (and still the motorway) passed between the Ionian and the Adriatic coasts, Acquaviva delle Fonti rises. Another settlement controlling the movement of traffic in a strategic region.

Acquaviva delle Fonti, although lacking historical documentation on its foundation, presents a morphology of the historical center strongly marked by the presence in the Norman period of a bipolar settlement only gradually reconnected in a single village. The two apparently oldest areas of the historic center could be identified because they appear to be well defined still in the physical conformation of the historic center, with roads that isolate two distinct "ovoids" on the sides of the primitive Norman period fortification. In these two areas of the historic center the building is characterized by artistic elements that testify to an early growth of importance of the fabric compared to other urban areas and where there is a more ancient presence of ecclesiastical factories. It seems this is another settlement whose foundation could be consisting of the forced union of two distinct populations that must have maintained a certain indipandence of customs and traditions for a while.

In the southern sector of the historic center of Acquaviva, in the Renaissance period there is a confined "ghetto", called "the citadel" surrounded by retaining accesses.

The settlement enjoys a simpler luck than the previous one as it presents spring water, as evidenced already by the toponym. The dense sequence of wells present convinces us of a genesis, at least of one of the two founding nucleuses of the city, around an axis that today corresponds only to a water underground line and barely re-interpretable in the alignment of a few stretches of alleys and courtyards in contemporary buildings.

The third of the "large" Murgian cities examined is Gravina di Puglia, which owes its name to the "Gravina" river which in turn derives from the particular karst configuration on which the city stands: the term "gravina" means in fact a natural fissure in the calcarenitic stratified rock traced by the fluvial passage. The stratification offers, since the Iron Age, a simple anthropization by adapting the natural cavities that develop on the slopes, along the stratigraphic bales. From these cavities as man-made not unlike how well described by Giuffré and Carocci in their Code of Practice for neighboring Matera, a city on a ridge conforms (superseding on a confluence, the Gravinesi hold to highlight the belonging of Matera to the same Gravina river auction).

The city of Gravina was therefore born as a rock settlement in the Bronze Age, it hosts an important settlement of the Magno-Greek period (on the opposite side of the gravina) and then the Roman one, up to the passage of the Appia which sanctioned a centrality until everything. the Renaissance and the Enlightenment (it is the birthplace of Pope Benedict XIII Orsini - 1724-30) with the reorganization of the central axis of the Renaissance city and its village.

On the edge of the plateau there are several minor centers, all of which are related to an economy of agricultural origin, centered on the production of cereals. In particular, the case of Spinazzola, which stands on a watershed hills between the Bradano valley and the Ofanto valley, was examined and for his location it belongs to a complex system of territorial control. In fact, it is located at the intersection of one of the inter-visual control systems of the Norman territory. From the top of the Spinazzola hill where a Norman castle stood until the 1950s, there is inter-visibility with several of the contemporary control towers of the territory. Even in more recent times, Spinazzola continues to perform its function as a territorial pass with the "Epitaffio" of the sheep customs and the "Tratturo Regio" route for the regulation of transhumance.

The rather minute historic village is configured as a traditional village of counter-ridge, characterized by small buildings predominantly of terraced and "pseudo - terraced" houses, even if with important transformations developed by the period of nobility of the historical center deriving from the pontificate of Innocent XII Pignattelli 1691 - 1700).

A second period of great importance of this village is the introduction of families of Neapolitan origin for the allocation of the productive lands of the area in the second half of the eighteenth century. In this phase there is a considerable construction of important buildings in the extramural band of the historic center and of important farms spread in the territory.

The Rural architecture

The elements of rural architecture belong to different types. As mentioned above, this is a territory with a strong agricultural vocation, predominantly cereal, which however has an important function in the transhumance routes with large areas dedicated to grazing. This dual nature requires that there be a real road infrastructure of the territory composed of "tratturi" and the relative dry-stone walls of protection with the dual function of defending the cultivated areas from the passage of the sheep and protecting the sheep from the aggression of the animals wild; in addition to a system of watering tanks with relative wells and cisterns and Jazzi (rest areas, fenced and protected for the herd in transhumance and the shepherds).

Beyond the minute architectures widespread throughout the territory, there are real strongholds in the most complex farms of which a brief cataloging is attempted, trying to distinguish morphological functions and transformations over time, due to the different uses of the territory that have followed one another.

Farms for Sheep: they are the most widespread household type in the northern sector of the territory. They represent the typical typology of the Murgian sector and are conceived as structures suitable for breeding sheep, therefore the composition of the spaces is marked by the development of suitable environments, mainly at a single level, and very often with large parts made in dry work, to exception (not always) of the area intended for the farmer's lodgings.

The Masseria for Fields, most of the masserie of the territory have had and still continue with a specialized agricultural activity on the latifundium cultivated with arable land. The type of household goods therefore changes from the pastoral type, changing the elements according to the different activities. Thus the stables and areas for the production of milk derivatives disappear to make room for storage compartments for agricultural equipment, silos and areas for the storage of crops and seeds. Often characterized by the presence of a cohort

There are frequent cases of mingling of the two models, with Agro-pastoral farms, not necessarily larger than the previous ones, but with greater specialization of the

spaces. This sometimes requires a greater dispersion of the building into more bodies not necessarily interconnected.

The Fortified Masserie features of this territory, to show its harshness and difficult survival. These farms arise with normal functions but specialize in response to the specific risk of the area in the late medieval period. These structures have similarities with the other types described above, in fact they recover the classic functional elements such as the courtyard (this time strictly closed and sometimes fortified), the environments for processing agro-dairy products, overlooking the courtyard and the house of massaro. The latter in particular specializes further with lookout elements such as towers, slots and drains placed at the main entrances. Sometimes an ecclesiastical classroom can be found outside the walls of the complex.

Among the historical types we have already mentioned the Jazzi, which sometimes acquire proportions of primary importance with residential buildings and specialized spaces for dairy processing and sheep shearing and milking, in addition to the large and often numerous enclosures to house the sheep

From the end of the eighteenth century, the Rustic Villas were added, alongside the real farms, sometimes belonging to wealthy families or noble families who resided in urban centers and who frequently used these houses as a country villa with an adjoining farm. These are normally buildings of a single volume whose ground floor houses the functions linked to productivity and the noble floor is residential.

The last typology, although rather widespread, especially in the northern area of the Murgia, is that of the farmhouses settled with the land reform of the 1950s, based on the "houses for the drainage consortium" or the Opera Nazionale Combattenti (National Veterans Opera) built during the years of the fascism. These are widespread agglomerations of small single-family dwellings with adjoining land mostly intended for horticulture, these settlements had the aim of making the territory that had been abandoned by the estates of the centuries centuries old fruitful, reassigning it to small owners.

The recognition of the values for the landscape, the rural areas and the historical centers

As mentioned above, the economic capacity of these territories and their recognition of identity, despite the years of industrialization and urbanization and the economic boom, have not been completely erased, and indeed much of the territory's quality agri-food tradition is today constituting a return value for local minor entrepreneurs.

The territorial enhancement process object of our research consists precisely in the recognition of the complexity of the components of the system that presents very high values, but also strong detractors and risk factors. the activity consists in the development of a multi-criteria analysis process based on the identification of the elements that embody the cultural identity of the territory. This process aims to recognize the still existing elements of the cultural field, even if sometimes not explicitly, of the site in order to develop their cultural value in a sustainable way and to introduce them into an economic process.

It has been found that the great attractions linked to the historical architectural and archaeological heritage, although very rich in a healthy territory, are only one of the potential improvement factors of the site's attractiveness and that, alongside these, the territory in its historical matrix could and it should be recovered in its archetypal structures, starting from the restoration of rural roads and stations, also adapting them to a new, partially tourist vocation.

In the analysis carried out in the three-year research period that has just ended, the networking of itineraries linked to the enhancement of the landscape (sometimes artificial, as in the case of the bauxite quarries of Spinazzola or of the Altamura quarry called "dei dinosauri"), to the dissemination of historical heritage (palaeontological in this case), to the enhancement of the gastronomic heritage and of the agro-food products in a chain of very high local value, to all the other values that the territory is able to express, constitutes a fundamental node to stimulate the attractiveness , both of tourist

and productive flows.

This is the program that underpins the sustainability of valorisation and recovery processes even of the more traditional values linked to the more recognizable historical, architectural and archaeological heritage, and certainly of undisputed cultural value, but unfortunately more difficult to place on an economic market productive.

Figure 1. The types of collective spaces in the historic city of Altamura.

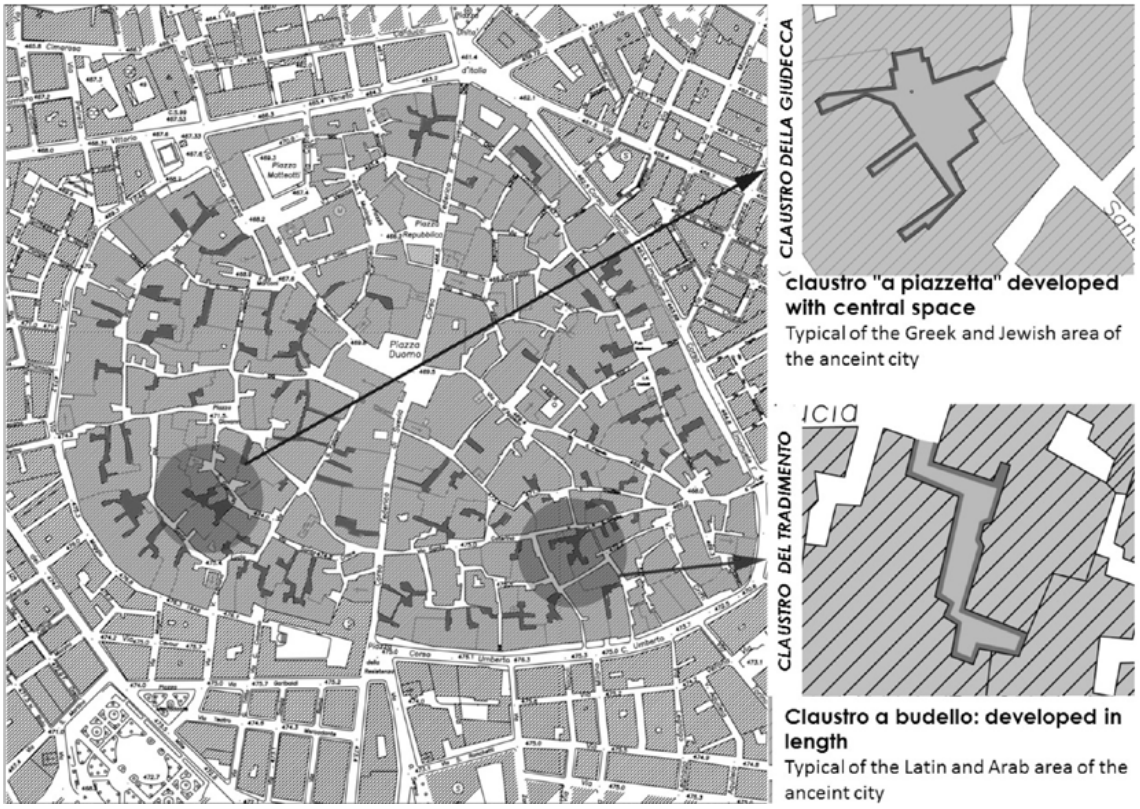

Figure 2. The conformation for homogeneous areas of the historic center of Acquaviva delle Fonti.

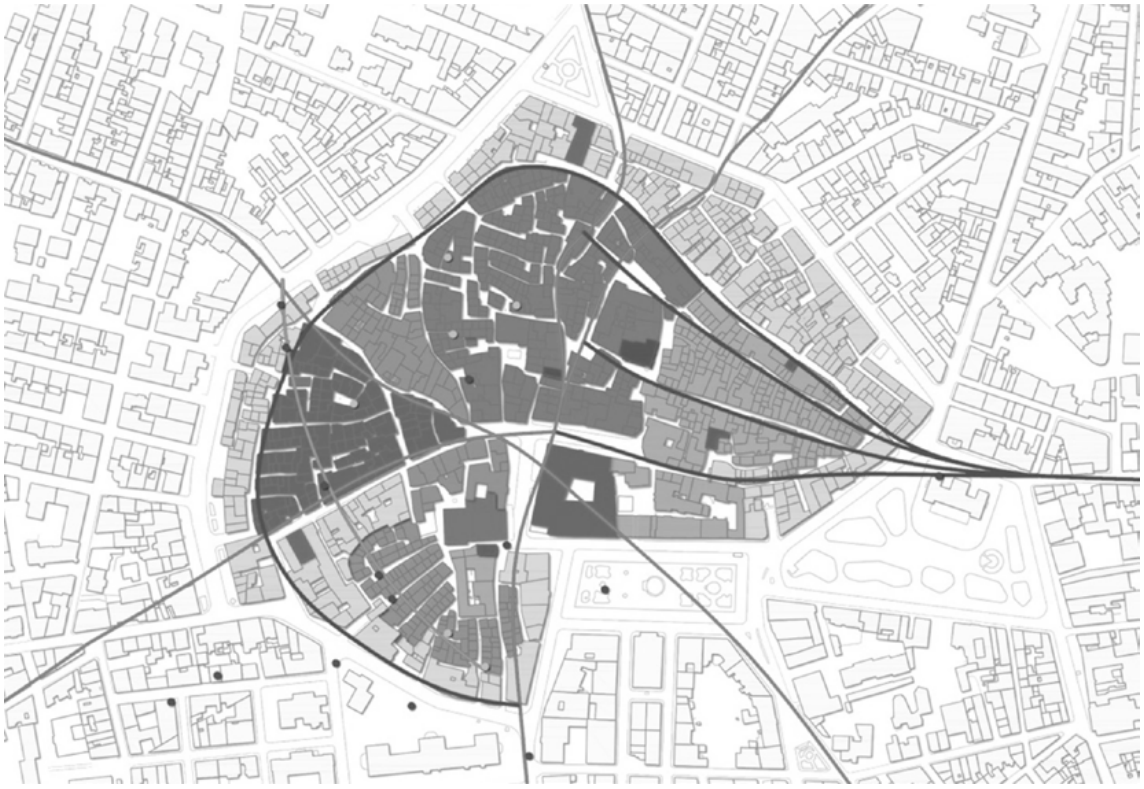

Figure 3. Reading of the relationships between the historic center and around in the case of Gravina in Puglia.

Figure 4. Reading of the public spaces type and of the building types in the historic center of Spinazzola.

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Heritage and renewal of the historical urban ensemble of Ulcinj castle

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The fortified citadel of Ulcinj represent one of the most important urban ensemble of the Adriatic coast. Its roots go back to prehistoric times, while the life within the castle was trembled many times by the changes made by the Byzantinians, Serbs, Venetians and Ottomans. The historic sites are problematic heritage because they represent the memory and identity through the centuries, stoned in archeological and architectural layers, but they also has to coexist with the new developments, dramatic changes and the people that lives in them.

Actually, the castle suffer several difficulties: abandonment of the houses from their inhabitants which started after the devastating earthquake of 1979, leaving the inner parts of the castle in deserted silent, the inappropriate developments and illegal constructions, mostly without criteria all spread around it, and the neglect of the different stakeholders in preserving and promoting a sustainable development.

The propositions for renewal of the Ulcinj Kalaja come as a tentative to revitalize the Old Town and also to propose examples of sensitive interventions which try to preserve and conserve the cultural, historical and architectural beauty of the site but also being adapted to the new economic and social needs of the XX century. This research is a dual approach between the identification and valorization of this urban historic ensemble and design proposals which tried to integrate the physical fabric and ruins in a renewal concept so as to keep alive the old town and hence preserve and not affect the authenticity of it.

Introduction

Ulcinj castle in Ulcinj, Montenegro is situated in a strategic small peninsula on a rocky hill overlooking the Adriatic Sea. The old town was transformed into an acropolis with huge fortifications 300 meters long and 150 meters wide at their widest point (about 8 acres) and was a strategic node between the sea and the internal highland of the Balkan. In this incredible acropolis layers of stones and archeological heritage that belonged from prehistory to modern times can be seen. Several times through the course of history major civilizations have passed through the region leaving marks on the citadel: Illyrians, Romans, Slavs, Venetians, Ottomans, Austrians, etc. (Mijoviq, 1977) Traces of the Byzantine walls of the acropolis, are partly constructed on the old Illyrian walls, some of whose foundations can still be seen nowadays. Inside the citadel there are archeological, historical and cultural heritage that stay next to each other offering a natural museum. "At the top, towards the landward entrance, the Balsic Tower marks the strong point of the citadel, close to a sixteenth-century church subsequently transformed into a mosque. The inside of the fortified town is still standing, with small old houses reached through narrow, winding streets." (Pichard, 1979) The town recently spread out along the coast and inland on both sides of the old Centre.

The old acropolis is in a difficult situation starting with the abandonment of the inhabitants since 1979, after a tragic earthquake, also new investors building without any criteria new structures spreading like mushrooms all around. In the symposium kept in Ulcinj in 2016 the participants stated that the *Kalaja* was in peril due to: "Inappropriate development, including illegal construction that affects the authenticity of the physical fabric, the urban morphology, the local architectural typologies, the historic economic functions, the traditional materials, techniques and technologies, as well as the natural features of the townscape elements of *Kalaja*" - (Symposium, 2016)

Ulcinj refrain the notion of Historical Urban Landscape (HUL) even though it is not part of the Historic Cities and Towns on the World Heritage list, which states:

> Historic urban landscape is a mindset, an understanding of the city, or parts of the city, as an outcome of natural, cultural and socio-economic processes that construct it spatially, temporally, and experientially. It is as much about buildings and spaces, as about rituals and values that people bring into the city. This concept encompasses layers of symbolic significance, intangible heritage, perception of values, and interconnections between the composite elements of the historic urban landscape, as well as local knowledge including building practices and management of natural resources. Its usefulness resides in the notion that it incorporates a capacity for change. (WHC, 2008)

The traces of heritage are being covered by concrete and mortar, greenery and dust and crushed under the pedestrian visitors. On this dramatic situation and the request of Ulcinj Municipality, a group from the Faculty of Architecture of the Polytechnic University in Albania, made several visits, interviews, surveys, photos, sketches of the old citadel that finalized in several design ideas which recognize that "Kalaja is not an unchangeable monument", and should be developed for the good of the entire community, (Symposium, 2016) but at the same time must be actively and sensitively conserved in order to avoid further destruction of its heritage.

A short history and description of Ulcinj Castle

The first traces date Ulcinj from early 7th –century BC where the Illyrian Olciniatas tribe confirmed their presence before the Roman conquests in 2nd century BC. (Bajcinovci, 2017) The town was named Olcinium and was later included into the Eastern Roman Empire playing an important commercial role. It remained under the Roman control till the 12th-14th century: Period of Serbian rule under the state of Zeta and Balsic Lords. Ulcinj was the seat of Lord Durad Stracimirovic Balsic till 1405 when the Zeta state fell and the city became a vital regional, political, commercial and naval center under the control of the Venetian Republic.

(Gal, 2017) During the Conquest of the Ottoman Period the city was still a key strategic point in the Adriatic but suffered from drastic changes in its urban structure like mosques, hammam, turbe etc. being a significant Turkish garrison. The State of Montenegro acceded to de facto autonomy in the late seventeenth century following a long drawn out struggle. The dynasty of the prince-bishops, the Petrovics, governed the country for two centuries and finally saw recognition of its independence by the Congress of Berlin in 1878. (Pichard, 1979)

Through history the city has suffered numerous fluctuations in development and decline but the most shocking event was the tragic earthquake of 15 April 1979 which hit the entire coastal region of Montenegro over a distance of 100 kilometers. (Pichard, 1979) This tragedy has struck historic parts of the old walled city, ancient churches, monasteries, minarets, fortresses and battlements, which have been partly or totally destroyed and the people that abandoned the citadel and their houses left Ulcinj castle uncontrolled.

The Ulcinj castle hosts in a small surface several historical, architectural and cultural values. Lying mainly in the north-south direction, is mostly surrounded by steep rocks, hiding two pedestrians' entrances protected by remains of Illyrian fortifications. Historians suggests that the deep cave in the south part almost inside the hill was a marine and strategic position for small ships with a secret entrance in the heart of the city. This entrance and connection to the sea is blocked by a wide concrete platform used as a parking space. The castle has a magnificent architectural structure developing its urban morphology in more than 2500 years (Bajcinovci, 2017). It is a pure testimony of the constructions from different rules over the remains and ruins of the previous ones where traces of immense Cyclopean walls are still visible. Vejsa agrees that "Different layers were added to the structures during different periods of time. Often these structures are combined together and sometimes old structures or materials are used to construct new ones"- (Vejsa, 2017). The small peninsula is surrounded by the sea in the southern part and after a tedious steep climbing, the visitors confront a narrow entrance which reveals a space where the archeological ruins of a byzantine church covered by greenery can be noticed. This flat and small plaza is the biggest in Ulcinj Castle and introduces the Palata Veneta and other traces of the Venetian empire "recognizable thanks to the typical linear decoration and cold grey color limestone blocks," (Gal, 2017) as well as traces of a cistern, a fountain and some military barracks. The Turk invasion is more noticeable in the South West area were gunpowder, hammam, stores, turbe and tanks expose a purely military heritage.

As Gal (2017) describes: "the most important area of the city is the powerful Cittadella in the form of Acropolis, next to the north gate, the terrestrial one. The significant features are the Balsic tower, the St Marije church, the Custom and the Bishop's Palace." Behind a defensive and thick wall with a covered passage and openings which remind the fortifications of prisons the Slaves Square presents the most important buildings: a small and fragile mosque-church founded in 1510 which functions as a museum, the defensive elements which expose the heritage that date back to the Serenissima period and the old town, the tall Bolani wall[1] and the Balsic tower restored after the 1979 earthquake. On the other side of the Bolani wall there are ruins and the cyclopean walls, heritage of an undiscovered and antique civilization, neglected and forgotten under grassland.

The urban morphology is represented mostly by ottoman and medieval buildings welded with some winding narrow paths forming organic capillaries. The streets made of irregular steps are so narrow that it is hard to conceive the facades, their dimensions and their scale. Streets inside the old city represent a non-regular system of linear organic schemes mostly imposed by the sloppy terrain, organized in shapes and adapted to the local needs. While the buildings, mostly used as houses till the tragic earthquake of 1979 "are structures of medieval or/and Venetian period with some alternations of the ottoman one" (Etienne Barthélemy, Christopher Rodolausse, 2015).

Nowadays on Ulcinj castle you may encounter a congregation of old architectures and some new "modern constructions" which mostly harm the panoramic view, significantly altering the silhouette, or blocking the view of other buildings. This new structures built mostly after the 2000 on the shield of "modernity" and "tourism development" are all spread around

1 The wall was signed with the name of Johani Bolani, the Venetian rector and captain of the city between 1452 and 1456

Kalaja harming with their heterogeneous looks and materials the architectural heritage. Elevators of steel and concrete, giant concrete hotels facing to the sea, quay constructions full of parking spots and other elements, interfere in the Old Town disturbing the panoramic landscape.

The proposed design

After a thorough understanding of the historical, cultural, and architectural context the proposal ideas were based on the slogan of the symposium held in Ulcinj, Montenegro in 2016 which states: "Having in mind that the historic center of Ulqin/Ulcinj, a walled town known as *Kalaja*, has a unique inheritance from long past and should be treasured, maintained and safeguarded from neglect, damage, and destruction, including uncontrolled or unsupervised development, in order that this resource may be passed onto future generations as a timestone of history"- (Symposium, 2016)

The tentative to propose a new design is supported also by the definition on Historical Urban Landscape, (HUL) which has accepted the changes that may occur in the urban conservation discipline, and is based on two main principles:

(a) Continuous change acknowledged as part of city's tradition: response to development dynamics should facilitate changes and growth while respecting inherited townscape and its landscape as well as historic city's authenticity and integrity

(b) Enhancing quality of life and production efficiency helping to strengthen identity and social cohesion. (WHC, 2008)

As Uribe (2017) states "the concept of heritage is associated with something that has had value in the past and therefore should be preserved. We want our built environment to tell our history and to remain untouched in time", but time has changed and the Old Town does not function in the current state, being left almost dessert in the inner parts and visited by few tourists once in a while. "Sometimes conversion or rehabilitation is a better, more contemporary alternative to conservation." (Uribe, 2017) Adaptive reuse, as well as preservation may be the combined methods used in Ulcinj castle in such a manner that the architectural heritage is preserved and remain untouched in time while the real use and meaning of the building is differently considered.

Substantially, proposals for a sustainable development for Ulcinj are based on the idea that the natural landscape and the human built one, should have an aesthetic unity adapting to each other in a harmonious way, as it used to be the character of the Old medieval Town. The identity, and character of the old structure should be preserved bringing back the vitality of the city. The plazas in the medieval period as also in the Ottoman one are characterized by a closed volumetric atmosphere creating a secure but intense environment with several functions and architectures in contrast. These feelings should be maintained in the Ulcinj castle, where the visitors may see and understand the ottoman house next to the Venetian style, perpendicular to byzantine constructions.

The minimal interventions are thought to be done in four strategic points: the museum area, the plazas and public spaces, the streets and the buildings, trying to create e cohesion and u unity of the natural with the constructed material, and the people that live and visit the historic city. "Urban historical sites are part of a wider totality, comprising the natural and the built environment and the everyday living experience of their dwellers as well" (WHC, 2008).

The museum area is scattered in different buildings. The museum administration and archive offices are hosted in a medieval structure modified during the ottoman period, while the Square of Slaves, an ottoman construction formed by a series of vaulted rooms harbor inside some of the archaeological findings of the Hellenistic period. This construction is covered by a terrace that can access the archeological site through a ramp. The Old church-mosque is used as a small museum representing artifacts and documents of the Venetian and medieval period, while the Museum tower represents part of a defensible complex and the ottoman architecture. Close to the Balsic tower is the Episcopal palace used as an etymologic museum. The intervention project is thought to connect the museum area through a pedestrian wooden pathway which projected through an accessed slope

creates a linkage and an itinerary more understandable and easy for all the visitors. At the moment the visitors take a look at the mosque church and to the Square of slaves without understanding the whole picture and noticing the heritage and values hided in the other buildings. The pathway, also the lightings the patterns and texture of the floor will be a natural guidance through the itinerary of the whole museum area.

The most important part is to involve the visitors in every public space and street of *Kalaja* making it a place for everyone. The antique nucleus which occupies the highest part of the hill and bear the conglomerate of historical areas may not be the only important and visited part of the castle but movements may flow fluently even in the other areas giving life to the inner parts of the castle. At the moment most of the public spaces are blocked by illegal buildings, or private services like restaurants or hotels, which sometimes do not allow the pathways to visitors, and do not offer the minimum of urban elements, like stools, shimmering elements or garbage bins. The public spaces are in total dark during the late hours turning the alleys in frightening areas. The propositions take in consideration the visitors, and the dwellers of the Old City offering them a harmonious way to live, feel, protect the built environment but also to have a mutual benefit. If tourist would have some of the missing services in the *Kalaja* they will spent more time inside it and owners may gain more, creating a cycle from where both people and the city may profit. "Plazas are a physiognomy formed by the practical needs of its own people. In them, there can be all the city functions: they are not only organization and distribution places but also spaces to connect and converge the needs of time (Morini, 1963, p. 121)". The connections between the two entrances, the southern and the northern entries should be uninterrupted, giving the possibility to move along and circulate through the castle in different direction experiencing the heritage in every perspective.

The plazas in the south and the west are thought to be released by the obstacles freeing the space to the visitors. The first steps are to remove the illegal buildings, structures, and tents which block the natural view toward the sea. An important case is to demolish a giant concrete structure on the west area, giving a natural amphitheater where the sea and the sky are the scenography while the blocks of stone form natural stairs and seats. Although *Kalaja* is surrounded by the sea, there is no place where the salt waters are present inside it and people watch the panoramic view from above without feeling the fresh Adriatic waters. The west part has some stone stairs next to a defensive embrasures tower. The design proposes to evaluate this area creating a small natural rocky beach, accessed by the circular stone stairs giving to the castle a missed function during the warm weather.

The mini squares which are formed by the ruins of old houses are mostly rounded with piles of stones and are proposed to be cleared and opened to the surrounding facades. The creation of mini public plazas is a possibility for bringing life inside the isolated inside areas. The torsion of twisting lines of the streets as well as the limited sections create not only protected spaces but also path pockets with a private and intimate character. These streets as well as the mini plazas may be scattered all around the Old town in such a manner that no part of the castle, remains without activities. Some actions taking place may be, info-points for tourist, mini-shops with artisanal products, small markets, coffee bars, a drugstore, as well as studios of painters, sculptors or other artists, and a lot of events which are missing inside the castle. There are three scenarios for reusing the old fisherman dwellings:

The buildings may be restored and retain their prior functions, as residential buildings. In a way that the owners gain some profits from the old structures, some of them can be transformed in hostels. In such a way it is not necessary to build big and grand monstrous hotels, (which destroy the landscape of Kalaja and may be found everywhere else), but offering small, cozy homes where visitors may feel the character of the old houses.

The buildings may be adapted for two different functions: services and residential at the same time. The lower floors may be used for several services like bookstore, coffee shop, ateliers etc., while the upper floor may be used for residents.

The last scenario is to restore the old structure with the possibility "to convert spaces that were originally designed to accommodate certain functions into spaces that admit new uses relevant to the present" (Uribe, 2017). These spaces may be restaurants, cafeterias, artisanal shops, souvenirs, etc.

Conclusion

Problems and issues of revitalization of cities, whole or in part, of groups of buildings or monument ensembles which are situated in an urban or natural context are the most sensitive and more controversial. These areas are confronted with the pressures and threats of urbanizations, modernizations and of fast profits from the habitants making these territories vulnerable. Ulcinj castle is in the same situation where the cultural, historical and architectural heritage is neglected and forgotten in total abandonment or under transformations that are destroying them. This paper proposes some modest and sustainable designs mostly focusing in valorization and evidence of the historical, cultural values of Ulcinj's heritage and then intervening with some minimal mediations mostly to the public spaces. The propositions take in consideration the visitors proposing to them some of the services that are missing into the castle and creating spaces and scenarios that offer to them several activities, like bathing, relaxing, gathering, shopping, learning, meditating, drinking, eating, sleeping etc., all events inside the historical walls of Ulqin where the main actor is the castle itself. A very careful attention is given to the itineraries inside the Old Town proposing a fluent museum created by the buildings themselves showing different periods and architectures. This built museum is created with restoration and preservation of the external façade while making internal modifications in the dwellings giving them new functions with the purpose to give life and vitality to the Old Town. Attention is dedicated to the streets, public spaces and the museum area, creating for people the opportunities to profit, entertain, circulate, learn, and live in the Old Town of Ulcinj.

Figure 1. Above-Aerial view of Ulcinj castle in 1985, Courtesy of Ulcinj Municipality. Below-View of Ulcinj from the east side, Photo: Authors.

Figure 2. Map of Ulcinj castle, Courtesy of Ulcinj Municipality.

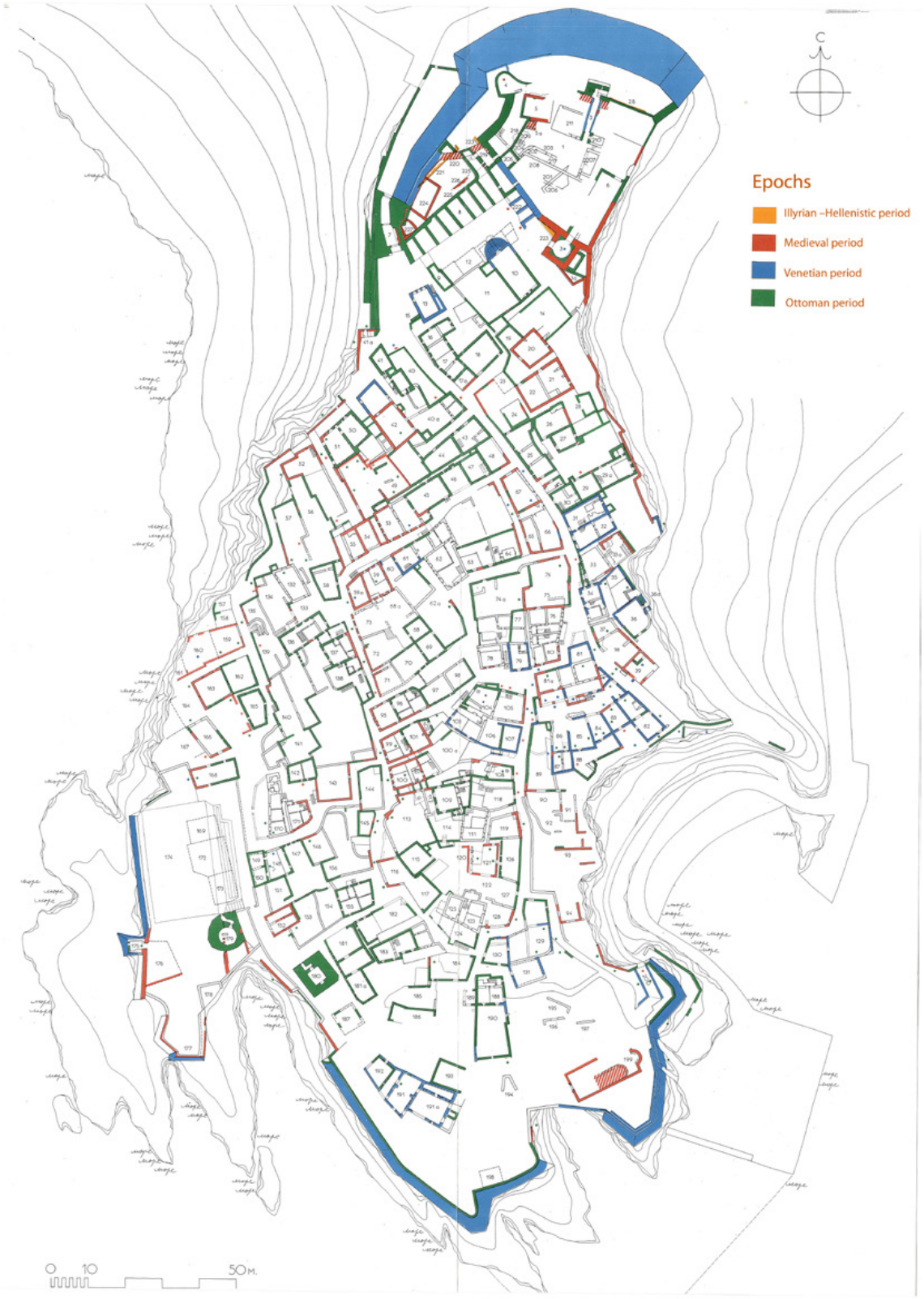

Figure 3. Below-View of Slaves Square nowadays and propositions for the public spaces. Renders of Students of Faculty of Architecture and Urbanism, Polytechnic University of Tirana.

Figure 4. Above-View of west side and the new structure which harm the landscape. Left- proposition for the public amphitheater returning it to the visitors and community. Courtesy of students of Faculty of Architecture and Urbanism, Polytechnic University of Tirana. Right- photo of the scale model showing Kalaja, exposed in the Ulcinj Museum showing the disappeared outdoor theater.

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The ancient center of Ascoli Satriano: studies on urban restoration

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Our case study is the town of Ascoli Satriano, investigated in the specific relationship between the historical buildings stock and the Palazzo Ducale.

The urban pattern has been analyzed in order to track its historical evolution. Such analysis was mainly done by observing the current buildings, both the specialized and the basic ones. The attention was focused on the south-east area of the Palazzo Ducale and it extended to the Monastery of St. John the Baptist. This area, just in between the 10th century monastery and the Norman tower, has been identified as the main subject and so it has been examined more thoroughly, since it is part of the core of the ancient center of Ascoli.

The first issue addressed was the current lack of dialogue between the monasterial complex and the Palazzo Ducale – and between these two buildings and the basic construction developed between them. The evolution in the shapes has been studied in order to reorganize the area not on the base of abstract schemes, but arising from the analysis of the typical structures of the city. One of the main criteria that guided the studies and the proposals was the need not to mystify the urban reality of the place. For these reasons the orientations of the existing buildings have been searched and repeated and the volumes have been kept as they were, in order not to alter the existing relationships between the different masses. The difficulties related to the heights have been tackled by using terraced floors connected by ramps connecting the 15 meters of difference in height between the reference height of the castle – that is the ground attic of the east elevation – and the lowest level of the Monastery, linking the various intermediate heights of the volumes that are parts of the existing urban fabric.

Introduction

This case concerns the city of Ascoli Satriano, more specifically, the relation between the urban fabric and the Palazzo Ducale. The context of Ascoli Satriano prove to be very appropriate to carry out a wide verification of the assumptions that guide the methodological complexity underlying each encounter with the evidences of history and art.

In this case study there are many considerations related to the location that show the relevance, since ancient times, of the position of Ausculum in relation to the main geographical nodes of this part of the Italian territory. The site witnessed wars and experienced a great artistic and architectural flowering already in the classical era. The vertex of the four hills above which Ascoli grew up are the cornerstones of an urban growth both aware and able to seize the opportunities offered by the specificity of its orographic position.

The research has therefore examined in depth the knowledge of such aspects employing surveying tools which aim is capturing reality in terms of scientific objectivity, according to methods that have used the most advanced tools and the most up-to-date techniques. Apart from the general documentary sources, the Castle of Marulli of Ascoli Satriano and its objective reality represents the privileged source that describes, through signs and traces, the life of the people who lived in these places.

The analyses carried out on the Palazzo Ducale of Ascoli clarified the current "facies" of the artefact, reconstructing its history through a critical reading of the monumental "text". The architectural surface appeared to us as a complex weft of material signs to decipher, even where interventions have distorted and damaged the original material. The analyses are preparatory moments to the design-conservative one, towards a decomposition of the totality of the building for a unitary and critical reading of the work. These are the premises of a restoration project aware of the historical value of the material that makes up the building.

Such analyses were conducted on some portions of the castle, which identification was dictated by the limited availability of legible surfaces and the need to summarize in a few clear sections the complexity of the actions suffered by the building.

The critical assessment paths (that leads to design choices) has been developed with an inductive method, researching in the stratification of history on architectural matter the prompts that allowed the design synthesis proposed as result of this reflection. The consistency of the choice of the new functions identified in relation to the acquisitions obtained through the research, is verified through the observation of the well-composed unit of outcomes that have been outlined through the design examples carried out.

Methodology

Our study highlights historical aspects and how the urban fabric and buildings evolved in Ascoli Satriano: we analysed the changes classifying the ones we had to defend and those ones which could be modified, so as not to clash with the context and alter the city shapes. The survey method used is based on iconographic and cartographic written sources, but due to the low prevalence and difficulty in discovering these documents we had to base our survey on the city itself. We studied the urban fabric in its current conformation, examining all its aspects and potential problems related to its development and, above all, the transformations of the urban centre. The study of the construction types and their development process, through inspections on site, allowed us to recognize the historical values of both buildings and the urban fabric. In fact, we reconnoitred the alleys in the historical centre in order to find track of the most ancient urban planning. The results of this study were at the base of our project phase, whose aim was to enhance the characteristics which let us defend the shape and the structure of Ascoli Satriano. For a complete analysis we also studied the origins and development of the city and those of the territory nearby. Due to the consequences of war and natural disasters it is not possible to track a precise and coherent picture of the historical development of the city, but we can set the first medieval settlement on the hill of Pompei, which is confirmed by the *Santa Maria del Principio* Cathedral where the bishopric was. The depopulation of this first core happened as the result of the invasion of Ruggero II in 1133 and the earthquake in 1343. The lack of sources does not allow us to date the birth of

the site where Ascoli Satriano is located today. However, attempts to understand something more about how the city rose were carried starting from the analysis of the current territory, in particular of the specialized building typology, the only one from which we can figure out a more certain date. The foundation of the *San Giovanni Battista* Monastery is assumed at about X-XII century and it is situated on the slopes of the *Serra* district, current hill of the Castle. The core that emerges during this phase is composed of a small centre that extends between the *San Giovanni* church and the Norman sighting tower, which represents the first core of the *Palazzo Ducale*. The extension of this agglomeration was discovered studying the roofs of parcels, which look thicker and denser than those next to them. The core is assumed to be surrounded by a city wall which we traced following the spontaneous development of the ridge trails and considering as a point of reference the bastion located in the current *Torre Arsa* road (burnt tower in english), whose name seems to reveal the presence of a destroyed tower. In addition, the identification of this first agglomeration is supported by the main path, the current *via Castello*, which divides this core into two symmetrical parts. The next development phases of the city are determined following the same key to interpretation to the remaining part of the urban centre.

Forming process

Our project focuses on an area located to the south-east of the *Palazzo Ducale* and it extends to the *San Giovanni Battista* Monastery. This area, located between the X-century monastery and the Norman sighting tower, has been identified as the main object of our study because of its importance as founding core of the old centre of Ascoli Satriano. During the study of the area, we faced a zone characterized by the presence of residential buildings which is devoid of any type of service, that are located out of the old city centre. The design method used aims at recovering the area, as a lively and flourishing environment, in order to resew the break among the two main poles, the castle and the monastery. To pursue such a goal, specialized buildings have been reintroduced so as to enhance the public area and contribute to its regeneration. The results of this study have both conservative and replenishing objectives. Looking at the pre-exiting buildings, we traced the main paths in order to create a relationship, which it does not exist today, between the project area and the castle whose aim is still the conservation of the existing shapes. The same aim was carried for the *San Giovanni Battista* Monastery, which is a kindergarten today. Being in contrast with the initial intended use has led to the decay of the area and the building itself. With such a study we had the opportunity to re-establish the initial dignity to the building, as well as its traditional characteristics. The replenishing purpose was pursued giving a cloistered structure to the monastery with the creation of a deambulatory which could close the existing cloister and the creation of adjacent rooms. All these actions aimed at defining a canonical structure. In addition, designing the spaces of the area it was considered necessary re-establish a relationship with the castle too. Being aware of the uneven ground which characterizes the site is strongly important for the project and it made us create lift systems which could put together the various altitudes and would result in several terraces. The highest altitude of this area is at 415m above the sea level on which the east side of the castle rises. The shortest altitude is at 400m, instead. One of the purposes was not to change the urban structure of the area, but to create at the same time a new space. In doing this, it was essential to considerate the building processes of the city in order to design the urban transformations consciously. As for the intended uses we have chosen for the buildings have also come out studying the city and what it needs. The buildings facing the east side of the castle host both small shops, exhibition areas and student accommodations. The small shops, in particular, are located at 415m above the sea level, the accommodations are at on the two levels below and the exhibition areas cover all the northern tower levels. The other complex building is used differently: a meeting room, which links the shortest altitude (400m) and the terrace at 412m. At this altitude we get access, in addition, to another accommodation and small shopping areas. The accommodations have been thought as places which could meet the needs of potential users of the school of Archaeology, which is our main objective in reusing the castle. Having a meeting room, moreover, allows to organize exhibitions, events and

promotional initiatives which could make this area more dynamic and profitable. The last aim of this project study was to recover part of the old city centre, characterized by layering processes, and the improvement of public areas including facilities in accordance with the general interest.

Conclusion

Our case study was carried in different phases, starting from an initial research and analysis to the real project. In the first phase we analyzed different aspects, such as the urban development, the shape of the territory and, obviously, of the buildings too. The specificity of the hydrographic recumbence was studied both from an urban point of view and from an architectural one, distinguishing two different moments: inspection and design. First of all, we studied the most ancient urban remains which are the results of several layering and constructive and formal values. Next, we defined the hierarchy of the layouts and of the shapes of the building. Our planning action starts, therefore, from a solid investigative study and it is structured through a geometrical and formal matrix concerning the dimension of the surrounding landscape, either natural or specific. With the planimetric organization of the project interventions it is clear the intention of re-establishing a "dialogue" among the shapes. The connection among these shapes and the building represents, in fact, the backbone of both the design setting and those bonds which are related to the context. Through the graphic representation it is possible to figure out the design operations in their entirety. Through the different prospective views, indeed, it is possible to understand the features of the design and the area in which we operate. This study was the expression of an urban and architectural research whose aim was to understand the phenomena and characteristics which contribute to the creation of urban spaces.

Figure 1. Vista generale dell'area progettata. Il progetto si inserisce armoniosamente nel contesto consolidato non alterando i rapporti tra edificato e palazzo ducale.

Figure 2. Vista di dettaglio all'interno della piazza progettata con particolare attenzione alle soluzioni di facciata e allo studio della pavimentazione. Sono visibili anche i collegamenti verticali che permettono l'accesso a tutti i livelli del progetto, dal livello più basso al castello.

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The ducal *palazzo* of Ascoli Satriano

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Our case study deals with the city of Ascoli Satriano and it has been developed by investigating the relations among the pattern of the building stock, the historical buildings and the relevant presence of the Palazzo Ducale. The Palazzo Ducale has been studied being totally aware of the importance of its identity in order to come up with design proposals which would be able to give a new vital impulse back to the entire city, by its restoration. The proposals should concern activities which combine the founding values of restoration and the cultural developments that restoration should cause. In dialectical terms the analysis concern the understanding of the building - in its physical, dimensional, material and structural aspects - in relation to a site characterized by an ancient anthropic presence. The study of the urban context has allowed us to track the evolution of the building's presence in the urban plan. All these analysis have been the basis in order to formulate design hypotheses which could be coherent with the needs expressed by the territory: the Carapelle Valley hosts several archaeological sites frequented by scholars from different parts of Europe; it would therefore be appropriate to propose suitable spaces for the scientific dissemination of the archaeological heritage and to encourage the carrying out of archaeological research and reconnaissance activities. Where to put each of the functions was chosen according to the strengths and weaknesses of each room. The solution of distribution problems, in particular vertical connections, takes into account the critical issues emerging from sudden choices of intervention attributable to previous restoration campaigns. In conclusion, all the design choices aim to create a real cultural hub that will affect the entire urban environment surrounding the building.

Introduction

This case concerns the city of Ascoli Satriano, more specifically, the relation between the urban fabric and the Palazzo Ducale. The context of Ascoli Satriano prove to be very appropriate to carry out a wide verification of the assumptions that guide the methodological complexity underlying each encounter with the evidences of history and art.

In this case study there are many considerations related to the location that show the relevance, since ancient times, of the position of Ausculum in relation to the main geographical nodes of this part of the Italian territory. The site witnessed wars and experienced a great artistic and architectural flowering already in the classical era. The vertex of the four hills above which Ascoli grew up are the cornerstones of an urban growth both aware and able to seize the opportunities offered by the specificity of its orographic position.

The research has therefore examined in depth the knowledge of such aspects employing surveying tools which aim is capturing reality in terms of scientific objectivity, according to methods that have used the most advanced tools and the most up-to-date techniques. Apart from the general documentary sources, the Castle of Marulli of Ascoli Satriano and its objective reality represents the privileged source that describes, through signs and traces, the life of the people who lived in these places.

The analyses carried out on the Palazzo Ducale of Ascoli clarified the current "facies" of the artefact, reconstructing its history through a critical reading of the monumental "text". The architectural surface appeared to us as a complex weft of material signs to decipher, even where interventions have distorted and damaged the original material. The analyses are preparatory moments to the design-conservative one, towards a decomposition of the totality of the building for a unitary and critical reading of the work. These are the premises of a restoration project aware of the historical value of the material that makes up the building.

Such analyses were conducted on some portions of the castle, which identification was dictated by the limited availability of legible surfaces and the need to summarize in a few clear sections the complexity of the actions suffered by the building.

The critical assessment paths (that leads to design choices) has been developed with an inductive method, researching in the stratification of history on architectural matter the prompts that allowed the design synthesis proposed as result of this reflection. The consistency of the choice of the new functions identified in relation to the acquisitions obtained through the research, is verified through the observation of the well-composed unit of outcomes that have been outlined through the design examples carried out.

Methodology

Our restoration project begins from analyses and studies on the artefact, through a first step of historical and archival research, followed by an inspection on site and on urban fabric in which it is included. The first phase consisted in building's metric survey and in its graphical restitution.

Then we carried out a textural survey in order to study the castle in its global composition. One of these analyses is the stratigraphic one which purpose is breaking up the whole building into stratigraphic units that are building's portions which have similar features in terms of composition, texture, color, etc. Each unit corresponds to a specific constructive or destructive action temporally and materially independent from the others. Furthermore, we analyzed the wall surfaces and their construction techniques in order to have a systematical and deep analysis of the current status. This cognitive approach has the aim of recognizing the typifying stratifications of the artefact and guaranteeing protection by suitable interventions. We also carried out the degradation analysis in order to study and better understand the architectural artefact. Degradation is a process which involves irreversible transformations concerning the construction material, chemical-physical changes and structural modifications too. The decay can be influenced by two factors: extrinsic factors, deriving from the external environment or man-made events, such as neglect and abandon; intrinsic factors, related to construction's immanent characteristics. The method selected for analysing the walls' pathologies consists in the recognition and identification of degraded situations on castle's

surfaces, and subsequent diagnosis in order to identify possible measures of restoration. These alterations have been defined by using NorMal 1/88 Lexicon (Regulations concerning stone artefacts). In addition, another category has been introduced, named "material alteration", which includes all the roughcasted surfaces, where the wall texture is no more legible. Moreover, with the aim of knowing better such case, we carried out researches concerning previous restoration works; the most relevants, which involved significant alterations of the building, were done in 1989 and in 2002. More specifically, these restoration works interested the structural consolidation of the construction. In fact the masonries and the vaults have been restored with reinforced-concrete injections. Moreover reinforced-concrete and hollow block tiles mixed floors have replaced the original coverings.

Forming process

The castle refunctionalization project starts from a concrete need emerged after a territory analysis. The Carapelle valley and its surroundings host different archaeological sites: archaelogical areas of Faragola, Daunians, Giarnera Piccola and the monumental area of the Serpente hill with its tombs. These areas are visted by different experts coming from all over Europe. Nontheless, this place lacks of spaces designed to research, teach or simply to share the archaeological heritage. Given this premises, we decided to assign different functions to some specific castle spaces in order to allow academic activities as well as cultural ones. The original nucleus will host the museum that will show not only the castle development but also the socio-cultural dynamics of the territory during the prehistorical and medieval period. The distribution paths of the museum has been designed in order to offer to the visitors the opportunity to appreciate the most ancient part of the castle as well as the recent one thanks to the presence of a loggia exposed to the North. Lifts will be located on the West side of the castle which is characterized by reinforced-concrete and hollow block tiles mixed floors realized during the last restoration works. This structural conformation allows us to plan lifts with no damages to the original constructive structure. The ground floor spaces will become offices and warehouses; moreover there will be an Infopoint where to start the museum itinerary. The planimetric layout of the room exposed to South on the groundfloor suggested us to design a meeting room. In fact the room is suitable to host a wide audience and it has an independent and direct entrance from the courtyard. The first floor will host all the spaces the school needs: scientific laboratories, teaching rooms, a specialized library and an exhibition space for restored artefacts.

The East area will host reading and study rooms because of the presence of wide and illuminated spaces. The West area will host teaching rooms and scientific laboratories. The entrance to the school will be through the big bright room located on the first floor and exposed to South. Our purpose was to increase value of this room which was damaged after the works in 1989, when a modern roof was planned and built creating an unusable space. For this reason we planned a refunctionalisation of that space creating an exposition area linked with the room below. This room has both distributive and symbolical role because of its importance as distributive hub and as vantage point in the Carapelle valley.

Conclusion

The case studied has been solved in several phases, starting from a research and analysis condition, up to the actual design. In the first phase of the investigation various aspects were researched, such as the study of urban growth, the analysis of the forms of the territory and those of the built too. The specificity of the orographic terrain has been tackled both on an urban and an architectural scale, distinguishing the two moments of investigation and planning. We used the most advanced tools to research reality in objective and scientific terms, first of all GPR (Ground Penetrating Radar or Ground Probing Radar), geophysical, non-destructive method of investigation, used to obtain medium-high information resolution of the characteristics of the subsoil. Through the acquisition of GPR profiles, the areas on the ground floor and on the mezzanine floor have been investigated, helping us to reconstruct the phases of the castle. In fact, it was possible to argue about the existence of an enclosure,

confirmed by the anomalies detected along the profiles executed perpendicular to the masonry. This hypothesis of installation has been accompanied and confirmed by the reading of the wall weaves, recognizing the same types of wall hangings and corner blocks that mark the limit of the corner towers of the enclosure. A line of critical and conscious investigation has been pursued during all the moments of study, this conduct has led both to hypothesis and, where possible, to concrete and scientific answers. The research adopted initially had purely theoretical characteristics, then an epistemological phase was tackled, and finally the graphic-design moment was discussed. The contribution presented seeks, therefore, to underline the link between historical-critical research and scientific input, starting from theoretical assumptions and finding application in design choices.

Figure 1. Vista della biblioteca sita al piano nobile del palazzo, il primo, e collocata negli ambienti in cui è possibile sfruttare l'illuminazione naturale. Particolare attenzione è stata posta al recupero della volta incannucciata con restauro degli affreschi.

Figure 2. Vista dello spazio museale collocato nella torre normanna, la parte più antica del palazzo.

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City and Nature: Writings of a Fragile Balance between Erasure Overlap and Transformation

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The city "*as an organism in the making in constant transformation*" is the thread of the research developed in the city-landscape of Liège, where tissue morphology bears the traces of events, economic and social relations, mental and physical, which require new readings. The invisibility and the contemporary ignorance of the "morphological conditions" of the thick territory of Liège call for an urgent questioning of the practices of reading and interpretation of places to apply methods corresponding to the concept of *operating history*. This contribution deals with the opposition "*city-countryside*". It is a duality questioning Belgian cities cyclically. Indeed, urban diffusion, as well as the quest for an ideal "countryside", are phenomena to be analysed in greater depth, by applying morphological reading methods based on geomorphological characters, reasons and intelligences, human settlements and evolutions that this system of elements makes it possible to identify and understand in time. By questioning readings, we note the lack of in-depth knowledge of morphological urban and landscape dynamics. Returning to the interpretative reading, means to review the duality and to understand the countryside's demand. By reading specific sites, we want to deal with the persistent fragile relationship in contemporary territories, where the illegibility is the result of the loss of morphological knowledge. By reinterpreting the fictional opposition "*city-countryside*" as a dialectical relationship between tensions (material/immaterial, physical/mental) we understand that city is rarely the result of erasure. This is more the visible part of an operation of overlapping or of a deeper transformation of urban and landscape components: dynamics always responding to cultural and technical objectives of people operating in the territory. These contexts show the effects of the loss of in-depth morphological knowledges. Putting into question readings means to restore lost knowledge, opening action's perspectives, reconciling city and countryside, nature and architecture.

Introduction

Architecture, city and urbanity today constitute a conceptual continuum that is no longer to be discussed. However, the consideration of the city "*as a constantly changing organism*" still divides schools of thought and urban planning practices. In the cultural context of French-speaking Belgium, the city, still dependent on zoning, suffers yet from enslavement to the rule and hardly allows space for prospective approaches. The resulting territory shows the effects of a sectorial management that since the twentieth century divides the parts of a single and continuous body that is slow to recognize as an *organism in transformation*.

The ecological crisis has reopened a gap calling into question the modes of governance which, today, are gradually moving towards policies with a greater local and participative dimension. The debate finally opens on the characters of the territories and the behaviors of those who condition them: the inhabitants. And there are again questions about the ways of capturing signs of mutation, their interpretation and the need to extract clues and tools to reorient territorial actions to come.

Newfound confidence in the ability to build visions for the future depends on the culture of the territory to be rebuilt and promoted.

Accompanying this change of posture requires fundamentally changing the gaze, recognizing that the *territory is in motion* and that it is time to return to sharpen the methods of observation and description. This will make it possible to pass from the static and fragmentary vision of the territory as an object of functional division to the cultural and moving landscape. To accommodate this methodological mutation, it is fundamental to reconsider urban nature, to be understood in its mutability, as an artifact composed of natural and human actions in interrelation (CEP-ELC).

This research posture and vision are developed within the LabVTP laboratory of the Faculty of Architecture of Liège (BE), by a group of researchers and teachers practicing deep investigation of the environment. Through the questions of development of cities and territories, they try on the one hand, to reappear the lines of forces or tension still present in the territories and on the other hand, to reconstitute a lexicon located to reuse as a foundation project to be implemented.

This position of reading the past and re-launching towards the future is based on the fundamental principle that the city and its territory are not fixed objects. On the other hand, they constitute the living and shifting tissues of an organism in continuous transformation.

If we consider that environments are made up of various materials - human and natural - subject to multiple actions in continuous interrelation over time, we understand that, to regain the capacity to intervene in complex territories, it is especially necessary to reacquire the instruments to understand the writings, the structures and in synthesis the languages or the cultures that the populations have patiently inscribed in the ground over time.

Thus, it is clear that, faced with the territorial crisis, the problem that arises is not of a technical or legal order, but it is above all cultural and understanding of language.

The questions opened by the predominance of objective methodologies focus on the effects of an objectification, or even an extreme functionalization of the territory. These, through survays, falsely exhaustive, have given us descriptions of our living environments that have been reduced to a pile of objects, devoid of any internal dynamics or interrelationship. This led us to the impossibility of understanding the movements in progress. But this reduction, from the state of active materials to that of inert and dumb objects, has inhibited the ability to question the current dynamics, their reasons for being and especially on the fate of any index of mutation in the process of development. This reduction has made us unable today to state intentions and therefore to make the project. Without awareness of this loss, it is impossible to understand the potential of signs and traces that are still present today in the territories. These only ask to be recognized. Thus, returning to the reading of built and un-built spaces is not only a duty, but an urgency for research and for it to be today forward-looking and operational.

This contribution focuses on the study of several types of territories affected by forgetfulness and the inability to read. The reactivation of the reading modes was a way to bring back to the surface characters from backgrounds that had already had structuring effects for the territories before. Their questioning allowed to reactivate the game of relations which was lost now and to revive the hope in the momentum of the reopening of the territories.

Materials and Method

What we consider the fundamental materials of our research are the elements, natural and artificial, which constitute territories composed of city and nature. These hybrid artifacts are an integral part of large landscapes strongly characterized by human action. Most of our studies and in-depth readings concern the territory of the city of Liège, in Wallonia (Belgium). It is a city whose development is intimately interconnected with the changes in the water landscape that hosts it: the valley of the Meuse. Two other territories have been the object of an interpretive interpretation of the landscapes that welcome and characterize them: the city of Ath in Wallonia and the maritime coast of Maccarese, in the north of Rome (Italy). Their very different territorial and landscape conditions have provided a very useful field of experimentation to understand the interest and efficiency still held by the reading modes which proceed by the refinement of the in situ observation, to be connected to the interpretation of environmental maps over time. The study of historical maps is proving to be a powerful and essential tool to understand both the importance and the reasons for the geomorphological changes of places.

The importance of returning to consider the physical forms of the soil, to follow them in their natural and artificial mutations constitutes a fundamental point of the need to experiment again with the descriptive approach of the territory. Indeed, the evolution of knowledge and territorial practices, led to the end of the twentieth century confusion or even ambiguity, voluntarily maintained, between the landscape and its image, between the landscape-matter and landscape- virtual. The aesthetic and visual approach, widely diffused from the nineteenth century, is strangely marked by attitudes similar to those developed at the end of the twentieth century, with the use of ever more powerful technologies for detecting images of the earth.

Already through the photo, and then, through the aerial and satellite images, the distance between the observer (always more distant from the places) and its object of study (the landscape context) gradually produces an emotional and mental distancing. This has led, in some cases, to the loss of connection between the inhabitant and its geomorphological support. Thus, gradually the human has distanced himself from his context by engaging a process of progressive replacement of the concrete reality of his environment, by the representations of it. Paradoxically, if in the eighteenth century landscape painters use painting as a medium to tame the wild, in the twenty-first century, scientists use a new means of capturing reality that allows becoming aware of the existing. But while the former influenced the composition of the large landscape domains, the others implemented their own *deterritorialization*. Indeed, the great distance of the earth seems to lead to forgetting the material that makes up the landscapes. And representations of the earth produce visual fascination without any bodily and mental implication.

On the other hand, the physical commitment is necessary so that one can pass from the analysis of images to the comprehension of the landscape and consequently also from the view to the identification. Thus, to find the complete involvement in the evolution of the artifacts we inhabit necessarily passes through the process of relearning to the knowledge of the complexity of the geomorphological conditions that welcome us. Relearning through the deep investigation of landscapes-matter with which to reopen a dialogue based on the principle of the operating history (S. Muratori), makes it possible again to sketch project possibilities. The history and the interpretations that it allows to formulate are at the base of the method used to bring out the elements which conditioned the passages from one phase to another of the development known by the territories.

Thus, the study of the development phases of the city of Liège, around the Meuse, slowly tamed and bent to human needs, was a field of methodological experimentation very interesting. The genesis of this territory could be told through the crossroads of objective cartographies, impressionist representations, pictorial interpretations, narratives and field surveys. The objective of this study was to allow any visitor today to perceive the ambiances and the landscape and urban values, material and immaterial, of a built environment where, little by little, the man has redesigned the natural environment that has hosted the city. The study takes the form of a narrative to understand the reasons for an urban settlement that faces strategic moments of change.

The conquest of the territory corresponds to human actions that today we can read

according to the philosophy of the European Landscape Convention. Each state of stability achieved, first goes through a state of crisis and instability, allowing human communities to reconsider their relationship with the site of implantation and with the natural forces in action. Thus, the narrative of the landscape that is there, gives us the keys of reading to understand the reasons of each stage lived, since the state of the "ground zero" of the landscape, until arriving at today.

The steps highlighted by this narrative have taken a denomination related to the factors that most influenced the mutations of the illustrated historical period. We have distinguished:

- The Ground Zero which designates the state of a landscape of origin that no one has ever seen; an environment of soil and water that pre-existed the first human settlements;
- the Site and the City, which explains how the available natural site serves to determine and guide the urban form;
- the City in Overflow, which shows the reasons behind modern extensions;
- the City in pro-ject, which explains the great determination to redraw the city and its geography;
- the City in Event, which highlights the voluntarist visions that have conditioned urban development;
- The City in Over-print, which explains the ways of rewriting the city on the city already used in the twentieth century.

The sequence of these stages of development shows how much the mutation of natural environments is linked to the continuous interrelation between natural and human actions. This course traces transformations not as mere moments of overflowing of buildings on the existing landscape, but as voluntary actions to give shape, control, bend, use, enslave and reshape or adapt natural geographies for human use. It illustrates well the principle stated by the landscape architect Gunter Vögt who declares that "*we are geomorphic agents*!" So, if the inhabitant, through daily actions, marks and uses the territory, he is also an agent of transformation comparable to water, wind, sun and all other elements that cause changes in the surface of the earth.

From this observation, we want to read more consciously the phenomenon of urban diffusion that affects our cities. This is commonly seen as the result of an oppression of the city on the countryside that occurs through the advancement of buildings that gradually erase the rural environment. This vision, centered on the uncontrolled advancement of the urban, favored in Wallonia the development of an almost insoluble opposition between the city and the countryside. On several occasions, urban growth has been questioned. But the sense of loss of an original rural ideal is still there. This one is ready to reappear, without being able to provide neither more objective readings of the inventory of the places, nor answers adapted to the request. A request that should be re-analyzed today because it concerns the claim to inhabit hybrid landscapes, which today are very much opposed to the simplified pastoral ideal that the commercialization of the campaign idea has transformed in desire for an environment that is not there at all anymore.

Faced with the cyclical return of the need to oppose the countryside to the city, we answer first by rereading the processes of transformation of places. And to the interpretation of urbanization as a machine that advances by erasing the rural world, we respond by explaining that these idealized forms of rurality had, in turn, already erased the original state of pre-existing natural landscapes. In fact, the land has gradually been subjected to needs that are just as violent as those in the urban area. In settling the human had to tame the earth to live and produce. The countryside is, like the city, a product of modification of the original state of the soil. The different forms of exploitation of it have created new landscapes that are also manufactured landscapes. In fact, rurality is a form of domination and rewriting of the earth's surface which is already a form of artificialisation. From this observation, it is not correct to oppose the city to the countryside. It should rather be a problem of simple transformation. Thus, the questioning of the mutations of the environments, one epoch after another, could bring out sequences of writings with fragile balance because always subject to the risk of a potential reversal of the state reached. And if the *territory is moving*, today we can reasonably say that it is necessary to go beyond the visions of opposition of the twentieth century, to formulate hypotheses supporting the continuous need for renewal of the writings. These, always superimposed as in a palimpsest, should guide the development, if possible with the greater capacity of re-using the materials of the landscape that is already there.

Discussion

In order to better understand the complex dialogue maintained between the city and nature, we have studied territories that have clearly shown us to have been rewritten continuously. From a first division of land, rarely denied to challenge thereafter, these environments have mutated. This is the case, for example, in the *peri-urban* areas of Ath and Liège where, sectors of cities or neighborhoods under the pressure of densification, show the persistence of fragmentary divisions linked to the old rural organizations: the castle domain from Sclessin to Liège and the southern extension to Ath. Careful study of the phases of construction, redistribution or de-densification or tissue brokering over time has allowed the detection of persistent structures that can still act as structuring elements for possible future mutations.

Thus, in the case of the city of Ath, the reflection on the permanent structures of the territory made it possible, on the one hand, to bring out the intelligence of the implantation of the old city, compared to its site of the origin and on the other hand, to find the traces of old roads or lines of the agricultural *parcellaire* which could be still starting points to rethink the urban form. After a work of highlighting the degrees of coherence of these traces with the condition of the geomorphological site which supports the city, the study was developed by demonstrating the nesting of the existing scales and necessary to arrive at proposing new sustainable configurations.

The existing traces have been interpreted as structuring support lines for several urban development scenarios. These have been argued from the possibilities of re-using geomorphological and natural resources that the existing pathways and parcel divisions allowed. These hypotheses relate to the study of large-scale landscape structures that make it possible to test the coherence of the existing layouts at the scale of the urban sector. Then, inside this one we formulated three densification hypotheses on the basis of different possible configurations of the plots to be built. Each scenario focused on the establishment of blocks of diverse character, but all emanating from a compatibility with the degree of urbanity of departure. The study thus shows the densification process as a system composed of built and unbuilt spaces, to be conceived as a means of sustained growth over time that does not disturb the pre-existing territorial and landscape structures in the site.

This type of approach not only focuses on the ability to recognize the structuring lines of both the landscape and the city, but also relies on the desire to welcome transformations in order to make them positive development factors. . Following this system of new writing, the relation between the built city and the unbuilt countryside no longer presents itself as an indiscriminate overlap of the pre-existing layer. But the new forms to be adopted are to be considered only as a possibility to rebuild the will to accompany transformations. Thus each community can benefit from tools to manage a conscious development of its own territory and be in such a way still able to imagine it or to project it.

The same condition of invisibility of the pre-existing traces now affects the territory of the Sclessin district in Liège. In this context, a rapid process of deindustrialization has transformed a territory of large buildings, bordered by a dense working fabric, into a declining landscape. The fast track, located along the Meuse and the striking influence of the voids has for this district to the establishment of peri-urban trade buildings. But these new investments bring nothing to the city's economy or urban quality.

The study of urban routes has allowed emerging the intelligence of implantation of a main way which, with the railway, served the plain and its working-class neighborhood. And from the existence of an old castle and the cutting of these lands it was possible to re-emerge the wisdom of land uses. On these bases of economy and of distributive coherence of the lands, we made visible some environments which were no more. From this new structure, started the phase of revival of the project hypotheses. These were used as feasibility hypotheses whose main objective was that this environment was not only an area to be exploited, but it had qualities and a landscape that could still guide development programs where building could offer a new life cycle and re-launch a neighborhood in a sustainable way.

This type of prospective reading was also tested in the Maccarese territory: an initially unknown landscape, whose maps and history allowed us to perceive only a development phase marked by the desire to exploit sites non adequate for urbanization. Indeed, this large portion of the territory, in the north of Ostia, was covered by a marsh. The opulent

city of Rome, before the union of Italy in the late nineteenth century, was the site of great architectural works, but it was the only capital of Europe where a large portion of the territory was marshy and unhealthy. Several sanitation operations have ended up redrawing the site to give us a territory where today are still visible the lines of the project registered on the ground. The concept of the smooth and striated space, developed by Guattari and Deleuze, served us as a starting metaphor for intervening within these environments to reinterpret. More specifically, waterways, both natural and artificial, have been the basis of a new interpretation of the site. One-off projects served to mark a territory where the transformation to be fought had to rely mainly on the strength of the waterways, on the natural system of the coast and the wooded reserves. But the reading of the lines of the soil made it possible to question the extent of the sea: it is also a resource to question, until reinterpreting it not as a smooth space, but as a striated space. It is stricken by new project intentions that put the sea at the center of development as a new resource for sustainability. From these concepts, the transformations to be re-entered in this territory were all structured around the same way of acting and reinterpreting a milieu.

Conclusion

From all these experiences it can be deduced that the city is rarely the product of an erasure operation. Its appearance in the territory corresponds to the visible part of a mechanism of incrustation or thickening of lines and traces that are often already there.

These are movements of re-appropriation that transform over time landscape components into structuring points of a new human environment, which in most cases is aware of the need for the natural resources it uses.

The level of permanence of these signs of taming the land makes it possible not only to recognize the actions of harmonious use of natural resources. But, with the advancement of techniques, built environments, in their interrelations with landscape forms, also reveal the intentions in phases of development where the human writings, through the building or the cultivation of the fields, have put to the test the fragile balance of coexistence between man and nature.

In conclusion, the methods of reading and describing the phenomena of transformation of the earth's states under human control, allow finding the reasons and the intelligence of knowledge to coexist with environments difficult to tame. The re-reading of these stages of growth of the interrelations between man and nature makes it possible to review the city no longer as a form necessarily opposed to the existence of a natural environment or a landscape.

These readings, on the other hand, make it possible to find the focal points of changes that have marked or changed the state of a territory. Knowing how to detect these strategic moments and the natural and artificial materials that distinguish them, allows re-orienting development.

It is thus possible to reconsider the fragility of existing writings, in order to review them as flexible systems to re-read to make new weightings of the materials to be transformed. This way of rereading the existing, denies the opposition between city and nature or city and countryside. It also helps to understand the imbalance factors, in order to study and take advantage of the ongoing transformation. In this way, the components to be re-used can emerge as elements carrying a new potential equilibrium to be cared for over time. This posture allows us to re-appropriate the project's ability to act so by integrating the principle of being able to collaborate with ongoing natural actions (CEP-ELC).

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The historical landscape in Albania: Ottoman tradition and challenges of the new expansion

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Albanian historical landscape is characterized by the strong ottoman influence. The most important old cities have inherited the urban and land organization typical of the Ottomans. In the two UNESCO's cities of Berat and Gjirokastra is possible to understand the rules of urban organism and its links with nature and the countryside.

The Balkan cities under the Ottoman influence, are the result of a continues urban balance between the nature and the settlement typology. The Albanian cities are not based on the module of the plot of the single house but on the dimension of the neighbourhood (mëhalla). The Ottoman city is the result of juxtaposition of these different and contrasting parts that are unified by the landscape and nature.

Nowadays the Albanian old cities are under protection by the governmental institutions, which take care about the buildings and the monuments inside the protected area. However the preservation of the authenticity of the city is connected with some other elements (open space, nature, landscape) that seem less important but that represent the "glue" between neighbourhoods. These connected elements are also the most exposed to risk due to the non protection by the State and interest by private persons for the construction of new buildings.

The open space and the landscape had been wildly transformed just out the boundary of the historical centre. So the challenge is how to preserve the historical landscape of the Albanian cities and the simple pleasure of observing nature and the environmental sensitiveness that represents the local culture.

The historical center of Berat: an example of a balanced relationship between Nature and Architecture

Berat, a city in southern Albania, is a very interesting case study as it clearly shows the strong linkage between landscape and architecture, nature and morphology, in particular orography and hydrology, and settlements' shape. This link has always characterized unplanned historic cities, both in Eastern and in Western cultures (Riza, 2009; Strazimiri, 1971).

Throughout the history and in different civilizations, architecture of various scales has intervened on the natural substratum in a more or less incisive way, but always respecting a criterion of congruence with the structure of the territory and the characteristics of the physical context. This founding principle has allowed cities to grow in an organic way, also through different cultural influences, adopting different strategies: via juxtaposition of parts, stratification or reinterpretation of existing fabrics (Kiel, 1990).

The old nucleus of this Ottoman village is a paradigmatic expression of the organic relationship between place, architecture and city, between natural, rural and urban landscape. It testifies the ability of architecture to interpret the natural landscape, and the possibility that the natural landscape possesses: that of becoming architecture itself.

Arranged along the banks of Osumi River, on two hillsides that face each other, its shape, apparently casual and picturesque, derives from a very strict settlement principle (fig. 1). The historical center is made up of physically separate parts with different features that form an organic system using the connective role of the natural landscape: the fortified city located on a triangular plateau on the hill overlooking Osumi valley, Mangalem and Gorica districts located on two opposite banks, the ruins of Gorica Castle on the opposite side, and the downstream expansion planned by the Italians in the Modern Age[1] (Baçe, Meksi, Riza, 1988).

In the scales of the city, architecture and the landscape intertwine and mutually reinforce each other. Indeed, the settlement principle perfectly interprets the structure of the territory; the building aggregate is skillfully integrated into the landscape; the urban space allows for an exemplary perception and enjoyment of the landscape, from singular points of view and through significant paths; the construction techniques and the resulting language are perfectly set in the context. Berat reflects largely the compositional scheme of the traditional Ottoman city, determined by the juxtaposition of the different districts (*mëhalla*), which always formed around a religious or social core, and characterized by the clear separation of the residential areas from the productive and commercial areas (Rayas, 1988). The center of the Ottoman village was represented by a specialized building (usually of religious importance), or from a tall plane tree accompanied by a water source. While the Western city, particularly the Italian city, has always represented itself through architecturally defined open spaces, the Eastern city uses the nature and emptiness of the enclosed spaces as symbolic places instead. The ancient part of Berat is characterized by dense urban fabrics of single-family houses, grafted like large concretions on the two opposite slopes. The houses consist of rooms constructed on a stone base. The theme of the "base" is declined both with respect to the architecture of the house and in its urban and landscape dimension, similarly to that of the "room", a housing unit that in its iteration makes a leap of scale, building a large "urban façade" open to the landscape. The analysis of urban settlement principles and compositional rules of Berat's house in its different construction types, allows us to address the dual aspect of repetition and uniqueness in architecture. The multiple variety and homogeneity of the dwellings, capable of producing a building fabric by complex aggregation in relation to

1 The urban fabric of Berat dates back to the 18th and 19th centuries. However, the oldest nucleus of the city was formed around the fourth century B.C. within the walls of the castle, on foundations of Illyrian times. The castle of Gorica also dates back to the same period, perched on the hill in front of it, forming a double fortification. In 200 B.C., the city fell under Roman domination and later underwent a series of transitions between Byzantine and Bulgarian domination, each of which tried to establish its own sphere of influence in the Balkans. The city returned to Byzantine rule in 1018 with the fall of the Kingdom of Bulgaria. In 1281, the city was occupied by the Anjou and the Byzantine emperor himself mobilized for his liberation. The importance of Berat continued during the 14th century, despite the internal uprisings initiated by the local feudal lords. Between 1345 and 1346, the Byzantine Empire definitively disappeared from the Albanian political scene. In 1417, despite George Kastriot Scanderbeg's attempts to defend it, the Ottomans conquered Berat. Throughout the Ottoman invasion, Berat remained one of the largest cities in Albania. The city had good infrastructure due to its proximity to the Adriatic Sea and to its important position to the east towards Constantinople and to the south towards Ioannina and Greece.

the morphology of the place, determine the original character of this settlement (fig. 2). The orography has had a significant influence on different architectural types and the building fabric: from the "house-façade" clinging to steep slopes in Mangalem district, to the isolated house with terraced gardens in Gorica district, in the presence of less steeply shaped terrain. The construction analysis of the traditional house highlights the duality between the plasticity of the wall attack on the ground and the wooden elasticity of the body of the building, the dialectic between the bases composed of continuous walls and the upper level, composed of aggregations of rooms modularly windowed. Indeed, the monolithic nature of the base, built as an articulation of the ground, contrasts with the juxtaposition and mutual autonomy of the upper rooms, with the presence of a roof that unifies the house and identifies the rooms as well (Pashako, 2009, 2012).

Berat is a paradigmatic example on how constructive architectural characteristics can create the basis of the city features. Indeed, stone and wood construction techniques give character to the overall house appearance, its interiors, and the city as a whole including the landscape in which it is positioned (Epifani, Greco, Iacca, Lunanova, Padula, Pappagallo, 2009).

The modern planned city: development and crisis of the urban form

A significant increase in population between 1912 and 1930 accelerated the spontaneous development of the city, and requested rationalization of urban expansion. This development, designed by the Italian architects, followed the patterns of the western city, consisting of streets and squares arranged in regular traces. Such settlement principles were adapted to the form of the place and identity of the cultural context. The Italians elaborated two regulatory plans, which dealt with the problem of preservation of the pre-existing buildings and the construction of a modern centre in conformity with the local traditional architecture. The first zoning plan was drafted in 1932 by Italian technicians with the financial support of Società per lo Sviluppo Economico dell'Albania (SVEA). The second plan was elaborated in December 1942 by the Ufficio Centrale per l'Edilizia, l'Urbanistica e l'Architettura dell'Albania (UCEUA), directed until 1941 by the Florentine architect Gherardo Bosio (Giusti, 2006, Resta, 2018). It is conceived as a continuation of the previous plan and involves the whole surrounding territory. Indeed, the scales of representation extend from territorial to urban one, with perspective representations and profiles of the squares. This plan seeks to enhance the historical fabric of the city and the traditional houses that make it up, and provides for the creation of an artificial island at the point where the Osumi expands its riverbed (fig. 3). The first four tables of the plan are dedicated to the study of the territory as a whole, including demographic and statistical data. This is followed by a careful analysis of the state of the city and the architectural emergencies, which makes it possible to define the buffer zone and the new residential area. It is also important the analysis of the traffic and the definition of roads categories, from the external ones connecting with the neighbouring villages, to those of penetration and up to those of walk in the historic centre and in the areas of greatest naturalistic and panoramic value. The historic centre is considered a special area to be protected. The plan opts for semi-intensive urbanization for the completion of the existing districts, while intensive urbanization is planned for the new expansion areas. The area of the new expansion extends along the new main axis, parallel to the river. The authors of the plan define the profile of all the main buildings designed along the axis (the Prefecture, Town Hall, churches, schools, market, cinema and theatre) and identify the historic buildings to be protected and enhanced. The projects of the main urban spaces of the city are studied: Town Hall Square and the commercial square. The projects have a high degree of definition both in plan (buildings to be demolished, porticoes, types of constructions) and in elevation (profiles of all sides of the square with definition of the facades and their materiality). Finally, with axonometric and perspective views, they show respect for the particular character of the local architecture. Only a small part of this project was realized (the long axis parallel to the river, the gardens, the town hall, the stadium). However, its principles have proved their worth in the subsequent development of the city (Pashako, 2011; Menghini, Pashako, Stigliano, 2012).

The contemporary expansion of the city has affected the northwester part, the only area that allows for new buildings and constructions due to the complex orography. Development has taken place in a disorderly and informal way, as in most Albanian centres, without following a reference model. The only planned intervention has been the Kombinat textile factory with its working-class district.

Osumi Island: a reconciled relationship between City and Nature

The recent International Urban Design Competition *Research by design: exploring resilient ways of "Urban by Nature"*, offered an opportunity to reflect on the enhancement of the historical-environmental context of Berat, investigating how urban areas can live with nature and be resilient to any natural phenomenon.

In March 2015, Atelier Albania together with the National Territorial Planning Agency (AKPT) and the Ministry of Urban Development of Republic of Albania launched an international competition for the settlement and development of an island in the Osumi River[2] (AKPT, 2015).

Nowadays the island is a lengthened strip of land with variable form, emerging from the riverbed in a significant place of the city, where the two districts of Mangalem and Gorica face each other.

This area is very problematic and fragile, as subject to the periodic problem of flooding. However, it has a strong impact on the city, although currently neglected and residual.

The Bazaar, a free and open space dedicated to trade in animals and agricultural products, originally occupied the current riverfront. It was ruined by the 1885's earthquake and was rebuilt to be again demolished by fires, until in 1946 its last footprints were completely erased. The first images are those of 1885 from Edward Lear's visit, in which the free use of the river and its banks is represented (fig. 2).

In the Italians' plan of 1942, the strategy was to give a defined shape to riverside and island, stabilized with waste materials, with an evident reference to the Roman Isola Tiberina. The island, with its clearly delineated architectural form, constituted the element of physical and compositional connection of the various parts of the city. A bridge that connected the two banks of the city crossed it. The plan was not implemented, and the bridge was built in the south of the island, at the narrowing of the riverbed, leaving this strip of land isolated (Pashako, 2015).

The twelve groups participating in the second phase of the competition faced the project in a different way. Many of them focused on the possibility of uniting the different parts of the city, others on the issue of floods and others on the creation of places for the social activities of citizens. Because of its strategic location in the urban structure, the island was designed as an urban and/or rural site, a hub with places devoted to leisure activities in a large park. Multiform footpaths, traced in the green areas or hanging over the water, connect the fragments of island that emerge from the water in dry periods.

The projects developed by CoRDA (winning project) and UFG Research-Poliba[3], focus on two different but complementary aspects and enhance the changing shape of the island through different strategies. On the one hand, the first project reflects on the value of the island as part of a larger organism that is the river and as an element of reconnection of the city with water. On the other hand, the second project interprets the island as a pole of the urban system and natural space (fig. 4).

The river with its island has a great iconic power and a recognizable spatial character. We can define it a "territorial room" with precise limits on a large scale. The island has a spatial condition of "internality", determined by the fact of being between the steep slopes of the city. There are two peaks, two different landscape conditions in the background, with different morphologies (Mount Tomorri on one side and Shpiragu on the other). Significant in this regard is the myth of the Osumi's River birth. According to a popular legend, it was originated from the tears shed by Berat, a girl contended between two giants (the two facing mountains Tomorri and Shpiragu), and petrified in the form of the city. This story highlights

2 http://competitions.planifikimi.gov.al/beratisland/

3 Team 7- UNLAB-OPENFABRIC-CoRDA; A&I Design-Marialaura Polignano-UFG Research-ARKE' Ingegneria.

Berat's landscape forms, and interprets them by giving them human characteristics.

Nowadays Osumi Island and the city of Berat constitute two different entities without any relation: the first is a changing and dynamic landscape, whose natural forms are defined by the interaction between the waters of the river and the ground; the second is the artificial urban settlement, with its "solid" and static forms, composed of several parts.

The principal aim of the projects is the formal and/or physical connection of these two entities, so that they can become complementary and benefit from each other. Nevertheless, it is necessary to recognize and consider their different characteristics, above all those of the island, in order to institute an appropriate relation between them.

The Albanian landscape is strongly characterized by natural and human aquatic resources given by its dense hydrographic network, which is composed of streams, rivers and water basins. This gives rise to variable landscapes, according to the water availability. In the different seasons of the year, lakes can become rivers and rivers can be streams. Consequently, the landscape does not have a "still" form, but needs to be interpreted according to its mutable characteristics.

This is particularly true for some areas, as the Berat riverfront, which is subject to these 'mutations'. The strip of land where the projects are located cannot be considered as a real island, but instead an outcropping part of the shore, which is sandy in the lower areas (which are in direct contact with water), and covered by vegetation in the central higher area.

Enhancing the values of the physical integrity of the territory and the preservation of natural cycles, the projects aim to build a resilient landscape, safeguarding the changing structure that the river has in the different seasons (due to different flow rates) or in relation to weather events, leaving its bed free to expand or shrink.

The Osumi River basin is a morphologically active natural ecosystem, characterized by its rich flora and different habitats, from constantly submerged areas, moving on to areas subject to flooding, and ending in areas that are always above water level.

The landscape design started from these considerations and interpreted the different ground and water forms of the Osumi Island according to different vegetation forms.

The projects assign to the flora an important role for the identification of the different landscape forms of the island and deals with two different fundamental types of plants: those of a strictly aquatic nature living in or on the riverbed, and riparian vegetation growing along the banks. The riparian vegetation works as a filter and therefore plays a key role in the purification of the water. Roots preserve the riverbanks from erosion caused by flowing water. The sandy margins of the island will be naturally stabilized using aquatic plants.

However, it is necessary to define the edge of the river on the city side through riverbank masonry works, to protect Berat from the risk of flooding.

CORDA Project

"Lifelines between Memory and Transformation" is the name of the project developed by a joint group of architects, urban designers, environmental engineers, landscape architects, etc. The way the winning project approached an island, was not as a fragmented part of a territory, but rather as a particle of a larger organism, being the river. Osumi Island is dependent on the river, which in the end it is this natural entity that gives shape, form, and life to a part of land that exists only because of the ever-changing water levels of Osumi River. Being in a context that features a UNESCO World Heritage site, the project tries to create a synergy between the built environment and the river, the main natural system in the area.

The main objectives of the project are to have a comprehensive management of water, enabling flood insurance, and enhancing the city of Berat towards a long-term and sustainable growth into not only living close to the water, but also living with the water. Several parts make up this simple, yet composite project, which features a bridge, new open public spaces, a natural pool, etc.

Besides focusing on new architectural and urban structures and areas, the team created a toolbox that enables the longevity of the city and its surrounding natural areas as well as that of the newly proposed interventions. Measures for a larger waterbed, together with slope stabilization and erosion control, are two of the most important particles that make

up this toolbox. New plants, such as shrubs, trees, and other purifying vegetation help to consolidate the areas, control erosion, and provide an enriched natural environment. The project also gives measures regarding the new constructions in the area, which should be built on safe areas and be provided with an adequate infrastructure to serve the needs of the citizens and provide with the needed urbanities.

Therefore, the winning project deploys a strategy that is based on different programs including not only infrastructure, but also defensive and proactive measures against floods, droughts, unsecured water runoff, erosion, etc. All the measures are supported by a soft infrastructure as mentioned above, that not only enables a better functioning system, but also enriches the natural environment.

UFG Group-POLIBA Project

The architectural heritage of Berat is given by the presence of castle, historic neighbourhoods, and architectural monuments, in some cases visually linked to each other by virtue of the landscape morphology, nevertheless physically disconnected.

An "inhabited bridge" wants to bridge this gap, physically and formally connecting the two opposite sides of the city. The project aims both at defining new visual and spatial links at the town level, and at establishing relevant relationships with the island form, the nature of its ground and vegetation.

Variability and mutability of the river does not make it possible to give to the riverfront and banks of the island a fixed architectural form; therefore, to establish a meaningful relationship with the landscape of water the project adopts a wooden transversal crossing system lifted off the ground, which does not depend on the natural landscape forms.

The strategy of the so-called "inhabited bridge" introduces not only the possibility to connect the two riversides of the city, but also to build new places where to contemplate the landscape, as well as to strengthen the presence of water in the public spaces system.

The "inhabited bridge" connects the city's riverbank to the opposite mountain shore. It allows standing above water and nature but at the same time, to reach emerged areas in the river basin, and to use the adjacent equipment.

The "inhabited bridge" and "pavilions" system marks the island gravity center, where the bridge branches. This architectural system is the preferential place to observe the space of the 'territorial room', a device to observe the landscape through the actions of "walking through" and "stop over". Walking through the bridge, the gaze is directed to the city backdrop and, on the contrary, of the hill; stopping over loggias and galleries we sight the river, which is closed at opposite ends by Tomorri and Shpiragu mountains. The bridge and annexes pavilions are, at the same time, open but confined places, according to the Albanian architectural tradition (as in the case of the *çardak*). They can host a number of functions: from local products trading (bazaar), to convivial activities (celebration hall, dance hall, restaurants). Their function can vary during the day, during the seasons and according to the water level.

The construction system based on piles is constituted by a sequential order of vertical wooden elements supporting walkways, stairs and ramps, which ensure the visual and spatial continuity between inside and outside. This type of construction is in continuity with traditional Albanians buildings and housing along rivers and lakes, by establishing a sustainable relationship with nature and local characteristics.

The riverbank is the element that protects the city from the water. In the project, it has the value of limit between city and nature, which here is mediated by the presence of the existing garden along the shore. The stone riverbank was designed as a 'stone beach' made of large steps connecting the city to the river level, along with a large auditorium and a podium-building close to the existing bridge, which is home to small pools and a spa.

Conclusion

Berat shows the ability of nature to become a significant part, in a city made "by parts". Contemporary design can interpret this fragmentary condition, enhancing the pieces of

nature present in the compact city and on its edges.

The contemporary common desire to accommodate "green" spaces within the heart of the city is a righteous desire, as well as a necessity in relation to the climatic questions. However, the risk is to "domesticate" the nature, according to the current models that conceive it as "green" space pertaining to the buildings, giving it the character of "urban garden". Together with this kind of spaces, the contemporary city needs to accommodate open wide natural spaces, characterized by their physical forms: empty spaces from which is possible to look at the city, places whose identity is founded on its closeness to the city itself.

Figure 1. Figure 1. Urban form and morphology of the ground.
Longitudinal section and schematic plan of the historic city of Berat, extracted from Pashako, F. (2012) 'Albanian traditional domestic architecture XVI-XIX century. Recognition of settlement and construction principles of the house of Berat for a contemporary composition code', unpublished PhD thesis, Politecnico di Bari.

Figure 2. The Ottoman City.
Above, profile of the Magalem district, extracted from Epifani, M., Greco, S., Iacca, T. R., Lunanova, D., Padula, R., Pappagallo, M. M. (2009) 'Architettura domestica in area mediterranea. La casa albanese: caratteri spaziali e principi aggregativi. Ipotesi di riqualificazione del tessuto urbano di Berat', Master Degree Workshop, CdLM Architettura, Politecnico di Bari, a.y. 2008-09, Relator: A. B. Menghini; Tutor: F. Pashako. Below, image of the Castle and town of Berát, from Lear, E. (1851) *Journals of a Landscape Painter in Albania etc.* (Richard Bentley, London).

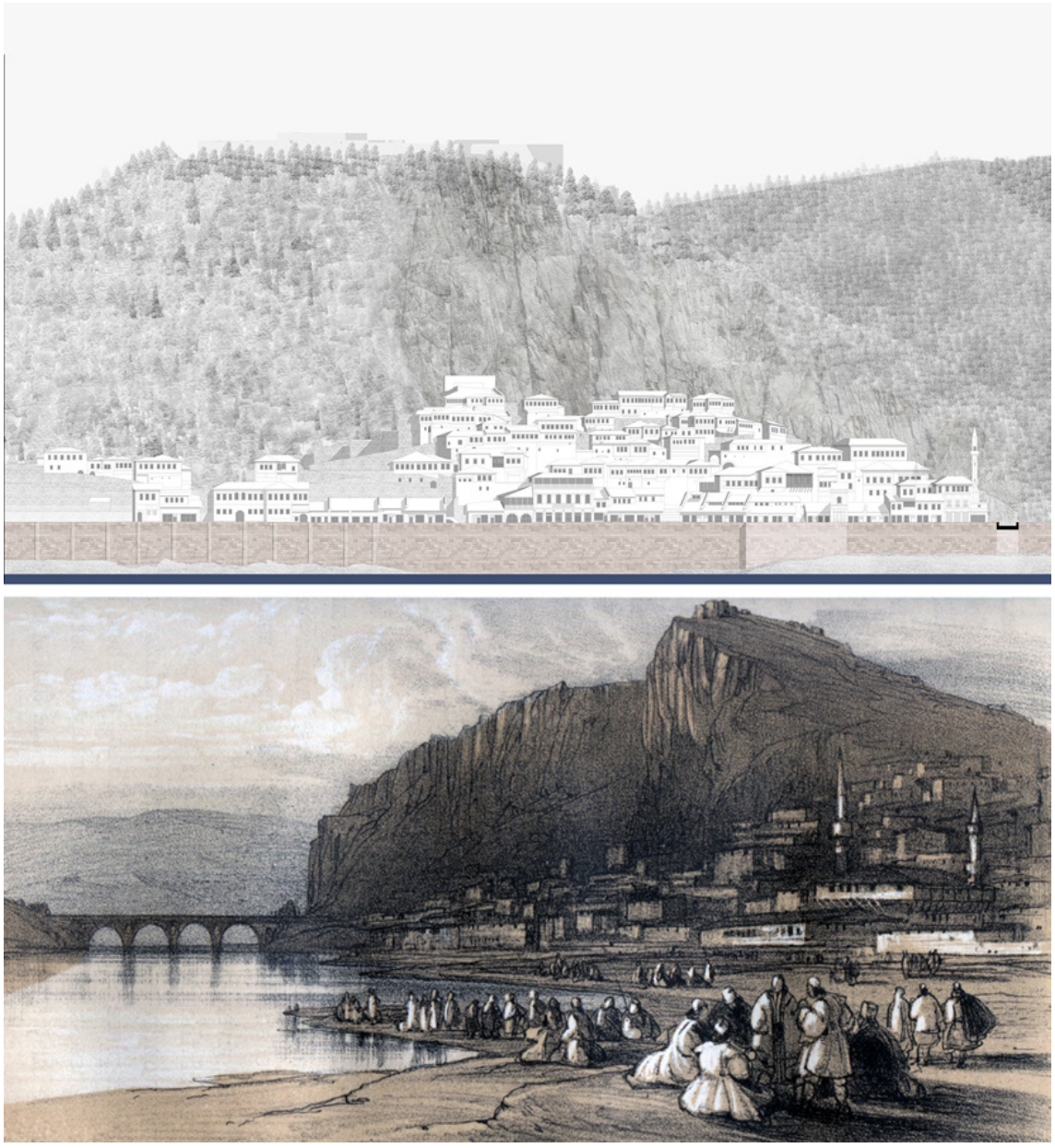


Figure 3. The "Italian" City.
Above, the Regulatory Plan of city of Berat: zooning plan. Below, urban development view from the Castle. Both figures are elaborated in 1942 by the UCEUA, original from Arkivi Qendror Teknik i Ndertimit - AQTN, Tirana.

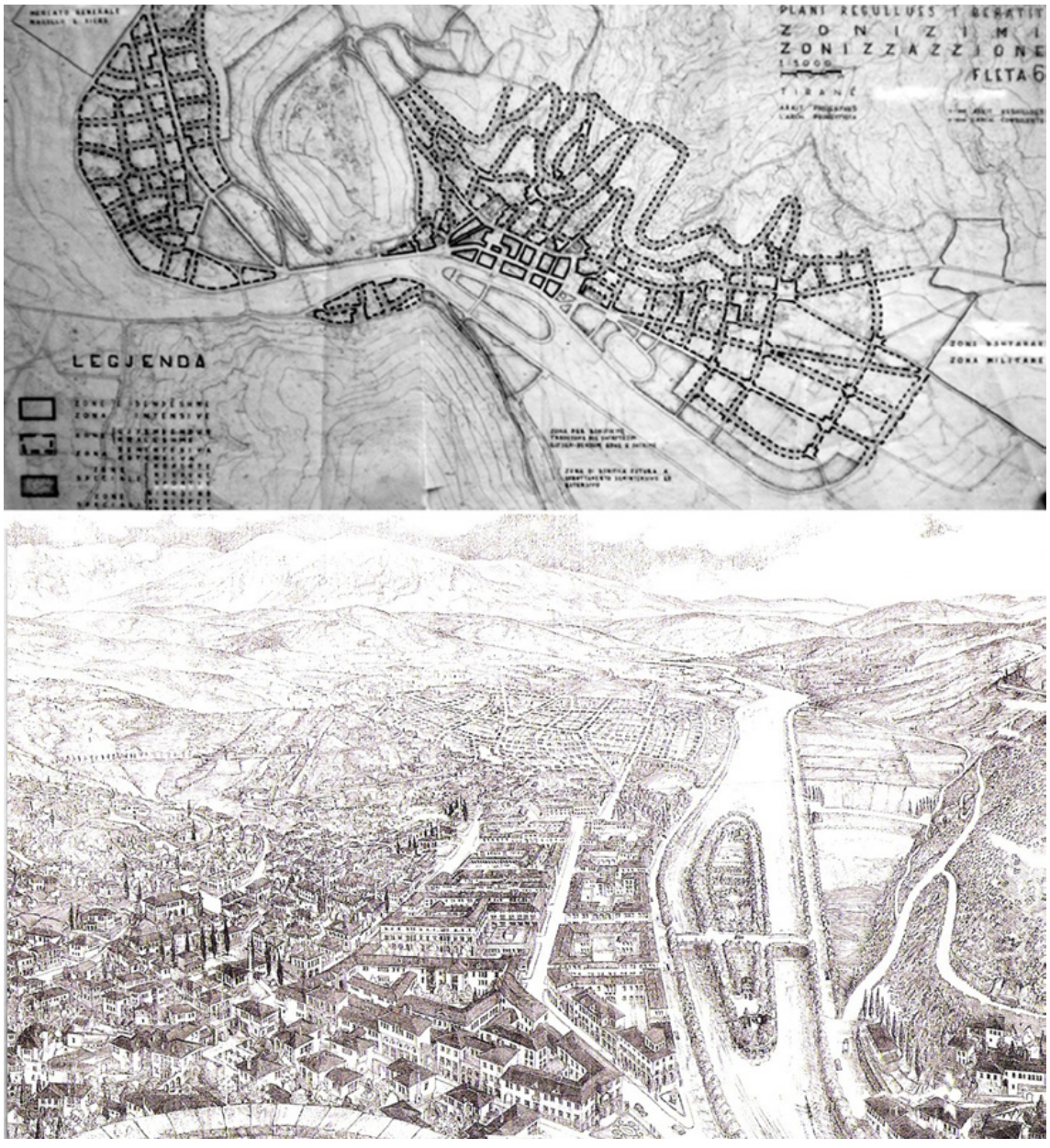
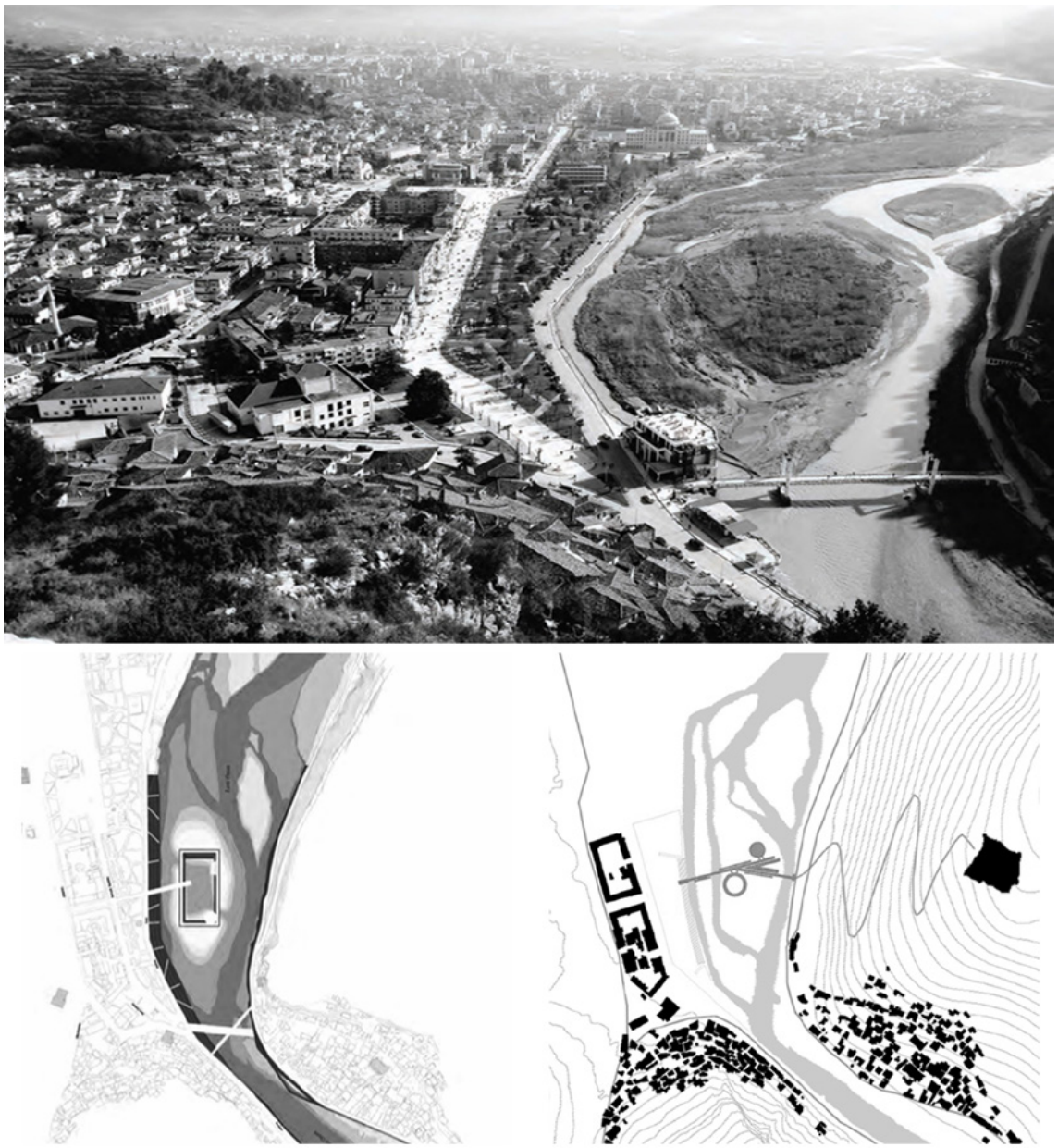


Figure 4. The Contemporary City-Nature.
Above, the island of Berat in 2015, from AKPT (2015) "International Urban Design Competition *Research by design: exploring resilient ways of 'Urban by Nature' Osumi Island in Berat*", Albania, No. 4. Below, on the left the project of Team 7- UNLAB-OPENFABRIC-CoRDA; on the right, the project of A&I Design-Marialaura Polignano-UFG Research-ARKE' Ingegneria.



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Paradigms of the 'Geographical City'

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The city "as an organism in the making in constant transformation" is the thread of the research developed in the city-landscape of Liège, where tissue morphology bears the traces of events, economic and social relations, mental and physical, which require new readings. The invisibility and the contemporary ignorance of the "morphological conditions" of the thick territory of Liège call for an urgent questioning of the practices of reading and interpretation of places to apply methods corresponding to the concept of operating history. This contribution deals with the opposition "city-countryside".

It is a duality questioning Belgian cities cyclically. Indeed, urban diffusion, as well as the quest for an ideal "countryside", are phenomena to be analysed in greater depth, by applying morphological reading methods based on geomorphological characters, reasons and intelligences, human settlements and evolutions that this system of elements makes it possible to identify and understand in time. By questioning readings, we note the lack of in-depth knowledge of morphological urban and landscape dynamics.

Returning to the interpretative reading, means to review the duality and to understand the countryside's demand. By reading specific sites, we want to deal with the persistent fragile relationship in contemporary territories, where the illegibility is the result of the loss of morphological knowledge. By reinterpreting the fictional opposition "city-countryside" as a dialectical relationship between tensions (material/immaterial, physical/mental) we understand that city is rarely the result of erasure.

This is more the visible part of an operation of overlapping or of a deeper transformation of urban and landscape components: dynamics always responding to cultural and technical objectives of people operating in the territory. These contexts show the effects of the loss of in-depth morphological knowledges. Putting into question readings means to restore lost knowledge, opening action's perspectives, reconciling city and countryside, nature and architecture.

Cities and Territories: crisis and possibilities

Looking at the long standing historical experience it is possible to observe a spontaneous still deep and durable relationship between the ancient cities and the natural territories they settled on: all the civilizations of the Ancient World chose the places to inhabit according to the recognition of specific geological and geomorphological values. Furthermore, river bends, bays and gulfs (suitable for shelter), hilltops and cliffs (capable of providing natural defense), plateaus and flat lands (for agriculture) – which are all geographic elements – have been of great importance for the definition of the settlement principles of each of our traditional or historical cities, for the morphological principles that define the structure of each part of those cities, and for the designation of the spatial characters of their urban places (public and private ones).

But, in contrast to what happened throughout history, nowadays, the huge expansion of contemporary cities has led to the radical transformation of the structural configurations and of the spatial conditions that identify contemporary urban forms and places.

In the last century the expansion of human settlements has reached extremely high rates, hence strongly affecting the validity of the conception of the city itself (in the traditional way it has been interpreted until now), and also of its cognitive and design paradigms.

This condition has principally led to the recognition of a critical moment in the relationship between natural and human environments, between cities and countryside. In fact, expanding along infrastructural routes, man-made settlements have absorbed sectors of uncontaminated nature and cultivated fields, making it difficult to distinguish what is urban from what is rural.

The city has multiplied through the processes of dismantling, delocalization and re-
 localization to the point of "*exploding*" (Mumford, 1957) into many scattered fragments throughout the territory.

Driving along the ring roads of the major European metropolises, crossing the urban conurbations of smaller settlements, or even wandering around the majority of our immense suburbs, it feels like being in the city, yet at the same time it seems like not being there at all.

In this respect, it is true, as Cacciari (2004) affirms, that the model western cities follow is the roman *civitas augenscens* - the city that continuously growths - and therefore the fate of *delirium* (from the Latin, to go beyond the *lira*, the *limes*, its own borders) is already implicitly inscribed in this model since its origins. Yet still, it is also true that in the last fifty years (in a variable way in comparison to the different geo-political and geo-economic contexts) this expansion has reached extremely high rates, hence strongly affecting the validity of the model itself, its cognitive and design paradigms and even the underlying idea of the city.

Galimberti (2009), citing Hegel (1812-1816), said that when a phenomenon grows considerably from a quantitative point of view, there is not only an increase in quantity, but there is also a radical qualitative variation.

The change in the scale of human settlements has in fact coincided with a wider and more profound transformation that has affected both the structural organization of urbanized territories and the spatial conditions that identify the characters of urbanization.

In light of recognizing these changes in urban structural and spatial qualities, new paradigms capable of investigating the new relationships between urban and geographical forms urgently need to be identified, in order to research in these new relationships, the possible values on which to lay out new city models.

Urban Design and Physical Geography I: Italian experiences in the second half of 20th century

In Italy, as far back as the late 1950s, these themes have been the object of interest and therefore have produced a field of numerous investigative researches within differing disciplines (such as architecture, urbanism and physical geography). These studies reveal the presence of a common *leitmotiv* that runs through the theoretical research and the design experiences conducted over a thirty-year period by a large number of architects (from Muratori to Renna, Daneri to Gregotti, Renna and Grassi, passing onto De Carlo, Gabetti & Isola), geographers (Dematteis, Farinelli), as well as urbanists (Lanzani, Secchi, Viganò). This

phenomenon represents the great value recognized by Italian culture in the relationship between the forms of orography and the forms of the city, between physical geography, spatial planning and urban planning.

In particular, within the architectural culture there are numerous theoretical and design experiences that can define the presence of a collective design effort aimed at investigating new relationships between urban and natural forms (AA.VV., 1991).

In order to study a corpus of works and researches that is very rich and complex, which is impossible to categorize or classify in a univocal way for its heterogeneous diversity, I think that is possible to identify two opposing attitudes, which can be considered as two poles within which to place the experiences conducted by the cited Italian architects, measuring them with respect to their proximity or distance from these extremes.

On the one hand, there are some projects and experiences that generate the urban forms following the principle of "*adaptation*" to the natural forms (AA.VV., 1991): the interpretation of the aesthetical features of natural places - of geographical forms - is the founding moment of the urban project. It is the case, for example, of the projects developed by Saverio Muratori for the Ina-Casa districts Magliana I and II, or for the Barene di San Giuliano; or also it is the case of the projects conducted, thirty years later, by Agostino Renna for Monteruscello and Teora. These architects research a '*principle of correspondence*' between architecture and nature, which is based on the concept of '*organism*': urban design discipline discovers its geographical origin, and the new settlements are intended as elements of a larger territorial organism.

On the other hand, there are some projects that seem to base the relationship between urban and geographical forms on a dialectic based on the "*contrast*" (AA.VV., 1991). Entrusting the task of building the city to the iconic forms of big architectures, these theories seem to make a leap in scale with respect to the previous ones, which concerns the entire design methodology, the grammars and the syntax adopted by the project, and also the poetics underlying the compositional processes. This is the case, for example, of the project elaborated by Daneri, the "big snake" of Forte Quezzi, Genoa, or the different projects developed by Gregotti and Purini, including those for the University of Florence, for the University of Calabria near Cosenza and for the plan of a new popular residential district in Cefalù. The '*bigness*' meets, or rather clashes with the '*wilderness*'. It is a world of forms completely different from the previous one, in which there are strong references to the Le Corbusier's experiences, and there is a new fascination linked to the recognition of the possible beauty hidden in the technical forms of the territorial infrastructures (bridges, dams, canals, etc.).

Moreover, between these two extreme poles it is also possible to find many other design experiences that incline, from time to time, toward the former or the latter attitude, sometimes adopting them both according to different measures and ways. Among these architects stands, for example, the figures of Giancarlo De Carlo (with its projects for Urbino) and Gabetti & Isola (with their projects for some residential districts in Val d'Aosta and in Sardinia, and with their residential "*crescents*").

However, in respect with this introductive classification, I have decided to focus this research on the first group of experiences, with the intent to subsequently develop the other mentioned experiences.

In Italy, this approach based on the 'adaptation' of the urban forms to the natural forms of the earth surface is born within the school of urban morphology and building typology. This school has already tried, on several occasions and in various ways, to define the syntax of urban construction in relation to the forms of the orography, recognizing and exalting the peculiarity and the topological characters of the natural substrate.

Saverio Muratori (and his students Gianfranco Caniggia, Paolo Maretto, the Bollati brothers, Alessandro Giannini, etc.) foresees the possibility of recognizing in the orography of the territory itself some formal properties for laying out the new basis of the urban design discipline. He identifies geomorphological structures as systems characterized by specific syntactic relationships (which will influence the choice of settlement principles) and geographical elements as forms characterized by particular spatial qualities (which will influence the definition of urban characters).

However, in these studies, the historical city was the main object of these analytical studies: the analysis of building typologies, their repetition to conform the parts of the city, their variations and stratifications allowed to identify some general rules for the urban design discipline.

In the meantime, at the end of the 60s, the passage from the condition of the European historical city to the contemporary city-territory was beginning to be real and tangible. Therefore, a new generation tried to

draw close to these 'geographical' studies conducted by the Italian school of urban design, although they tried to face with the new phenomena that characterized the "*city in extension*" (Samonà, 1976). In their researches, they assumed the structural, dimensional and spatial problems of the newborn idea of a *city-territory* (a whole anthropogeographic organism).

Furthermore, this second generation focused more closely on the methods concerning the interpretation of the territorial forms, trying to elaborate new methods of representation able to put together the two formal worlds of Architecture and of Physical Geography, in order to 'shape' the landscape as a whole (Norberg-Schulz, 1966).

Agostino Renna was one of the protagonists of this debate on disciplinary renewal that affected the period between the Sixties and Eighties (Capozzi, Nunziante, Orfeo, 2016). He recognized the possible generative value of geographical forms in relation to the urban design process and instruments; the main objective of all his research seems to have been the elaboration of a method for representing these forms, in such a way as to reveal their spatial qualities and to express the structural bonds between them, and in order to assume them as founding principles for the urban project.

Moreover, the evidence of such insights was incorporated in some of the projects that Saverio Muratori and Agostino Renna have been working on since the 1950s and 1980s like, for example, the projects for the Magliana district in Rome or the projects for the Barene di San Giuliano district in Mestre (Venice) by Muratori, and the projects for the reconstruction of Teora and the new town of Monteruscello, by Renna.

Urban design and Physical geography II: Magliana (Roma) and Monteruscello (Pozzuoli)

Methodology of analysis

The principal goal of the analysis is to investigate the 'correspondence relationships' between the formal structure of the territories and the settlement principles, namely the 'generative value' that can be recognized in the natural forms with respect to the structuring process of the urban morphology. In other words, the aim of the presented drawing is to identify the interpretative processes through which Muratori and Renna determined layouts and guidelines, geometries and measures of the urban project on the basis of the recognition of the geo-morphological qualities owned by the orographic substrate itself.

Through the analysis, it is possible to describe these projects adopting three different dimensional scales: the scale of the settlements, the scale of the urban patterns, and the scale of the urban elements. Each of these three scales illustrates some specific problems addressed during the design process and it is useful to control some particular compositional questions. Firstly, the definition of the settlement principles, namely the designation of the "structure of the form", which is, according to De Carlo (Bisogni & Renna, 1974), "the main framework that serves as a compositional plot for the more indeterminate and diffuse texture of the smaller formal expressions". Then, the definition of the "form of the structure", namely "the materialization in physical terms of the spatial organization parameters that give structure to the urban agglomerations" (Bisogni & Renna, 1974). Finally, the definition of the spatial characters of the urban elements and hence the typo-morphological characters in relation to the form of orographic substrate and to the panoramic views.

The hill city & the valley-floor city | Projects for Magliana district in Rome

The projects for Ina-Casa district in the Magliana area (Rome) - the *hill-project* and the

valley floor-project - deal with two different conditions of physical substratum - the *hills* and the *river bend* - to which correspond two different parts of the city, which are separated by a natural range consisting in hill slopes.

The valley floor sector, located on predominantly flat ground, is measured by the sinuous shape of the river bend, and is shaped like a homogeneous system (albeit divided into five sub-units) with a radial structure.

The ridge district is measured by the corrugated shapes of the hilly structure, configured as a set of urban elements placed in conspicuous points of the territory. These elements define each other by volumetric relationships within a discontinuous structure that is 'supported' by the peculiar orographic shapes of the hilly system.

According to geographical criteria, Muratori distinguishes and separates two different types of settlement, and then he constructs the specificity of each of them in relation to the orographic forms.

Specifically, the projects for the expansion of the Ina-Casa Magliana district acquire a special relevance to this subject for the experimental nature that the experience takes on: the wide range of versions developed during the design process clarifies the adopted method, the choice of the settlement principles, the definition of the measures, and the syntactical bonds between the elements.

In the different versions of the project for the hill quarter, the composition of urban elements (squares, streets, blocks, public buildings) looks for a harmony with the elements of natural landscape (mountain pass, hill ridges, valley floor, plateaux).

Moreover, Muratori arranges the collective spaces, representative of public life and of the identity of the entire community, in substantial areas of the territory (the saddle between the hills and the rounded uplands), because of their formal qualities.

The saddle is the point of convergence of the streets positioned on the ridges, the focal point of the settlement, and for this reason, according to the design assumptions, it becomes a public park or a big urban square. The circular uplands, on the other hand, present themselves as relevant points of the territory, because of their punctual nature and of their altitude. Muratori choses them as sites for isolated public buildings, because they are easily identifiable at great distances and in turn to provide panoramic views.

In addition to searching for structural bonds, Muratori articulates and shapes also each of the individual urban elements (street, square, monument, urban fabric) in correlation with the geographic elements that constitute the topography of the site (hill ridge, plateau, uplands, hill saddle, valley, slope) in order to create different types of urban spaces. Within this dialectic, Saverio Muratori takes advantage of the long-shaped hill ridge to build long perspectival streets, enclosed by two facades of residential buildings. They are not parallel to each other and the pillars of the porticos, in the ground floor, articulate them. By acting in this way, Muratori can define a machine capable to channel the open landscape of Tiber river valley inside the new settlement (Palmieri, 2013).

The slopes of the ridges correspond to the comb systems built by the repetition of courtyard buildings, which are orthogonal to the axis of the ridge and define their dimension in order to follow the shape of the contour lines. In some variants of the project, parallel blocks or courtyard residential buildings are located on the hillsides, between the ridges. They are placed orthogonal to the ridge line and define their own dimension following the contour of the land. Sometimes, the courtyards are open to the landscape; sometimes they are closed and introverted with an inner character.

Moreover, in some projects, the courtyard buildings are placed on basements and establish their relationship with the surrounding nature through the definition of a vantage watching point of the landscape, as a place for "looking at the nature". Other times, the buildings rest directly on the ground, and allow not only a visual, but also a deliberately spatial continuity. In this case, the space of the courtyard between the buildings is connoted by the presence of the vegetation, as a place for "walking in the nature".

Furthermore, the experimentation of the residential buildings types, in the different versions of the project, seems have the purpose of defining different spatial characters that define themselves in relation to the places that they overlook[4]. The relationship with the territory generates, once again, the character of architecture.

The foothill city | Projects for the 'new town' of Monteruscello in Pozzuoli (Naples)

The construction of Monteruscello, the last Italian new town of the XX century, was necessary because of the bradiseismic crisis that struck the city of Pozzuoli in 1983. As well as having to deal with the great civic engagement related to the state of housing emergency and with the complex issues raised by the need to transfer a significant part of a seaside town in the inland countryside, Pozzuoli also had to address the questions concerning its definitive transformation into a linear conurbation of small towns from the sea to

the inland countryside.

The new settlement, with its 24.000 inhabitants, spreads on the narrow and steep slopes of the craters of Campi Flegrei, opening up to the interior plains of Caserta. It is divided into four distinct morphological units, with a dimension that is similar to that of the typical inhabited centres of this area: the top of the slope is the central core of the village; further down on the valley floor, the commercial area is developed because this place is easily connected to the infrastructure system; finally, the University district and the industrial zone lie on the other side of the railway, which is positioned in the rut defined by the narrow valley.

Renna defined the design of the central core in greater detail, because, as for the ancient cities, it should have represented the whole identity of the new settlement; while he defined only the volumetric composition of the other urban parts of Monteruscello.

The district of the 'old town' is built on the higher part of the slopes. Here, the incline of the hill side softens progressively in the downstream direction, towards the plain characterized by the geometric forms of the Roman centuriatio. In addition, the slope is characterized by a discontinuous form, by a 'jagged form', obtained through the progressive sedimentation of the lava flows that have shaped the hillsides as a succession of 'natural ledges'.

Although this territory is not morphologically articulated but characterized by a homogeneous form, it is still possible to recognize a certain topological order in its geomorphological structure, which correspond to a geometric order in the structure of the new settlement.

In fact, the geometric homogeneity of the urban grid corresponds to the topological homogeneity of the shapes of the slope. In addition, urban grid and hillside are not only conceived as elements, but they can also be considered as sets of forms, homogeneous in their totality, but mutable and flexible

by means of the alteration or deformation of their constituent elements: the ledges and the blocks.

In fact, at the intermediate scale of the urban agglomeration, the depth of the terraces corresponds to the depth of the 'staircase' that defines the shape of the slope. Therefore, the discontinuous conformation of the hillside, articulated by the irregular succession of the 'ledges', is resolved through the alteration

of the elements that make up the urban grid itself, namely the blocks, the 'terraced insulae'.

At the scale of urban elements, the relation with the territorial forms is given by the fact that the classification of building typologies takes into account the spatial relationships that architectures establish with the surrounding environment (closed courtyard buildings, open courtyard buildings, isolated

buildings with courtyard) (Lucci, 2016).

Moreover, Renna explores new possibilities for the open or closed courtyard buildings, which derive from the Neapolitan tradition, through the variation of the relationship between the building and the ground. In this way, the relationship between urban morphology and building typology is further enriched by its relationship with the forms of the orography.

Finally, the organic nature of the system is ensured (in addition of its strong multi-scale structure) by the presence of nodal elements, namely by the system of public spaces, which keeps together the parts and confers unit to the whole, by creating a concatenating effect in the structure.

Downstream, the building that contains the high schools defines the boundary of the 'old town', and configures itself as a big inhabited wall, while the central collective places are structured along a street-square, placed exactly in the middle of the district and arranged

parallel to the contour lines. It is delimited

by a *stoà* and ended by a polar building (the Mother Church). The civic square is placed in the midpoint of this linear system, adjacent to the street-square.

It is arranged orthogonally with respect to the slope and built on a podium that overlook toward the vast interior plain.

Conclusion. New paradigms of the '*Geographical City*'

The comparison between the projects for Magliana and Monteruscello allow us to recognize a general value in the formal and spatial qualities of the landscape and in the possible ways in which architecture could interact with them.

Secondly, each of the two projects lies on different territories, and therefore, despite their apparent similarity concerning the theme of the relationship with the natural forms, they present clear dissimilarities towards the compositional instruments assumed in the structuring process of the urban form. The analogies and differences that can be identified between these projects underline that the 'formal vocations' contained in the geographical features of the territories suggest the assumption of different strategies in the structuring process of the new settlements.

Finally, it is possible to say that the beauty of these projects is based on several insights, which determine the new paradigm of the '*geographical city*':

- the city-territory, composed of fragments, of distinct quarters, could build its own structure in relation to the forms of the physical geography;
- the individual parts of the city can develop their autonomy through the dialectic between their finite nature and the continuity of the natural soil - "*the city as an archipelago*" (Ungers & Koolhaas, 1977). In this way, the different quarters could participate in the urban relationships and could contribute to determine the new pluralistic identity of the city;
- the geometries, the arrangements, but also the dimensions of urban parts, elements and spaces can be defined in relation with the forms and the measures of the geographical elements; and this means also that it is possible to find a deep harmony between human scale and territorial one;
- new spatial qualities of urban places can be enhanced through the dialogue with the shape of the ground;
- the type-morphological characters that distinguish them can be defined in relation to the shape of the ground.

Starting from these insights and re-adopting the idea of a strong relationship between architecture and geography, these projects developed different strategies in order to give new settlements a strong identity and a suggestive character. They uncover a clear formal vocation already contained in the geomorphology and, in this way, they conform new quarters that can enhance the original characters of the natural places. (Moccia, 2015).

Figure 1. Magliana.

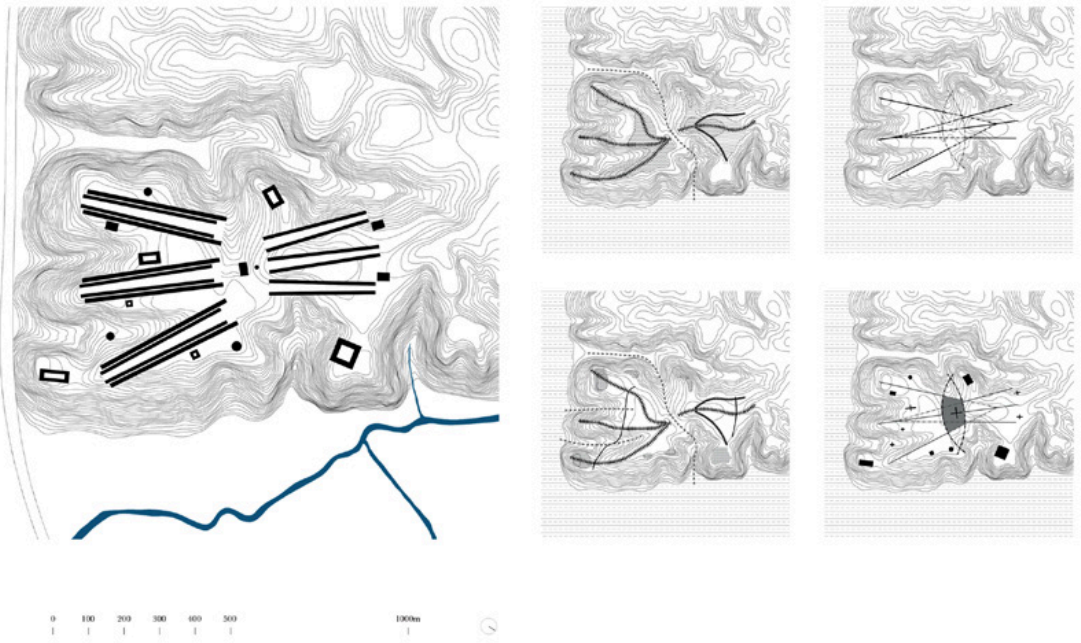

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Figure 2. Monteruscello.

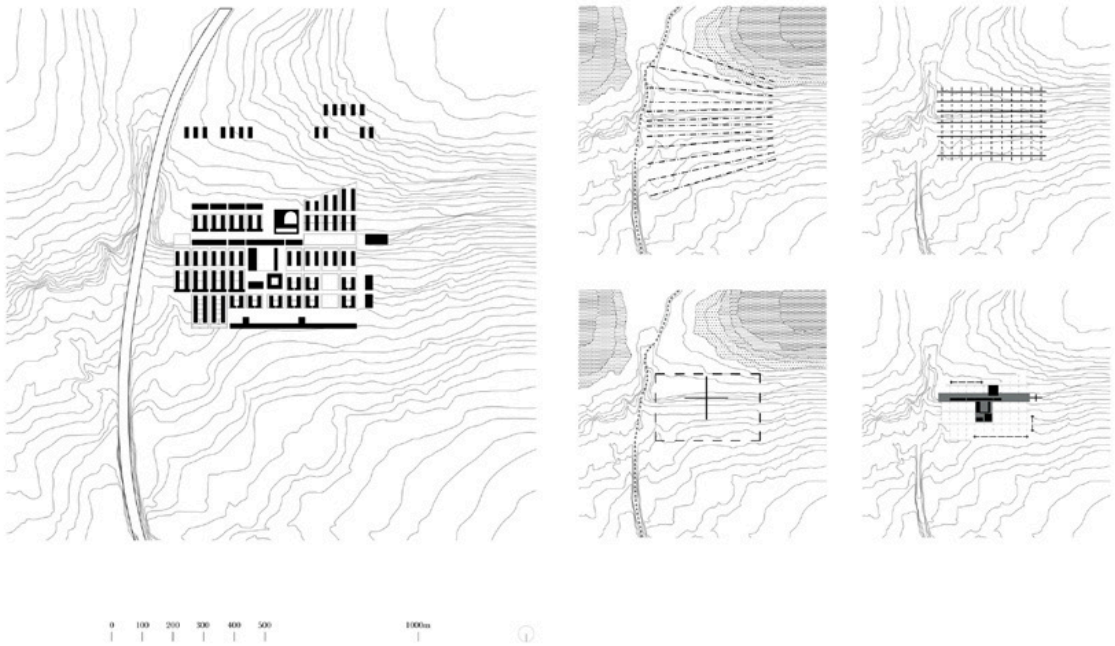


Figure 3. Magliana prospettive.

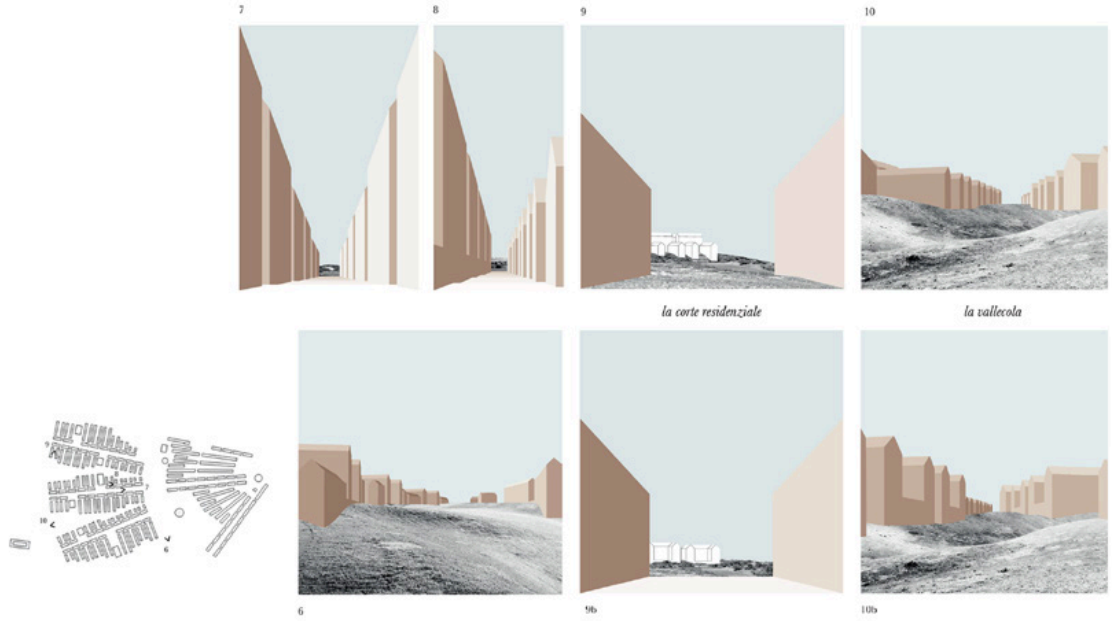
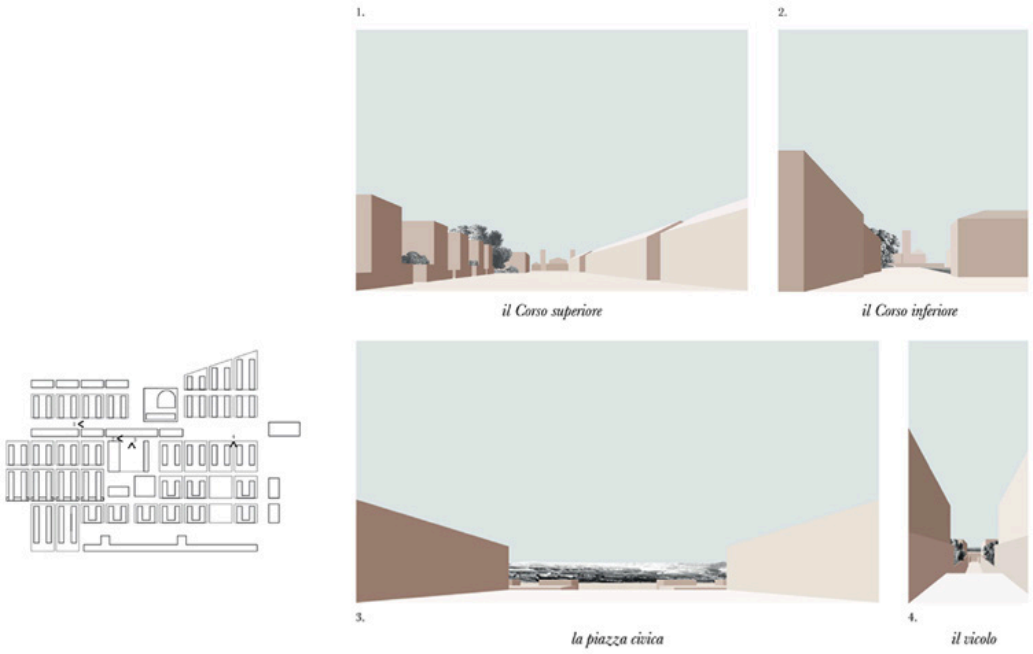


Figure 4. Monteruscello prospettive.



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Rural identity in the making. Architectural and urban design between city and nature

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In his vision of the infinite city, Massimo Cacciari describes a process by which the city, in its metropolitan development, radiates from its center, overwhelming every ancient pre-existence and involving a sort of spatial crisis (Cacciari 2004). Within the expansion areas of the city, the urban project is called to shape this crisis, answering to contradictory questions (Cacciari 2009) posed by the relationship between city and nature.

In this sense, the rural landscapes of urban fringe are places in the making, characterized by the constant, changing correlation between city and nature, between architectural construction and open spaces' use and design. The interpretation of this relationship makes it possible to think about the sense of rural identity in the contemporary city and to shape it through the tools of design's coherence as suggested by Luigi Cosenza in the 17 points on rural architecture. In this framework, an interesting case study is the hill area of San Rocco, north of Naples, a peri-urban agricultural fringe between a land incision and the dense fabric of the historical center. The area has preserved a predominantly agricultural identity with cultivated open spaces and farms. Current indications of transformation for this area suggest the re-interpretation of its rural identity through the design of an agricultural park and a small settlement of rural houses.

The purpose of this work is the interpretation of the morphology in the making of this area through its design, giving voice to different phases of the same process and working on the multifaceted possibilities of connection between permanence and change, in a compatible way with its rural identity (Ricoeur 1991).

Introduction

Between city and nature there is an intermediate field, a fringe of rural territory where the horizontal dimension of the void prevails. But over time what defines the character of this emptiness changes. On the one hand, the presence of collective facilities and infrastructures grows; on the other, the rural character linked to a form of self-sustainable economy and to a way of building and inhabiting the landscape in relation to its use, goes dispersing.

Today these spaces are interposed between the peripheral areas, the territorial reference nodes and the dense historical fabric of the cities. Their form, once mainly built through the local dimension of man's work in the fields and its way of inhabiting the cultivated territory, is now designed and measured by the big dimension of territorial signs and architectures.

Therefore these rural fringes are areas of crisis on the edge and at the same time central areas of reconnection of the city in extension which suffer from a space crisis due to the modification of their original identity. They no longer have an identity that is clearly attributable to the traditional rural landscape, but an identity in the making, a multiple identity to be interpreted and shaped through the urban and architectural project.

By re-tracing the physical signs and recovering the deeper meaning of these cultivated spaces, but also intercepting the new functional and meaningful needs of the city in progress, the project relates a before and an after of the shape of the city by examining the case of area of the San Rocco valley in Naples. In particular, the rural peri-urban areas offers the opportunity to rethink the therapeutic role and care of agriculture, intended as an instrument for the recovery of physical, psychological, social and environmental health.

As a device for urban care, here agriculture is understood as the leading theme for the construction of large open spaces of territorial connection, not focusing instead on the most widespread and current trends in acupuncture actions and the in sprawl of urban gardens. Thus the rural space becomes the site of the design of areas, paths and architectures able to set up therapeutic sequences of care both for the recovery of the rural nature of urban fringe and for the improvement of community health.

Rural identity in the extension city

Between city and nature there is a segment of territory characterized by the presence of heterogeneous physical traces, different urban times, divergent scales and conflicting uses. In this part of peri-urban space there are geo-morphological signs related to the agricultural uses, to the infrastructural nature of the water canals, to specific topographical features of the city.

'It is the form that man, in the course and for the purposes of his agricultural productive activities, consciously and systematically imprints on the natural landscape' (Sereni, 1961), a 'huge sediment of efforts' (Cattaneo, 1875) composed of the fields and channels footprints which tell, as in a great book, the history of the generations that have succeeded over time (Reho 1997).Then this palimpsest underwent the impact of the construction of all those elements linked to urban expansion contributing to undermine the shape of the city that 'seems definitively unable to identify appropriate narrations and design interpretations in compliance with the nature of the problems to be solved' (Purini, 2000).

Massimo Cacciari states that 'The modern city, in its metropolitan evolution, radiates from its center, overwhelming every ancient persistence. [...] this expansion becomes more and more occasional, less and less planned and governable. And more the metropolitan nervous network expands, more it devours the surrounding territory, more its spirit seems to be lost' (Cacciari, 2004).

With the definition of 'city in extension', Giuseppe Samonà identifies a part of open territory in which the spaces' discipline was attributed to agricultural processes and human presence and in which there is no nature or countryside, but only a particular form of city, a city in extension. 'If nowadays, the rural-urban dichotomy is in a process of overcoming, it is not for a new territorial concept, but by the extension of the urban area to the whole of the territory' (Corboz, 1985).

Massimo Cacciari (2004) explains that if the city is everywhere, we no longer inhabit cities,

but territories, and he defines the post-metropolitan territory as a geography of events, a framework of connections, starting to identify a structuring potentiality of these spaces in relation to their surrounding context. The geography that designs these territories identifies the theme of its identity in the morphological specialization of the ground (Rispoli, 2013). But to the furrows of the fields, to the textures of the canals and to the topography of the ground, new residential settlement fabrics, large architectures, infrastructural bands have been joined, overlaid or mixed. The territory, as Andrè Corboz recalls, 'is not a datum, but the result of different processes. On the one hand, it changes spontaneously [...], on the other hand, the territory undergoes human intervention' (Corboz, 1985).

The form of this extension city is therefore a form in the making and its identity is a processual identity with dynamic and in progress features, also fragile and permanently provisional (Bauman, 2003). The problem, Paul Ricoeur says (1991), consists in exploring the many-sided possibilities of connection between permanence and change that are compatible with identity. Therefore the city in extension poses questions of correct interpretation and compatible transformation, 'it is subjected to contradictory questions. Overcoming this contradiction is a bad utopia. It is necessary to give it a shape' (Cacciari, 2009).

In these large peri-urban open spaces interposed between the large metropolitan settlements and the smaller urban centers, the territorial rural fragments are a dynamic interface, an area of transition in which urban and rural features dialogue and confront each other. These are large rural open spaces oriented to transformation (Marson, 2008), a project theme among the most fruitful and among the most dense of meaning according to Bernardo Secchi (1989). But Bernardo Secchi himself, in the plans for La Spezia, Ascoli and Bergamo, recognizes as 'agricultural areas, the provisional margin of urban expansion, have never been interpreted by design, or as areas of breath, nor as a recognizable edge of the fabric, neither as an ideal site for equipped green areas, nor simply as free areas useful to reach other areas of the city'(Secchi, 1994).

Yet these peri-urban rural areas have a strong transformative potential that is based on a long tradition of constructive experimentation based on the interweaving of the natural environment, the climatic conditions, the use of the land, the land ownership and the type of farm (Fondi, Franciosa, Pedreschi, Ruocco, 1964) with the aim of building a rural architecture, for residential and productive uses related to the cultivation of the fields. Preserving this type of relationship in the project of these areas is internationally recognized as a desirable transformative approach. In 1999, the city of Wellington, for instance, sets up guidelines for planning in rural areas, with the aim of providing sustainable development of rural life, preserving and enhancing the identity of the territory (Wellington City Council, 2009). In the Italian context, Giuseppe Pagano and Guarniero Daniel dealt with rural architecture with the aim of demonstrating the aesthetic value of its functionality and underlining how 'the relationship between utility, technique, form and aesthetics are not recent inventions, but only recent discoveries originated from an ethical need for clarity and honesty' (Pagano and Daniel, 1936).

This interest was taken up by Luigi Cosenza who formalized it writing the 17 points of rural architecture. 'It is especially in the rural environment that the effort to define the practical value of individual objects and to give them the form most suited to their function' is manifested. He works on the themes of coherence, homogeneity, design balance even within his projects, as in the case of the project for the villa in Positano (Salerno, 1937). But also other architects works in the furrow traced by Cosenza. Bernard Rudofsy realizes, both autonomously and with him, many villas using an archetypical and rural design syntax as can be seen in the project for a house in Procida (Naples, 1935) or in the villa in Frigiliana (Malaga, 1969-71), but also Valerio Olgiati will build the Villa Além in Alentejo (Portugal, 2014) where 'The rural landscape spills into the courtyard in the form of wind, dust, and then pigs and the animals boarding their ark'(Sealy, 2015).

New compatible identities for the rural peri-urban fringe

In his essay Designing, building, taking care, Nicola Emery, recalling the Platonic analogy between city and pasture, the city as a place which leads the growth and nourishes its

inhabitants, highlights the therapeutic horizon belonging to project for the city. 'The project, in other words' - says Emery - 'must be conceived with a therapeutic aspect, it should imply a sort of preventive therapy, something analogous to the right cultivation and proper care of the pasture, whose good condition will affect not a little citizens' health' (Emery, 2010).

Already the German term akerbau combines the act of building and that one of cultivating. These two activities can be associated with another one, that of taking care, as the result of the first two on an open space that can offer itself as a reserve, a refuge, a nourishing pasture which contribute in promoting the health of society.

Indeed the quality of the rural area has a significant impact on the well-being of the population. In the Italian context, the National Institute of Statistics has developed an assessment of the welfare conditions of the population by including rural territories' conditions as indicators for the section Landscape and cultural heritage, and precisely considering the erosion of the rural space from urban dispersion, the erosion of rural space from abandonment and the evaluation of regional rural development programs in relation to landscape protection (National Statistical Institute, 2016).

The concept of health promotion (the process by which people improve control and the direct management of their well-being conditions) can therefore be strongly implemented by preserving a high quality of rural areas. This theme is the basis of the salutogenesis theory (Antonovsky, 1979) which underlines the passage from a vision in which etiology was attributed to hereditary traits, relational problems during the evolutionary phase, microbes and other pathogenic organisms to a perspective in which the behavior and lifestyle of the individual are crucial: the relationship between personal habits, psychological attitude and health clearly emerges. These factors find evident stimuli in the quality, in the form and in the organization of the life spaces and environment which are the active background of the daily activities of the people. Health promotion, a strategy whose importance was underlined starting from the Zagrabia Declaration for the Health Cities of 2008 and up to the Shanghai and then to the Pécs Declaration of 2017, (within the Healthy Cities strategic program of World Health Organization), finds its specific field of experimentation within the rural context of the extension city. The project for the recovery of the peri-urban agricultural territory can therefore develop the themes of prevention, promotion and improvement of the quality of life through the setting up of spaces for the green care including social and therapeutic horticulture, animal assisted interventions, care farming , facilitation green exercise as treatment, wilderness therapy, nature therapy, eco-therapy (Sempik, Hine and Wilcox 2010).

The case of the San Rocco valley in Naples

The Neapolitan historical fabric is defined to the north by a hills' crown partly included within the Hills' Metropolitan Park, bordered to the east by the Capodimonte Park and to the west by the Camaldoli upland. This area is interposed between the historic center of Naples and the informal growth of the hilly hamlets, which today correspond with the neighborhoods of Chiaiano, Piscinola, Miano, Scampia and Secondigliano, 'a crown of thorns' (Nitti, 1902) that surrounds the city to north.

Before the unlimited expansion of urban centers occurred in the twentieth century, north of Naples there was the so-called 'Piano Campano: a landscape consisting of a vast agricultural flat land and a group of farms that constitute the last southern extension of the Campania Felix where cereals and vegetables were cultivated, flax and hemp, fruit, wineyards and numerous buffalo breeding farms were found' (Visone, 2009).

This landscape reached up to the hilly area of the city preserving a rural character and a widespread presence of farms. Inside the hilly arch, the area of the San Rocco valley still preserves a presence of cultivated fields and rural architecture, all compressed within a city in extension that has strongly modified its structure.

The valley belongs to the volcanic caldera of the Phlegraean Fields and is characterized by the presence of a deep hydrographic incision that extends in an east-west direction for about six kilometers. Once this engraving was used to drain the waters coming from the Camaldoli upland, to lead them towards the basin of Arenaccia and then towards the sea.

Today, due to the construction of the embankment on which the large hospital structure of the New Policlinico rests (completed in 1975 on a project drawn up by a group of architects coordinated by Carlo Cocchia), the west connection with the Camaldoli is definitively denied.

The shape of the valley itself has also changed: 'its original riverbed has been widened because of the excavations which have retreat the fronts of the valley' (Recchia, 2010). On the edge of the valley and up to the Colli Aminei residential settlement, built in the sixties, there is a rural area that still preserves its original features (Figure 1).

This segment of rural landscape is inserted into urban parts that have developed through functionalistic logics, creating enclaves of residences or different urban facilities, in particular hospitals and schools. Within the overall urban development, this particular process has conferred a largely secondary role to this area, which has become a semi-abandoned enclave of landscape itself.

The rural area is defined to the north by the valley, to the east by the metro viaduct and then to the south by the Colli Aminei residential settlement and a small group of schools and the Cardarelli hospital structure and to the west by the New Policlinico hospital facility. Inside the area there is an archipelago of farms, rural residential architectures in close relation with the agricultural areas, which, like islands in a sea crossed by vegetable gardens, vineyards and fruit trees, represent domestic references of a large open space. The area is a large open space on the edge of the city (Figure 2), with an extension of about 100 hectares, which preserves a rural identity and a human scale, but which is measured to the west by the great size of the tower of the Biological Institutes (twenty floors high and belonging to the New Policlinico hospital) and to the east by the metro viaduct (Figure 3) with the two big station buildings of Frullone and Colli Aminei (built between 1993 and 1995).

The events that have characterized this area make it clear how it is located in a strategic position, in a part of territory that is both a border area and a connection area and that was also the site of the passage of the last wall of Naples, the financier wall, designed by Stefano Gasse starting in 1827 and of which only a few segments remain.

To protect this area and its context from further alterations, in 2004 the Campania Region established the Naples Hills' Metropolitan Park, safeguarding forever what remains of the agricultural landscape that surrounds the city and that still characterizes the territory where the farm are. This policy was implemented in parallel with the approval of the last regulatory plan that protected, like the historic center, also the old farmhouses and the still un-built and partly cultivated soils of the hills.

A proposal for rural form and identity in the making

The San Rocco valley area is governed by an Implemented Urban Plan approved in 2012, but not yet realized, which provides for the construction of an agricultural park in this area. The proposal follows the prescriptions of the Plan, interpreting the general strategy and the specific aims, but developing the topic of the agricultural park with reference to the therapeutic need, in accordance with the research themes of the research project of national interest "The city of care, the care of the city "(PRIN 2015 - University of Rome, Naples and Venice).

The setting of the project for the new park starts from some morphological figures of the existing landscape that become leading concepts for the new design: the natural morphology of the valley, the artificial morphology of large hospitals' structure and the natural morphology of the wooded gardens describe an engraved landscape in a clear and flexible way, characterized on the edge by the rigid grids of the settled landscape and traced in its interior through the furrows of the cultivated landscape.

The large agricultural space (Figure 4) takes shape through the articulation of some internal areas clearly identified and developed in relation to a frame of paths. These paths delimit different areas and connects them with each other and with the external parts of the city through a system of widespread entrances, located along the perimeter.

The paths also design areas for the green care activities following the compositional - organizational healing gardens principles, an orientation perspective that give coherence to

the landscape forms as therapeutic space. The whole project works in terms of general clarity, with areas and paths that give a feeling of stable simplicity and control of the understanding of the park's articulation. This aspect is therapeutic for all those stress related pathologies and is balanced to a design of strong variety of spaces, routes and crop types also in relation to the seasons changes which instead provides for the activation and stimulation of senses.

These variable and heterogeneous spaces are organized through the articulation of sequences and gradual transition areas that fluidly accompany the specific and variable need for spaces of exchange and aggregation with respect to more intimate and reserved areas. These sequences are organized through the rhythmic alternation of focuses represented both by the presence of some equipment architectures and by the presence of specific thematic areas.

Then, the specific location of the agricultural park in this expanding area of the city, characterized by strongly impacting infrastructural bands and great architectures, makes it necessary to develop space on the human scale that can be pleasant, welcoming, measured and can become, in this specific sense, also a new urban attractor.

The north-west south-east route defines the eastern boundary of the park, crossing it at the point of greatest difference in height, characterized by the structured presence of already cultivated areas, and intercepting the area of the new rural residences. In fact, in the east side the park is characterized by the presence of a new residential settlement that develops the rural architecture principles, both with respect to the local features, and with respect to more current forms of living, hospitality and residential treatment assistance.

The rural residential settlement extends into the agricultural landscape through rural paths and adjacent little architectures in this way designing the nearest open spaces. This also creates a new social dimension linked to the cultivation of the land and a renewed sense of belonging and identity, aspects that contribute to reinforce a dimension of collective, physical, psychological and social well-being. This area is also characterized by the presence of a space linked to the exchange intended both from the commercial point of view, giving a work attribute to the constancy and effort of the rural activity, both from the standpoint of the exhibition, conferring an attribute of art to the product of agricultural work. In this way, these spaces promotes aggregation, integration, sociability and the formation of new professional skills.

To the west, however, the park spaces relate to the consolidated presence of the two large hospitals. In this sense, in fact, the western wing is organized to accommodate spaces that decline the aspect of health promotion, prevention and care through the link with animals in the open space.

There are areas for pet therapy, care farming, but also for experimental research on agriculture as therapeutic device. On the edge areas the park is related to the characteristics of the urban materials that define its perimeter and therefore with respect to the road presence mitigation areas are set up through the placement of dense trees that define a protection diaphragm. To the north, however, the trees form a very permeable edge related to the great altitude jump and the engraved landscape of the valley. The path on the northern edge is characterized by the presence of panoramic points that rhythmically measure its development through the areas of green exercise and wilderness therapy.

Conclusion

The evolution of the urban morphology and of the rural identity of the area of the San Rocco valley in Naples allows to verify how the city is an entity in constant transformation, strongly dependent on human activities.

The therapeutic agricultural park project for this area of urban extension offers the possibility to experiment as an urban recovery strategy can base its design principles on an identity in the making, but is also be able to renew, once more, the agriculture features in terms of healing devices.

To the growing demand for public green spaces is offered a response in terms of large peri-urban open spaces, re-qualifying the pre-existing rural context and supporting the presence of large hospitals' structures through therapeutic open spaces.

The projection in the future of the shape of this part of the city takes place through the health and prevention culture's development, intertwined with that one of the re-appropriation of the multi-faced agricultural identity of a fragile and peripheral urban area.

This planning strategy that moves between city and nature, between urban and architectural project, contributes to placing the extension city and its rural identity again at the center of development and wellbeing policies, with the possibility of expansion of its benefits even beyond borders of the agricultural park.

Figure 1. Routes within the area of the San Rocco valley between the vineyards and the Naples Metro viaduct (photograph by the author, 2017).

Figure 2. The rural area of the San Rocco valley with the tower of the Biological Institutes on the bottom (photograph by the author, 2017).

Figure 3. The rural area of the San Rocco valley with the Naples Metro viaduct (photograph by the author, 2017).

Figure 4. Concept and masterplan for the agricultural park proposal.

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The collective housing between city and nature. The lesson of Arne Jacobsen in Copenaghen

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Within the theme of the conference Design. The urban project between city and nature the proposed contribution assumes the relationship between city and nature as an essential basis for the urban project. Within this general idea, the construction of residential units of dimensions that conform to human needs, conceived as constitutive elements of the city, is intended as a tool for the definition of an idea of a city made of morphologically finished parts, in which the natural fact becomes a real green infrastructure, which contains public spaces, communication and mobility infrastructures, parks, leisure facilities and agricultural land; in it we can trace the element of order and connection capable of reactivating structuring and constitutive synapses between heterogeneous urban parts.

These issues will be developed with reference to the case study of the city of Copenhagen in Denmark. Here the Regional Plan of the Five Fingers, approved in 1949 and based on an infrastructural network and green spaces connecting fingers the axes of urban development as a strategy to control the city and its growth, has demonstrated the effectiveness of the natural connective space between the built spaces for the reorganization of urban relations on a regional scale.

Along the coast overlooking the Øresund, the three residential complexes Bellavista, Søholm and Ved Bellevue Bugt and public facilities (theater, restaurant and seaside establishment) designed by Arne Jacobsen in an area between the Bellevue beach to the east and the Deer Park and the railway line to the west, but also the civic center (library and town hall) and the housing builings designed in Rødovre, along the north-west direction, form urban parts expressions of a coherent and city-oriented planning where the constitutive relationship with nature is the central reason.

Introduction

This essay presents the first results of a research work, born following a study trip during the autumn period of 2017 in Copenhagen; the object of the research is the relationship between cities, open spaces and architecture for living, especially collective, in reference to an urban project achieved by the Danish architect Arne Jacobsen in Klampenborg, in the northern suburbs of the Danish capital.

The area is located on one of the five directions identified by the *Five fingers Regional Plan* presented by the Committee of the Danish Centre for Urban Studies chaired by architect Steen Eiler Rasmussen and approved in 1949, whose aim was to stopping the concentric development of the Danish capital directing the urban sprawl that starts from the center of the city through the prediction of districts placed along five axes, the five fingers precisely, interspersed with wedges of green areas, agricultural and wooded, connected to the centre thanks to the realization of an alternative road system based mainly on new railway lines.

The green areas interposed between one axis and the other, increasingly wide as you move away from the center, entrust to nature the role of mitigating the infrastructure and settlement system, demonstrating today the effectiveness of the natural connective space between the built fabric for the reorganization of urban relations on a regional scale. In particular, the axis of development, on which the urban project for the area of Klampenborg is located, is characterized by the presence of the sea to the east and made up of several urban facts, the infrastructural system, the urban settlements of old and new construction, the parks and water channels connected in a calibrated composition.

All these elements, so different from each other, controlled by Arne Jacobsen's wise hand, are inserted in the harmonious and balanced Danish landscape, a landscape in which, as Tobias Faber writes in his book on Arne Jacobsen, «There are no great contrasts: it is lacking in dramatic tones – there are no rugged mountains, unlimited forests and impetuous streams. It is a landscape of subtle nuances, with gentle passages, soft contours and warm and friendly atmosphere. [...] The horizontal lines dominate. The horizon is wide, the sky high, and the clouds in continuous movement determine the character of the whole landscape»[1].

In Copenhagen Arne Jacobsen, whose figure has as pointed out Roberto Serino is «totally comparable to the Giano double-faced artisan and industry»[2], has carried out much of his activity as an architect and designer measuring himself during a wide period of time with themes and different contexts and realizing works in which he performs an extraordinary synthesis between the urban argues, the intrinsic aspects to architecture and those of the interior design, whose spatial and formal qualities are so refined as to be still today of great value and actuality.

A design activity that however at least in Italy is still little investigated. On the one hand, it finds a whole set of works in which the Danish master solves, although distinctly and with a different maturity, in an excellent way the insertion of new construction within a complex context, as in the case of *Stelling Hus*, a building placed in the corner of a block, or the *Hotel SAS*, which measures through the form of the plate the urban block which carries out a more public function, from which rises the tower where the rooms are placed, or to end in the *Bank of Denmark* and in the *Building for offices Jespersen & Son*, where the search for abstraction reaches its apex; on the other, Jacobsen works on urban projects that are located in peripheral areas with the aim of identifying new centralities for the city, such as he realized in Rødovre, where it builds a set of buildings that configure a new urban polarity - City Hall, the library, the Nyager School and a block of residences - , and in Klampenborg. It is precisely in this last area, realized in several phases, that a perfect synergy and balance between the spaces of the living, the open/closed public spaces and the nature, will be analyzed in this place in the plan of an internal investigation to the urban and architectural composition.

1 Tobias Faber, *Arne Jacobsen*, Edizioni di Comunità, Milano 1964, p. V.

2 Roberto Serino, *Introduzione*, in Renato Capozzi, *Arne Jacobsen. La ricerca dell'astrazione*, Clean Edizioni, Napoli 2012.

The urban project between city and nature. The case study of Klampenborg

The urban project for the area of Klampenborg is configured as a work that has grown and has progressively clarified and completed over time through the implementation of different interventions, even if all led by a common idea that involves the design of four large open courtyards extending out to the sea to the east. It marks and shows the maturation of the Danish architect to wide time intervals, first indebted to traditional Danish architecture and later influenced by Nordic classicism and new proposals coming from the Modern Movement. The result of his work on the area, visible in his conspicuous but equally refined production of works, is an architecture capable of establishing a dialogue with the surrounding landscape devoid of contrasts that brings together the constructive knowledge and the quality of the craftsmanship typical of the Danish architecture with the rhythm, proportions and order of modern architecture. «His architecture», writes Tobias Faber, «respects the character of the landscape as a primary element. The trees and the composition of the plant ornaments are always considered by him as an integral part in the solution of the architectural problem»[3].

The project for the peripheral area of Klampenborg defines a new urban polarity in the north of Copenhagen, about ten kilometers from the city center, in the municipality of Gentofte. The site is bordered to the east by the Bellevue beach overlooking the sea of the Øresund strait that separates Denmark and Sweden and to the west by the railway built in 1860; the latter favored the rapid expansion of the urban system that in the nineteenth century was much less dense and characterized by an alternation of farmhouses with large gardens, fishermen's houses and wide open spaces and today, although much denser, is characterized for the perfect blend and synergy between built and open spaces, between artifice and nature. To the south, the area is delimited by a dilated urban fabric of single-family houses surrounded by large gardens while to the north is bounded by a large park of about 1100 hectares, the Dyrehaven Park, founded in the late seventeenth century and open to the city in the nineteenth century. Dyrehaven Park, whose name means "Deer paradise", is a nature reserve that develops around the Eremitage Castle; more than 2000 deer live in it, and it also holds an amusement park (Bakken Park).

The various stages of the overall design of the Klampenborg district were all preceded by the awarding of design contests. The first competition is that of the *Coastal Baths with Changing Rooms and Life Guard Towers*, which the Danish architect won in 1930, when he opened his architectural atelier. A few years later, in 1933, he builds the *Bellavista* residential complex, a real urban open-courtyard block that fits harmoniously in the area with its "U" shape, configuring an open semi-public space in continuity with the *Strandvej* (coastal road) and projected towards the sea and the bathhouse built previously in the east. In the same years Jacobsen also builds the riding school *Mattssons Ridehus*, a large hall with reinforced concrete structure, with an elongated rectangular shape of about 40 x 18 meters and covered by a barrel vault; in the roofing vault were inserted small circular glass-cement tiles, no longer existing and replaced by unique windows, which guaranteed the entrance of a diffused light. Later a restaurant with a veranda was added to the riding school. The project also included a high panoramic tower, which had a restaurant on the upper floor that rotated to enjoy views of Dyrehaven Park and Øresund. In 1934-1935, Jacobsen won the competition for the construction of the *Bellevue Theater*, which was primarily intended for summer shows, as it was possible to open the ceiling to allow the starry sky to become one of the theater's walls. Next to the theater and in direct connection with it was the restaurant, which unfortunately did not have the desired luck and in recent times has been converted into a building for collective housing. Between 1950 and 1955, he designed a block of terraced houses, *Søholm*, built at three different times (*Søholm I, Søholm II, Søholm III*) with an open courtyard towards the sea; Jacobsen himself lived for a long time in one of the five houses of the first group facing south-east. The urban project was completed with the construction of the last block, *Ved Bellevue Bugt*, between 1960 and 1961, which is inserted between the first "U" *Bellevue* block and that of the *Søholm* terraced houses. The intervention consists of a in line residential building, joined by a wall to the *Bellavista* block in order to form another courtyard facing the sea; in this case the *void* of the court generated

3 Tobias Faber, *Arne Jacobsen*, Edizioni di Comunità, Milano 1964, p. V.

by the combination of the two residential blocks is partly occupied by a group of five patio houses whose height does not exceed that of the ground floor of the building behind it.

The urban project for the Klampenborg area is evidently in continuity with the forecasts of the *Five Finger Regional Plan*. Along the coast line overlooking the Øresund the three residential complexes - *Bellavista*, *Søholm* and *Ved Bellevue Bugt* - and the public facilities (theater, restaurant, bathing facilities and riding school) designed by Arne Jacobsen in the narrow area between the Bellevue beach to the east, the Deer Park to the north and the railway to the west, fix an urban part, expression of a coherent and city-oriented planning, where the relationship with nature is a central subject. Within this general idea, the construction of residential units of dimensions that conform to human needs, conceived as constitutive elements of the city, is assumed as a tool for processing a vision of a city made of morphologically complete parts in which the natural datum becomes a green infrastructure, which contains public spaces, communication and mobility infrastructures, parks, leisure facilities and agricultural land; in it, it's possible to trace the element of order and connection capable of reactivating structuring and constitutive synapses between heterogeneous urban parts.

In this sense the project is in continuity with the research conducted above all by Le Corbusier, May and Hilberseimer for the definition of the elementary parts of the city through which redefine the relationship between city and nature. These researches, whose assumptions, according to Giorgio Grassi and Antonio Monestiroli, are contained in the *Städtebau* manual by P. Wolf of 1919, have in fact open the way for the experimentation of an idea of a city made up of autonomous parts that takes the notion of urban tissue as a basis for the overcoming of the contrast between the city and the countryside of the nineteenth-century city in favor of a closer constitutive relationship between them. In the hypothesis of P. Wolf the gradual thinning of the city from the center to the periphery accompanied by the penetration of green areas up to the limits of the historical city defines a new urban space in which artifice and nature interpenetrate and where the urban block is repurposed as *forma stabile dell'abitazione*. Antonio Monestiroli writes about the proposals by P. Wolf: «The neighborhood is a set of blocks but is also a residential entity in itself. It is defined in a unitary form that makes it recognizable as a proper place for all its inhabitants. Each district is built on the relationship between free spaces and built spaces. A hierarchy of free spaces has been established: from those for the whole district, where public buildings are located, to those inside the court blocks, to the private ones of single-family houses. This hierarchy defines each of the residential places as parts of the big city, which is built in turn on the relationship of the residential areas between them, with the urban center and the areas of the partner. A complex system of relations between distinct elements and each with its own recognizable form»[4]. Here the open-courtyard blocks towards the Øresund, both the residential ones, to the south, and those made up of public buildings, to the north, give form to an urban part in which the same different nature and consistency of the open space is a progressive process of control, measurement and specialization, from the one of the forest to that of the private open space of housing, highlights a project in which, as Renato Capozzi writes about the project that Jacobsen realizes a few kilometers from Klampenborg, in the municipality of Rødovre, «the void is itself a full dense of meanings but also an "architectural shape", and therefore endowed with and responsible for order. Not a shapeless and fleeting *vacuum* but a space understood as distance or interval between bodies controlled with geometries and relationships that are completely analogous to architectural ones, even if re-signified, which while not relying on consoling bilateral symmetries welcomes and "infrastructure the nature" to inhabit it»[5].

The housing and the nature

The three residential complexes realized by Arne Jacobsen in Klampenborg represent a field of compositional and design experimentation, in which buildings characterized by different typology are composed within the landscape of the Danish plain, where the vast

4 Antonio Monestiroli, *L'architettura della realtà*, Clup, Milano 1979, p. 87
5 Renato Capozzi, *Arne Jacobsen. La ricerca dell'astrazione*, Clean Edizioni, Napoli 2012, p. 45.

horizons are interrupted by sloping roofs and high chimneys, thus defining an articulation of ever-changing wefts and heights. The relationship that Arne Jacobsen establishes between the residences and the natural landscape, certainly indebted to the Danish tradition, is not of mimesis in the strict sense, therefore of copying or imitating the sensible and immediately perceptible forms of reality, but studying the ideal forms of nature, the Danish architect works in the identification of rules and proportions present in it to replicate them according to an *order*. It is precisely through the order, rhythm and proportions that Arne Jacobsen identifies through the *vacuum* a relationship of proximity to the natural landscape. The void is the subtraction of the matter, it is a cavity where the actions of the living are held, becoming a scenario of protection and intimacy, and in this sense, it remembers the words of Henri Focillon about the void «Giving a defined shape to that hollow space It (architecture) really creates its own universe [...] The most wonderful thing is the having in some way conceived and created an inverse of the space»[6].

The void becomes an indispensable element for the composition of the houses and Arne Jacobsen declines this theme in a manner different from the needs, and perhaps, it is possible to compare the figure of the Danish architect with that of director Ozu, who «Through the void plans», as Carlos Martí Arís writes, «creates between the spectator and the story a free bond from the dramaturgy, a neutral element in appearance, capable of simultaneously provoking, intimacy and distance. With this elliptical process we evoke situations or aspects that do not show themselves explicitly, or emphasize the importance of what is not said, of what does not happen. In this way the traces of the absent are detected»[7].

The residential complexes, even if they are expression of different ways of living, from the collective of the houses in line to the more individual one of the houses with patio, and built in different periods, present among them evident affinities which are identifiable in the relationships that are established between the architecture and the landscape that can be classifiable in four types: external-external, external-internal, internal-external and internal-internal.

The external-external relationship is the relationship that is established between the house and the sea, which materializes through the identification of three courts, which are not intended as a widening of the road, but rather are understood as the green podium, open to nature, raised from the road level to re-establish continuity with the natural horizon. The external-internal relationship is understood as the research conducted by Arne Jacobsen to give the opportunity to all the houses to take advantage of facing the sea; a research whose results are evident, for example, in the slipping of the apartment block towards the interior of the court. This slipping become the opportunity to place in the houses mediation spaces between those internal, warm, and external ones, cold, like terraces, balconies, loggias. The third report, the internal-external one, can be seen especially in single-family homes, where the insertion of patios and gardens give the possibility to connect vertically and horizontally the spaces of the house with the sea and the sky. The last relationship, the internal-internal one, is the only one that creates a distance and also a removal of the house from the nearest exterior through the space of the vestibule and connective, which determine a dilation of the house and its articulation in spaces for living for man and on a human scale.

Chronologically analyzing the residential complexes, the first competition that Arne Jacobsen wins is that of in line housing block *Bellevue* in 1930, then, between 1950 and 1955, realizes the terraced houses *Søholm* (*I, II, III*) and finally *Ved Bellevue Bugt*, between 1960-1961, where he builds in line housing block and the patio houses.

The residential complex of *Bellevue* is the first to be built and is still influenced by a part of the Danish tradition's influences and the other of the Mediterranean language; these influences are visible in the choice to use the balconies with a circular pattern, in the use of white plastered walls and in the insertion of pergolas that mitigate the sun's entrance on the top floors. The residential unit, which has a "U" plan with an open courtyard overlooking the sea, is raised above the road level, and is mainly used as green with the presence of two

6 Terranova A., *Presentazione*, in Spirito G., *Forme del vuoto. Cavità, concavità e fori nell'architettura contemporanea*, Gangemi, Roma 2011, p. 8.

7 Carlos Martí Arís, *Silenzi Eloquenti. Borges, Mies van der Rohe, Ozu, Rothko, Oteiza*, Christian Marinotti edizioni, Milano 2012.

trees. The complex consists of twenty residences for the first two floors, while for the other two floors only sixteen, because the four apartments located in the terminal part to the "U", or those closer to the sea, rise only two floors, to give the idea of a gradual approach to the horizon line. In the two arms of the "U", with north-south orientation, Arne Jacobsen makes sure to always have the stairs to the north, but while the first arm, has the views towards the sea and to the inner court, in the second arm, not arranging of the court, raises the apartments to the same level as the court by inserting terraces to the apartments on the first floor of residences, which become garages on the level of the road.

The second part to be built is the complex of terraced houses of *Søholm I*, located further south of the first complex, consists of three groups of houses also arranged in a "U" shape, in which one green podium to mitigate the relationship with the road, and even in this case, as in *Bellevue*, the houses have slipping of plant to favor both the entry of the sun from the east and from the west, but also to ensure the same view towards the sea. In these houses, Arne Jacobsen changes the material of the building's skin, preferring to the stereometric white volumes, a yellow brick. The first group of houses consists of five houses oriented north-south, with the entry for both cars and pedestrians from the central court space. The houses are on two floors, with a basement, and are set back from the roadside, presenting a green space both in front and behind the house, to ensure always quiet houses, away from the noise and chaos of the city. All houses have an entrance hall with vestibule, which does not immediately enter the dining room, which has a double height, communicating with the living room and the balcony. The peculiarity of these houses is that there is not a distinct division of living area on the ground floor and a sleeping area on the upper floor, but it is the living area that expands vertically, to give the possibility of having a view from the sea from a floor superior, in which a balcony is inserted. Instead, the houses of *Søholm II* are oriented east-
1106 west, the entrance is located in front of the internal access road to the courtyard, even if the ground floor is raised by five steps, while the garden of each residence is located to the west. The entrance vestibule immediately presents the stairs that give access to the basement, where the cellar is located and to the upper floor where there are only the bedrooms and a bathroom; on the ground floor there is a large living room with double east-west facing and kitchen. *Søholm III* is located parallel to the houses of *Søholm I*, therefore with a north-south orientation, unfortunately these houses have the living room positioned to the north, without having, unlike other solutions, a living room with two opposing windows.

The last intervention, that of *Ved Bellevue Bugt*, realized after thirty years from the first "U" block of *Bellevue*, reaches the maximum compositional and constructive clarity, and consists of a block of flats in line oriented east-west of four floors and five patio houses in front. The in line housing has a compact rectangular shape with white walls where the horizontal line predominates, interrupted by tall chimneys in bricks and by the black partitions that divide the ten apartments. On the ground floor there are the garage, while the ten apartments join two by two around the core of stairs and elevators. There are forty-five apartments in all, and there are variations in the number of bedrooms and in the layout of the kitchen which in some cases is located facing east and in other cases to the west. The houses are 20,30 meters wide to allow you to locate a fireplace room in the central part, while the living room with balcony faces east to enjoy the sea view and the bedrooms are to the west. The patio houses have a compact appearance with walls and chimneys covered with yellow brick and the white roof slab, covered with gravel. The entrance takes place to the west from the internal road to the isolated shared with in line housing block, where are placed the car garage that shield the first courtyard, on which overlook the bedrooms. On the second patio overlook another bedroom, the kitchen and the dining room, finally there is the living room that has a view on the patio and one on the sea. The intimacy that characterizes the patio houses is guaranteed by placing the patio houses at a lower level than the road and inserting a large area equipped with low bushes, so as not to see the cars passing and have a single horizontal plane where the green mixes with the blue of the sea and the sky. These houses are the demonstration of how «in the void, far from being a mere absence, its realize the relationships and rapports between the full (buildings) that by character, role, size give shape and reason of the void that at the same time separates them and unites»[8].

8 Renato Capozzi, *Arne Jacobsen. La ricerca dell'astrazione*, Clean, Napoli 2012.

Conclusions

The urban project of Klampenborg defined in this way with open spaces, public facilities and residences is configured as an autonomous part within the territory, perfectly inserted in a big city like that of Copenhagen. The interest in this work cannot but relate to the compositional and constructive aspects of our craft, so much so that it can be considered as a real reference both for the design of public open / closed spaces and those concerning the most intimate dimension of the housing. The architect's skill to compose proportionally the few elements that belong to the architectures he realizes, the attention to detail, the skillful design of living spaces, the compositional clarity are the expression of the great architect of the Modern who still has so much to teach.

Figure 1. General plan of the urban project of Arne Jacobsen in Klampenborg, Gentofte, 1930-1961. Drawing by the authors.

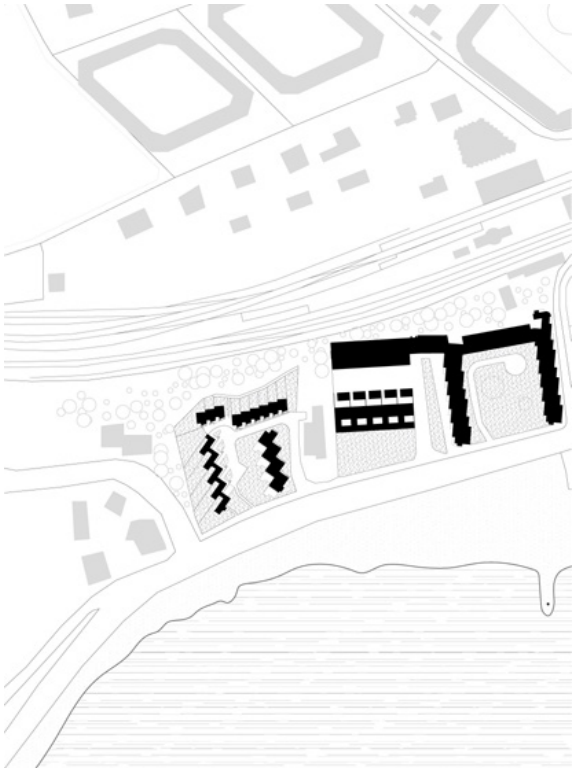


Figure 2. General plan of the urban project of Arne Jacobsen in Klampenborg, Gentofte, 1930-1961. Drawing by the authors.

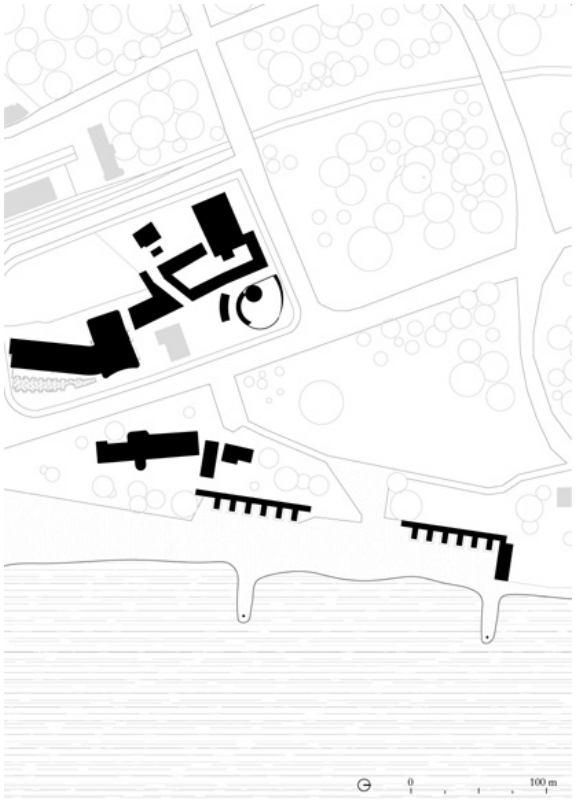
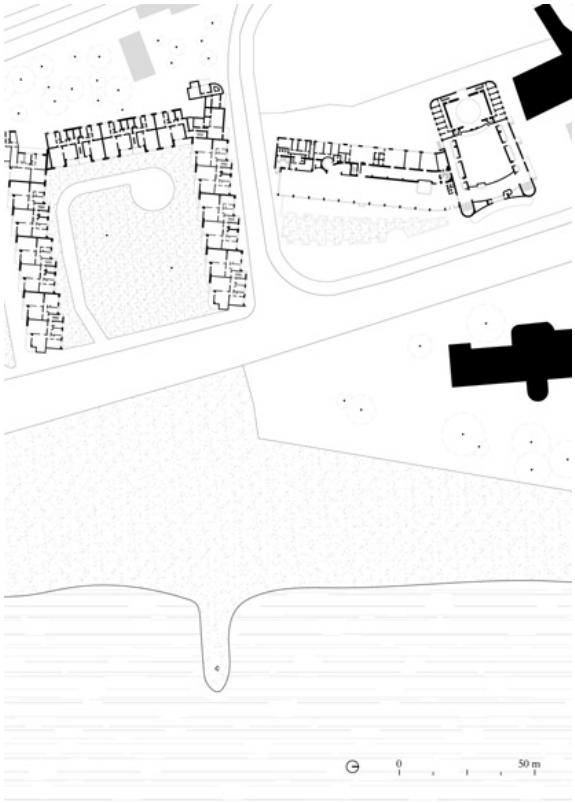


Figure 3. Typological plan of the three block of houses and theater/restaurant. Drawing by the authors.

Figure 4. Typological plan of the three block of houses and theater/restaurant. Drawing by the authors.



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Building the contemporary open city

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With Modern Movement experience, the way of building the city begins to change: the close relationship between the block and the house morphology progressively overcomes the proposed to urban composition - also in relation to the changed size of the dwelling space - the serial repetition of buildings, mostly in line or with gallery. This settlement mode has introduced in the contemporary city a topological inversion different to the ancient city or a change of the relationship of density between mass and void resulting on spatial expansion.

The principle of openness, since then, has thus become the hinge principle of building of the contemporary city that no longer conforms itself through the delimitation of a closed block but through a block that could be defined as open where the important is the arrangement - not random - of buildings in space.

The concept of openness can be declined in different ways and can be referred to another concept, the one of externality introduced by Uwe Schröder. Through the Pardiè project, the German architect has introduced, in fact, a way of reading the urban space in which open space has two possible characterisations: the landscape spatiality that defines a field and the spatiality that assumes a condition of externality despite the architectural delimitation of a continuum. The paper, therefore, aims to analyze some urban compositions considered as exemplar by re-reading this dual possibility of understanding openness as a valid way of building the city today.

Open city syntax: some compositional and spatial consideration

This text investigates the theme of the open space in the syntactic, morphological and spatial structure, of the contemporary city reflecting on the concept of "elementary part" as an order principle of the present city construction replacing the principle of the closed block that had strongly characterized the forms of the historic city. In fact, gradually, the *insula* has begun to lose its compositional rigor above all when the relationship between the buildings and the street has changed: in the idea of the city of the Modern Movement, the city was given by the reiteration of large multi-family buildings arranged at the same distance and in an ideally infinite succession.

The distance of the space between the buildings has therefore placed the attention on the role and value of the open space as a possible place of relationship and not, as it has often happened, as a place of residual space left undefined. In the city, as Colin Rowe recalled, there are two conceptually alternative 'topological models' or 'urban types'. The *forum* model and the *acropolis* model. The *forum* as an urban archetype of the delimitation action, of the interior, of the closed space and the *acropolis* as the urban archetype of the extension action, of the relations, of the distance, of the space in between architectures. Referring to the two modalities it could be said that the current tendency to dispersion depends, in some ways, on the exasperation and the tampering of the second model where *dispositio* and *collocatio* become devoid of a proper meaning: when the buildings move away until the tensional bond is lost by not making the overall relations between them clearer. The inversion relationship between the city spaces, between the full and the void, attests differently to the past a predominance of the non-built space over the built one, suggesting a new but very ancient relationship with Nature. In this sense we speak therefore of an "open city", recalling the opening to some urban conformations in the connotative grammars of the city.

Regarding the new dimensions of the city, the intention is to specify the difference between the "urban block" and the "elementary urban part". The block, as a morphological unit defined and delimited at least on three sides by roads, was the primitive and generative device of the city that has dictated the rule of the formal composition of many cities. The urban block of the ancient city had the spatial characteristics of the interior for the full and the void spatial relationship that it proposed: as a minimum unit, in aggregating with other units, it has formed compact urban fabrics through its own repetition. When the road role of facing and meeting began to be subordinated to the traffic at the end of the nineteenth century it was determined a substantial change in the way of building the city. In fact the concept of "closed block" can be said replaced or at least integrated to the concept of "open block" or better to the concept of "elementary urban part"[1]. So the "elementary urban part" is therefore identified with a large block that loses its dependency relationship with the street as a place of houses view or as a collective urban place. The meaning of word "elementary" consists on the part of composition which is considered complete and it is therefore not further reducible but repeatable to constitute an order of higher degree for urban part, the neighborhood.

In the grammars of the "elementary urban part" the open space in the sense of space-nature becomes a fundamental syntactic element that holds together the buildings of the composition.

An important antecedent releated to the importance of the open space, was the project by Lafayette Park in Detroit in 1956 of L. Mies van der Rohe and L. Hilberseimer: with an unprecedented urban proposal they proposed a change of the typical structure of the American block with a composition of buildings, based on the repetition of residential units

1 The research on the "elementary urban part" has given the title to a research financing from the PRIN 2005, 2007 and 2009 coordinated respectively by Luciano Semerani, Antonio Monestiroli and Gino Malacarne. The result of the design experimentation has been collected in a recent book (Neri R. (2014), *La parte elementare di città. Progetti per Scalo Farini*, Lettera Ventidue, Milano) and took place in a disused railway station area of Milan, Scalo Farini, focusing on the "elementary urban part" declinations through the proposals of different designers.

combined with collective public facilities serving the settlement and open to the space of Nature on the scale of a large urban park.

In Italy instead for the attention paid to composition with the open space, the Harar and the Feltre districts of Milan have been emblematic for their settlement form for no longer meeting the rules of the traditional urban block.

The *Harar Quarter* (1950-1955) on the west side of Milan has a trapezoidal area crossed on the east side by a vehicular underpass dividing the quarter into two sectors.

The settlement principle is given by the combination of six tall houses, made by Gino Figini and Gino Pollini, arranged like a turbine combination around a large central space where the plan involved the presence of shops and public services, successively changed during construction; than a low-rise single-family homes define a more reserved residential fabric, with an inner protected courtyard, with irregular residential *insulae*.

The shape of the voids is characterized by the strong presence of the open spaces. Nature has a leading role: in the west sector the tall buildings are arranged in a way to emphasize the central green space, a collective natural heart open to the city where the presence of an artificial pond was also assumed, but not realized. The space between tall houses and low houses is never closed but it opens continuously towards the central park, sighted through the tall buildings, making all the spaces of the neighbourhood interconnected.

The variety of places in the district is given by the particular relationship between residences and equipment. While residences define places with an intimate and private character, equipment polarize a large natural central place giving to it a public-collective character. The types of buildings in the neighbourhood include two different ways of living: low-density single-family houses and multi-storey houses, the Bottoni's ones arranged according to the *insulae* direction.

The "elementary urban part" is given by two tall buildings composed like an "L" shape and by a fabric of low houses, geometrized according to a process of abstraction like an almost square block. The east sector, resulting from the subtraction of the underpass, despite having much smaller dimensions, has tried to respond to the same settlement principle using the same architectural elements: the tall houses, built by Piero Bottoni, relate to the central park almost acting as a stage set. So the minimum unit consists of two different residential typologies and it is variously repeated three times in order to establish the limits of a regular-shaped central park; the two other residential units to the east complete the idea of unitariness of the quarter even if with some compositional variations due to the presence of narrow and long lots.

The relationship with the surrounding context determines in fact the variation processes of the "elementary urban parts" influenced by the irregularity of the lot and then repeated, rotated and changed in the dimensions and in the destinations: that variation in the east sector has been done by the replacement of the two L-shaped bodies with just one building, the reduction of the fabric and the substitution of the low houses with an urban public equipment.

The *Feltre Quarter* (1951-1961) to the east of Milan is located in an area that is today very infrastructured. The orographic condition of the places was singular: an area bordered to the east by the Lambro river and by the ring road immediately after and to the north by the large Lambro Park conceiving the neighborhood as an extension of it.

The settlement principle of the district avoids the principle of serial, a gerarchic and indifferent repetition of architectures in line to give a greater character of internality to the urban space, prefiguring a settlement totally immersed in the green. The line buildings ten stories high are arranged in a strip with a length of about 1300 meters and designed by different architects coordinated by Gino Pollini. Winding up in open enclosures like a *redent* it built a perimeter open in several points in contrast to the dispersion of the small buildings and against the idea that single-family homes can build the city-nature.

The shape of the voids has been clearly conditioned by the building that like a large broken fence has shaped and enclosed a protected natural interior space, distinct from an exterior with a more urbanized character.

The relationship between residences and equipment has been defined starting from the conformation of the residential buildings that fold and define their own areas concluding

a park of large dimensions (about 200 meters x 400 meters) where the school services of quarter has been later located. In a second moment a second settlement has been developed consisting in a group of four-story high-rise buildings where the religious centre and the shopping centre (partly built) has been built.

Trying to use a process of abstraction as in the previous case for the purpose of a compositional geometrization, in the neighbourhood have been identified three "elementary urban parts" - each simplified with an open court building with a small public adjacent equipment - all facing an interior that is naturalized, public and collective. In order to arrive at the structure of the settlement unit it has been reconstructed the possible forming process of the neighbourhood: the building interrupted along two orthogonal axes leading to each other. This action has determined three courtyards units deformed by the context so their arms have been rotated, broken off and opened to the Nature.

The two quarters in Milan present two different conditions: the mixed residential unit of the Harar district, in its aggregation with other residential units, varied according to the location, delimiting a central public space, collective and natural; in the case of the Feltre district the three "elementary urban parts" as described do not give the same spatiality of the general settlement. The Feltre district, through a large enclosure, variously interrupted has implemented a principle of demarcation establishing itself in a scale that is far from the dimension of the block. Thus, the quarter in its particular composition is itself an "elementary urban part": therefore, when the repeatable settlement unit cannot be found within an urban composition, it can be assumed that the district coincides with the "elementary urban part".

The contemporary "dialect" city according to a definition by Oswald Mathias Ungers, lives on the presence of compressed spatiality like those of the "dense" city and of the presence of free and extended spatiality like those of the "city-nature". With what has just been said, in the city according to the spatial classification of Uwe Schröder it could be find spaces of the interior and spaces of externality: in the ancient city the urban space assumes, above all the characters of the interior but when it expands, as in the modern and contemporary city, it can take the characteristics of externality. The concept of externality can therefore refer to unlimited spatiality without boundaries - as the field - or even to particularly extended spatiality that are considered 'external' for the spatial measure and for the proportion between the heights of buildings and the distances between them. Uwe Schröder with the Pardiè project, starting from the famous comparison of Colin Rowe and Fred Koetter in "Collage City" of Parma and Saint-Diè, reflects on the contemporary city so strongly diversified in the shapes of the parts that compose it - or that break it down - has proposed a model of a "possible" city that is represented in the image of a collage-poster in which compact spaces, interiors, and necessary open external spaces are combined.

The contemporary city defined as an "open city" is a city in which unbuilt space takes on a predominant role within the composition of urban spaces, unlike the role it holds today in the so-called "informal city" or "widespread city" where that same space assumes characteristics of randomness and accidentalness due to the arrangement of architectures that rarely respond to overall logics. The "open city" recalling the 'forest city' of Marc Antoine Laugier, intends to refer more specifically to a new conception of Nature as a place within which architecture is placed.

In the compositional syntax of the two districts described, the open space has a predominant role in the composition and is identified in both cases with large natural spaces in the service of the neighbourhood and more generally of the city: the space not built in both examples acquires meaning starting from the controlled definition of pauses, hiatuses, counterpoints, intervals, tensions and above all of adequate measures that allow us to understand free space as a connection space rather than a separation space. Knowing how to wisely articulate in a clear way the parts, between repetitions and admissible variations with always distinguishable relationships and in a general perspective establishing hierarchies, separations, conjunctions, differences or overlaps, becomes an essential prerequisite for a controlled thinning principle and allows to diversify the urban spaces and the places we live in.

Figure 1. The Harar Quarter (1950-1955) in Milan. Form and structure (building, paths, nature); components (residences, residences and equipments, settlement); geometry and minimum compositional unit (Hypothesis 1 - translation, rotation, doubling, interruption; Hypothesis 2 - void delimitation, translation, rotation, division). Drawings by the author.

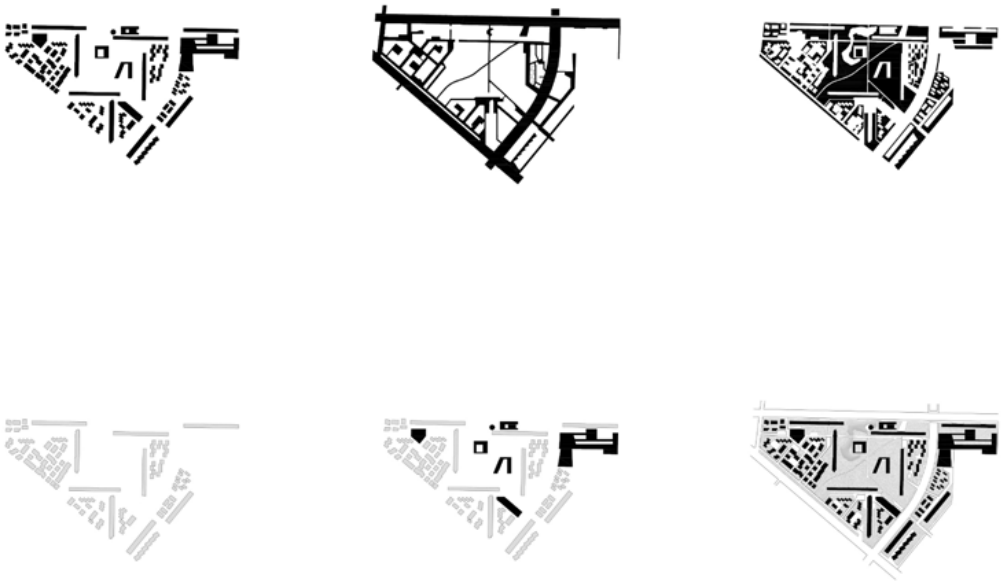

Figure 2. The Feltre Quarter (1951-1961) in Milan. Form and structure (building, paths, nature); components (residences, residences and equipments, settlement); geometry and minimum compositional unit (delimitation, interruption, rotation, bending, translation). Drawings by the author.

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Water as an element of the urban fabric – Cases of developments in UAE

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Water as an element have had a very close association between cities and it is inherent over the history of civilization (Azlina Binti Md.Yassin et. al, 2010). It played a very important role in strategic positioning and / or origin of city, development of trade and commerce and city's development. During post-industrialization era, many waterfront developments have been port zones, more closely tied to the urban fabric. Hence, launching waterfront projects has been one of the most predominant urban policies (Marshall, 2001). A paradigm shift has occurred over the decades from visualizing the waterfront as component of urban area accommodating numerous activities, to getting evolved under highly influenced notion of livability and lifestyle. Constructing new waterfront development (natural/artificial) is evolving as a new trend for real estate to compete (Dr. Ehsan Bayat , 2016). In United Arab Emirates (U.A.E) the waterside communities are favored among the elite, holiday home buyers and investors who desire for a sense of seclusion in their luxury waterfront homes, and yet have all the amenities of comfort and lavish living (Hina Navin, 2018). Current research has forecasted a little or no discussion on the aid of artificial waterfront development in cities' performance. The paper attempts to bring into the discourse this conception of water element, through case studies from U.A.E and observe if this new trend can be considered as part of the urban fabric. In conclusion, the paper will highlight the way it contributes towards city's social, economic and environmental factors.

Introduction

The purpose of the paper is to outline and examine certain aspects of the waterfront urban development dynamics. The focus is placed on the new trend of designing and constructing artificial canals as element of the cities environment - a practice that emerged intensively during last decade in the Gulf Region. The intention is to bring into the discourse the use of water canals as part of the urban fabric, and consequently to further contribute in the debate regarding the contemporary urbanization forms (Douglas et al., 1983) (Breen & Rigby, 1994) (Champion & Hugo, 2004) (Brezzi, 2012).

Urban waterfront: the canal city through history

From the ancient Babylon and Alexandria to Varnasi in India, and from Byzantine Constantinople to Aztec's Tenochtitlan, areas nearby rivers, lakes or naturally protected bays were the first choice to be inhibitted by settlers of all civilizations (Azlina Binti Md.Yassin et. al, 2010) and used to be the cradle of trade and commerce, and society's development. However, Venice is undeniably the most famous iconic canal city, originating its "urbanization" as a state-city between 10th to 12th century CE. Following the technological means of the different eras, the human improvements applied on the existing natural features were actually very limited. Even if the construction methods used are admirable and functional till today, (traditional wooden foundations system of Venice) the modification of the seashore or the riversides has been relatively poor in comparison with the changes occurred during the industrialization era. Many waterfront areas within or nearby the cities have been developed through large-scale interventions to serve as port zones and industrial areas. The new activities were often attracting services and retail around the industrial workers settlements, rapidly urbanizing and more closely tying the waterfront to the urban fabric of the core city. Hence, launching waterfront projects has been one of the most predominant urban policies (Marshall, 2001). Amsterdam, Copenhagen and, later, Singapore are testimonies for such canal cities of that period.

By the last quarter of the 20th century, former industrial busy waterfronts witnessed decline. Vast areas started being abandoned raising issues of urban fabric's continuity, dead zones, urban voids, safety concerns, delinquency, insecurity etc. The transition from industrial to post-industrial economy resulted in the re-colonization of the inner cities and re-development of obsolete industrial land, frequently on waterfront sites. Bold state initiatives and public-private partnerships targeting at waterfront brown fields has become a conscious policy strategy in many cities seeking to reconfigure their urban economies and cityscapes (Gregory et al., 2009, pp.273-74). The London Docklands' regeneration in early 1980's and the recent ambitious redevelopment for 14km waterfront in Mumbai[1] set examples for such initiatives.

A paradigm shift

A significant shift has occurred over the last two decades, from visualizing the waterfront as component of urban area accommodating numerous activities, to getting evolved under highly influenced notion of livability and lifestyle. Constructing a totally new waterfront is emerging as a new trend for real estate to compete (Bayat, 2016). In United Arab Emirates (UAE) the waterside communities are favored among the elite, holiday home buyers and investors who desire for a sense of seclusion in their luxury waterfront homes, and yet have all the amenities of comfort and lavish living (Hina Navin, 2018). However, rather than attempting to understand the origins of this shift solely within the context of the post-industrial waterfront regenerations, we suggest to place the focus on the real estate development which bloomed in Florida, USA during the 20th century.

Miami is the second iconic "city", after Venice, often used as an archetype for the contemporary canal estate developments all over the world. If one looks back to1920s, many land developers invested in the "sunshine state" in areas such as Miami, Fort Lauderdale and Palm Beach offering, not only luxurious resorts and second homes to people who could

1 http://www.udri.org/projects/vision-plan-mumbais-eastern-waterfront/

afford it, but also a dream destination targeting the upper-middle class from the cold northern states. The trend was so glamorous that, in a few years, Miami was transformed into an emerging metropolis for vacationers and, at the same time, the speculator's tropical paradise. The bubble collapsed by the end of the decade due to the economic depression; the market ran out of buyers to pay the high prices (George, 1986).

Soon after the World War II until the return of the century, Los Angeles and Miami with their rapidly growing metropolitan areas are considered to be the competitors for the title of the "postmodern metropolis" (Soja, 1989, p.191) (Nijman, 2000, p.135). In eastern Florida, the canal estate patchwork is now extended along the Atlantic coastline, from Homestead to Port St. Lucie, forming a 200km suburban waterfront mainly built on artificial canals over the natural wetlands. Although the pattern has been adopted in smaller scales within cities in other areas of the world (Texas City, USA, the Gold Coast Queensland, Australia), it revives and celebrates its contemporary dynamics in the Gulf Region[2] and especially in UAE, where Dubai is driving part of its economy through artificial waterfront developments.

Methodology

This study is conducted on the basis of a double assumption made for the currently designed spaces in UAE: the first being that the water gets intentionally used as a design feature, in contrast to cities which gradually have been expanded progressively over natural canals; and the second being that water can be considered as a vital element of the generated urban fabric. Both assumptions lead us to read the artificial canal developments in terms of a new form of urbanization emerging in Gulf region, and thus to select certain fields of indices to understand the impacts.

The recent literature and the current research have forecasted a little or no discussion on the aid of artificial canal estate development in cities' performance. Three main resources were used to theoretically and practically support our ongoing study:

1. The bibliography related to waterfront re-development;
2. Papers focusing on the rapid urbanization and its environmental impact along the Gulf Region;
3. Articles summarizing market analysis studies conducted to facilitate the decision making of the real estate developers.

For the case, three different case studies from UAE have been examined under social, economic and environmental dimensions. The study in its core consists of a comparison analysis between the three cases that cover a range of the different scales the trend has been observed: a city scale intervention in Dubai; a mix-use marina attraction in the suburbs of Sharjah; and a commercial housing resort located nearby Ghantoot village, between Abu Dhabi and Dubai.

The empirical authors' insight originates from their chance to work as a master planning team in the design of the third case study.

The key dimensions of the research study

Social Dimension

When analysing the social dimensions of waterfront developments the degree of water dependancy is significant (Douglas, 1983). Its possible social impacts are dependent on the interests and perspectives of the people involved. According to Craigh-Smith (Stephen J . Craig-Smith & Michael Fagence, 1995) firstly people who use waterside areas for residence, place of work or recreation are associated with waterside areas for housing, industry, commerce, transport and variety of leisure and recreational facilities. Secondly, those people who view waterside areas as a public resource are concerned about the quality and use even if they themselves may not directly use or benefit the respite. The contemporary waterfront developments can be grouped according to their main use as follows (Breen &

2 At the same time, the L.A. suburban paradigm blossoms at Riyadh's and other cities' expansions in the mainland of the Arabic Peninsula (Balasis et al., 2018).

Rigby, 1996):

1. Commercial
2. Cultural, educational and environmental
3. Historic
4. Recreational
5. Working
6. Residential

Based on the above classification, Sairinen and Kumpulainen in their study on assessing the social impacts of the waterfront regeneration in Helsinki (Rauno Sairinen & Satu Kumpulainen, 2005), suggested four areas of indices that can be adopted in order to measure the social impact of the artificial canal and waterfront developments.

Aiming to bring about a more sustainable and equitable biophysical and human environment, the International Association for Impact Assessment (IAIA) introduces a more integrated process of Social Impact Assessment (SIA). It includes the tasks of analysing, monitoring and managing the intended and unintended consequences, both positive and negative, of planned interventions (policies, programs, plans, projects) and any social change processes invoked by those interventions (IAIA, Accessed:2018). The SIA examines different ways of experiences the waterfront is offering whether in the form of sea, lake, river or canal and understanding their qualities for the community. The assessment offers an opportunity to increase awareness among spatial planners, decision-makers and the whole community about the social and cultural aspects of waterfront areas, such as physical, recreational and cultural relationships between a community and the waterfront. As per IAIA one of the main tasks SIA conducts is to predict how the nature of the community will change as a result of a specific project and who, in the position of stakeholders will be affected.

Economic Dimension

Moving beyond Adam Smith's well-known statement that seashores and riverbanks are poles of economic wealth, as their openness allowed the establishment of trade relationships, the modern world adapted this concept in a wider fashion by expanding the growth retention options from port and free zones to mixed use developments. The growth in UAE has a positive outlook due to the strength of its real estate sector (Fansa, 2016). Real Estate is contributing almost 7% (Ministry of Economy, 2017) in total GDP of UAE. Colliers stated that the water views generally added approximately up to 18% to the property value and in Dubai emirate this premium is in the range of 10% to 15% (Colliers International, 2017). Infact, in UAE the "waterfront" label engenders a sensce of exclusivity, coupled with the perception that having water on the foreground or backdrop is correlated with the highest standards of living. Bacause of the nature of such properties, the real estate companies are going great lenghts to meet consumer's demands including canalling islands, scupting coastal extensions and creating islands (Bayat, 2016).

If we look into the economic implications of such developments in UAE, they reflect on the construction industry, employment, and property market as a vehicle and driver of economic growth. In past waterfront regenerations / developments have reflected in increasing the real estate property values, new economic regeneration opportunities for declining inner city areas, attracting tourists not only at the regional level, but also nationally and internationally and providing new jobs (Papatheochari 2011), (Jones 2007), (Goddard 2002).

Though, the real estate market, even if it is well backed-up on the petrol economy, it is also widely exposed to external economies, unstable conditions and political decisions in other areas of the world[3]. At the same time, the economy internally is based on expatriates' employment, but properties for sale that are marketed as affordable by developers remain

3 For example, the announcement of the Brexit vote raised concerns to the real estate experts in Dubai, that this may lead to a general outward flow of capital from the UAE and an unforeseen drop in demand for UAE real estate.

out of reach for many[4]. UAE is no less impacted from the shortage of affordable housing that threatens the long-term stability and economic competitiveness of the country. Developers started integrating mixes of low-income and luxury housing in their plans, however the luxurious and often over-scaled waterfront developments require to undertake high construction costs, and thus push the prices at the surrounding areas on a higher levels.

Environmental Dimension

Environmental dimension is considered an important aspect in the waterfront development as a critical interaction between the natural element of water and the urban development takes place.

The positive effects of such interaction is felt on micro-climate of the region by creating essential cooling corridors. According to Papatheochari (2011), Jones (2007) and Goddard (2002), the most pronounced benefits urban waterfront regenerations are improvement of water quality and water ecology by means of the advanced management and improvement of the environmental conditions (Timur, 2013). The moving water adds vibrancy and excitement to the space, while the stagnant water creates mirror effect in its space and adds visual comfort. According to Onen, (2007) water as a design element comforts physical and psychological conditions of humans. In one hand, there are the aesthetic ones, namely visual, audial, tactual and psychological effects; in the other hand he lists the functional conditions related to the climate comfort, noise levels, circulation effects and recreational aims.

As the globe is warming and more people live in cities than ever before, the urban heat island phenomenon needs to be faced by simple and well-established practices during the design. This include measures to minimize hardscape and incorporate more natural and permeable surfaces with a view to reduce the amount of the heat absorbed by the manmade environment (Arup, 2018). Water provides cooling and thermal comfort on neighbouring walkable areas by acting as a permeable "material" in the city scale. It manages to regulate and moderate the high temperatures through the phenomenon of evaporation. In parallel, provides moisture which is considered essential in dry desert areas for the development of any form of natural flora. As monitored in other arid cities in Australia, in Adelaide particularly (ibid.), urban cooling experiments have achieved a temperature reduction of over 4 degrees celsius during hot periods. According to these, one of the keys in maximising urban cooling outcomes is to integrate cooler large open space areas usually with green infrastructure; artificial water bodies can also be considered in the same direction.

Yet, the concerns on the coastal development are alarming because of the growing carbon foot print on marine eco-system. Hinrichsen states that coastal regions have emerged as the primary human habitat containing, on less than 10 percent of the non-polar land space, half of the world's people (Hinrichsen, 1998). The impacts of the artificial waterfront including land reclamation, artificial islands and canal developments, are criticized as being interventions of an enormous scale, provoking severe pressure on natural environments and often poorly conceived from environmental perspective (Hanneke Van Lavieren, et al., 2010). Looking into the environmental perception of waterfront development, the Gulf region is no exception with respect to coastal development. The marine and coastal zones of the gulf are an integral part of the natural and cultural environment. Among the results of the detailed research studies (conducted by UNU-INWEH during 2006-2009) on large off-shore reclamation mega-projects in Dubai, UAE, some findings are of special interest in regard to bringing water bodies into the urban fabric:

- There are direct and indirect effects of increased sedimentation and changes in water quality that threaten the remaining reefs in the Gulf to degradation or even to disappearance;
- Unless being closely evaluated prior to construction, the widespread preference for designs featuring blind channels leads to poorly circulating water and

4 Nadeem Hanif, Amna Ehtesham Khaishgi and Michael Fahy 2017."Affordable homes plan a good fit for Dubai", March 13, 2017, https://www.thenational.ae/uae/government/affordable-homes-plan-a-good-fit-for-dubai-1.63845

creates a potential risk for eutrophication, anoxia or algal blooms in and around artificial waterfronts;

- With appropriate design, breakwaters can act as engineered artificial reefs that mitigate the habitat loss and support diverse benthic communities with demography and growth rates comparable to the natural reefs.

Absorption of water as an artificial element into urban fabric

The following paragraphs are presenting the three case studies (figure 1) within the context of social, economic and environmental factors, which reflect the authors' purview towards these developments.

Dubai Water Canal

One of the recent city scale interventions expanding on thought of artificial water canal developments is Dubai Water Canal (DWC - figure 2) a 12 km long landmark connecting Dubai Creek into the Gulf Sea. The brainchild of ruler of Dubai, the development's secure and socially inclusive transit and mobility improvements, along with its high-value waterfront property is attracting new residents and investor's worldwide. Dubai Creek, which spans from Al Shindagha in downtown Bur Dubai till Ras Al Khor Wild Life Sanctuary, is now expanded to the Gulf improving the water quality, and offering possibilities of marine transport, real estate and tourism. Dubai Canal is divided into two major parts with respect to Sheikh Zayad Road and is owned and developed by different developers. The area around Dubai Canal which is abducting business bay area itself is expected to house a population of 135,000 and 200 buildings.

DWC is envisioned as an important element in Dubai's growth as well as city's image and identity. It is a large-scale urban intervention used to regenerate already existing mix use neighborhoods. Its proximity to the downtown has helped in its emergence as outstanding hotspot in attracting residents and tourists. The scheme of development around DWC is predominantly a mixed-use development with elaborated public realm towards canal side. It includes various land uses such as recreational green spaces, residential, commercial, offices etc. interacting with each other, and at the same time exposing the residents and tourists to waterfront living. The adoption of this scheme helps the city in the distribution of its public spaces and promotes decentralization by accommodating high rise mixed-use buildings. Furthermore, it adds to the publicly accessible waterfront of the Emirates. The DWC stretch is expected to accommodate 9 marine stations with a vision to expand the existing marine based public transport network connecting Dubai Creek to the rest of the city (Khaleej Times, 2018). The canal could be crossed through numerous pedestrian bridges enhancing on the pedestrian connectivity across both waterfronts.

Part of the development plan for DWC (currently published) is expected to accomodate 5,000 residential units with 5 marinas in addition to over 900 hotel rooms. While little is known about the economics of the DWC, the projects of this scale are of huge benefit to the local economy and will assist in maintaining economic vibrancy with its commercial, marina and residential real estate. The 6.4km of waterfront creates 80,000 sqm for public space and facilities, plus a 3km running track and 12km cycling path (RTA, Accessed: 2018). According to master planner AE7[5], the broad walk planned along the DWC accommodates 2 levels; one level provides unobstructed view to the water, housing outdoor café seating and outdoor shopping space, while the other level provides uninterrupted walking path for pedestrians. The boardwalk, extends from Jumeirah Beach Park to Business Bay, passing through Safa Park developments. Waterfront feature is one of the key factor for DWC that enhances its retention ability for the development, in addition to the locational advantage and the connectivity alternatives provided (major roads, marine transport, pedestrian and cycling networks). With increase in mixed use marina developments, Dubai is positioning itself as one of the leading maritime destinations in Middle East.

The master planner for DWC states that this development is an intervention to provide a

5 https://ae7.com/project/dubai-water-canal-boardwalk/

natural solution to clean existing Dubai Creek which is too deep to be cleaned naturally[6]. In addition, this canal is believed to improve the quality for the entire waterway by 33% with the entire system being turned over every quarter. Dubai canal has increased flushing and estimated 20% reduction in retention times inside Creek (Ramsar, 2017). A mechanical waterfall (gets switched off when motion sensor detects a boat nearby), part of the development, is powered by 80 water pumps assists with water turnover in addition to acting as a tourist attraction. However, detailed studies are needed to understand the development intervention and its impact on the marine ecosystem.

Sharjah Waterfront City

Sharjah Waterfront City (SWC) is being developed in the emirate of Sharjah on the northeast coast with a vision to be established as mixed-use waterfront project, covering an area of about 5.6 million square meters along 36 kilometers of waterfront. The modern nature-inspired city is a natural land where channels were dug to operate 8 islands (figure 3). These channels are at a distance between 100 to 400 meters creating a long coastal land. It essentially consists of multi-use residential development catering to around 200 towers for residential and commercial purposes, apartment buildings, hotels and service apartments, around 1,100 water-front and park-side villas, marine clubs, water theme parks, shopping mall, entertainment centers, community facilities like mosques, schools, banks, stores, restaurants and cafeterias.

The location of SWC has been chosen based on the fact that Sharjah enjoys better yield when compared to Dubai and Abu Dhabi due to the lower land prices. Situated on the northeastern coast of Sharjah, the waterfront development overlooks the Arabian gulf on its western border. Located at about 4 km distance from the nearest emirate Umm Al Quwain, and in nearst proximity to airport,the development is easily accessible through Ittihad road, Emirates road and Mohammed Bin Zayed road. The maritime character for the SWC is generated by the canal development that runs through all the eight island - communities. This development provides housing opportunities ranging from high rise apartment housing to private villa plots. According to Sharjah Oasis, the developer for SWC, the ownership plan for the development is limited to Arab nationals on a freehold basis while other nationalities can purchase homes on a 100 year lease[7] (Jennifer Gnana, 2018). However the rental opportunities on such properties is still open and hence the scope of having a mixed social structure with various nationalities can still be expected. Sharjah has a growing population of around 2 million that is overwhelmingly expatriate and much of Sharjah's real estate remains geared towards affordable housing for expatriates who live in the emirate for its low cost of living but are employed in Dubai (ibid.). Because of that, this development is expected also to contribute towards expanding housing reach.

The retention capability of this development banks on the strategic locational advantage, nearness to Dubai, connectivity through three major road networks and its serene waterfront environment. SWC master plan reflects a mixed use development accommodating various types of land uses other than residential along with provision for ancillary facilities. Its nearness to the Hamriyah free zone and port can be an added advantage. In addition to the quantifinable benefits, such investments into waterfront development have casted a positive impact on quality, image and profile of the cities which in turn attracts toursim, investments and economy stregthening proposition.

SWC developer states that the development is environmental friendly and it is based on hydro mechanic design. The clean seawater in the channels is renewed every 12 hours in line with the natural tide of the Arabian Gulf (Kumar, 2018). The channels and foundations in the development have been covered in geotextiles, which will help absorb pollutants from the water, as well as shore up and strengthen the piling and foundations around the project and prevent soil erosion.

6 https://ae7.com/project/dubai-water-canal/

7 This is in response to a recent law permitting anyone with a valid residence in the UAE to buy property on a 100-year lease but not land.

Ghantoot Hotel and Resort

Ghantoot Hotel and Resort development is located nearby Ghantoot Village - Abu Dhabi Emirate, within a rapidly suburbanized rural area between Abu Dhabi and Dubai and is expected to function more like a second home resort. This private residential development is planned to be a completely artificial canal estate development of an impressive 20 km waterfront within a just 1.3 sq.km property. It will accommodate 800 luxurious residential plots of different sizes, a hotel, a family park and ancillary facilities like community centers, mosques, local retail shops and pocket parks organized into cluster-hubs to support the finger-shaped neighborhoods. A marina with a promenade will be constructed over an existing breakwater for a limited number of large vessels, while each plot will have exclusive access to the quay wall and the opportunity to have a private mooring for a small boat. Manazel Real Estate[8], the developer, aims to deliver an experience powerfully associated with the spirit of the local culture, the pleasure of predominant maritime activity, namely navigation, for all the occupants. It is designed to be a gated residential resort, where the developer targets elite group of people to avail housing opportunity.

GHR is highly driven on the advantage of open sea front and, at the same time, on the exclusive canal front access to all the plots. Being a gated community, the access for the public is limited to the hotel, which is one of the key attractions for the development. In addition to the community based facilities, the residents and their visitors can enjoy pedestrian and bicycle ways along the parks and the open spaces of the community, as well as canal navigation using their private boats. A series of pedestrian bridges integrated into the pedestrian network cross the canals enhancing the connectivity between the clusters. These provisions makes this development diverse specifically in terms of transport networking.

GHR, housing nearly 5,000 residents, is actually a low density development ranging from townhouses to three bedroom villas. Its opportunity of retention capability is based on the uniqueness of private berths and navigational opportunity, making it different from the other developments. With its style and scope, it is considered to be a point of employment generation and regeneration, and contribute to the touristic product and the economy of the Emairate[9]. The ownership of plots in the development is not foreseen to go any different from the scheme presented in *SWC* due to the prevalent local regulations.

Based on the master planner's information, Dorsch Gruppe Middle East, the existing sandy coastline will remain untouched. A hydrodynamic modelling conducted upon canal design completion, which cited the need for mechanical system support in order to prevent stagnation of water in the canal and allow circulation in the channels.

Conclusions

The literature review on the sustainability of the artificial waterfront and canal developments has illustrated that the presence of water in the urban fabric spotlights a positive implication on the developments around it. Environmentally managed waterfront areas presented opportunities for social activities casting positive impact on the community. Presence of water provides scope for healthier living environment, visual comfort and could enhance existing urban environment. These facts are reflected in the case studies as "luxury" that create high leveled land values of the canal estates and the main drivers behind the state initiatives in diversifying the urban environment while strengthening the city's economic activities.

The authors brief this preliminary study by selecting certain fields of indeces, based on the applicability to the case studies presented and the availability of data. The aim is to further contribute in examining the performance of the artificial canals and waterfronts initiatives, both as design features and as elements of the generated urban fabric.

8 http://manazel-re.com/residential-projects/

9 https://www.thenational.ae/business/property/manazel-plans-major-tourism-project-in-ghantoot-1.30860

Society

Showcased land use models represent strong interaction between various factors of social dimension that contribute towards quality of community living. In SIA, various impact categories could be analyzed based on different uses, thus the procedure should be adapted to fit and focus on the case of artificial waterfront and canal developments. The following range of indicators were singled out to study the social impacts on the case study areas.

1. Resource and Identity
   - Main characteristics and strengths of the area;
   - Significant identity towards environmental, cultural or historic values;
   - Significance to the visual, social and cultural identity (city image, community identity).
2. Social status
   - For whom (social, age or ethnic groups) are the housing and service areas planned and built;
   - Role of social/private housing.
3. Waterfront experience
   - Interaction with the water element (sea, lake, canal, etc.);
   - Restorative experiences importance of visual messages physical touch, tasks, noises, movement, sense of transition as identification.

Economy

When the three case studies are studied under the economic dimensions, the presently anticipated results show that the artificial waterfront developments reflect on the property values, tourism sector, employment, which in turn reflects on the economic development of the city. Hence, the fields below can be chosen later on to perceive the economic context of the three case studies.

1. Capacity
   - Population retention;
   - Housing affordability.
1. Economic input
   - Ability to create jobs;
   - Capacity to stimulate investments;
   - Ability to attract tourists.
2. Economy Output
   - Appreciation in property value;
   - Other economic outputs like taxes on real estate.

Environment

By the nature of the case waterfront developments, the land use applications may not cause a severe impact on the marine ecosystems. However they consist of an extended human intervention and their set up will leave considerable foot prints onto the natural ecosystem. In parallel, they showcase a contemporary opportunity to enrich the urbanization process with manmade urban ecosystems, in the early design stages. From the literature review and context to the case studies, the following areas of indices can be considered towards environmental contribution and performance of the artificial waterfront developments.

1. Micro climate
   - temperature
   - wind circulation
   - sun exposure
   - urban heat island effect
2. Marine ecosystem

- canal aeration and eutrophication
- water temperature and quality
- water flows and canal circulation

3. Considerations towards urban ecosystems
   - birds attraction
   - fish and marine life
   - green urban zones

The study arrived through this paper is not conclusive in totality and not empirically or methodologically comprehensive. The research conducted so far aims to illustrate the background and provide an understanding of the artificial waterfront and canal developments within the context of social, economic and environmental dimensions. The preliminary outcomes should be seen as test cases for applying indices in analyzing these or similar developments. The three case studies in UAE presented here are still underdevelopment. Hence thorough further studies are required to monitor and analyze their implications, not only in and around the developments, but also regarding their contribution to the overall performance of the existing cities and the newly urbanized areas.

Figure 1. Location of the case studies (source: NordNordWest/Wikipedia; last accessed: June 2018; processed by authors).

Figure 2. Locational context of Dubai Water Canal (source: 329258E and 2790754N. Google Earth.4/8/2018. Last accessed: June 2018; processed by authors).

Figure 3. harjah Waterfront City 3d illustration (source: http://designmena.com; last accessed: June 2018).

Figure 4. Ghantoot Hotel and Resort model captured during event "City Scape Abu Dhabi 2017" (source: authors' archive).

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The future of marginal and residual spaces in contemporary peri-urban landscapes

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In the last years, the topics of regeneration and transformation of peri-urban borders have assumed an extraordinary relevance. On one side the excessive soil consumption has obliged to reduce the advancement of urbanisation processes, to preserve permeable soil and guarantee the minimal continuity of residual open spaces.

On the other, there has been growing evidence of marginalisation and decay in the existing borders that claims for reinvention and reevaluation of open spaces and city fabric. Those are topics that introduce a relevant material for the rediscussion of the role and the limits of open space design in the contemporary cities and highlit some ambiguities that require a cultural and theoretical realignment. It can be noticed the existence of an unmotivated disjunction between the physical reality of the built environment and an idealised concept of landscape as well as an evident ambiguity in the definition of the notion of nature.

In addition to this, it is indispensable reflecting on the role played by infrastructures as substantial elements of these territories. The contribution addresses these topics to the attention of the conference presenting some studies, analysis, and strategical proposals developed during the last decade in Milan and its metropolitan area.

Here the limits of the cities are faded in the residual open spaces where the traces of the previous territorial organisation are still visible. Territories that are cut by new and old infrastructures were vast industrial brownfields demand recovering, reuse or renaturalization. Obsolescence, neglection, abandonment, and diffused marginality are the topic where landscape and architectural design can still offer a possible future.

Today there has been a growth of interest in the topics of the regeneration and the transformation of peri-urban borders. Such attention can be related to a plurality of concurrent factors. For this reason, the critical debate on these territorial materials implies the necessity to deepen some probable reasons justifying such interest, to recalibrate the cultural terms involved in the debate, and finally to present some possible strategical approaches.

In fact, the design interpretation of the highly urbanised regions surrounding the major settlements implies an extensive revision of the cultural models inherited from the traditional disciplinary references, in favour of a more inclusive view on landscape. In these territories, limits are faded, coexistence and confusion are dominant and the whole pattern is unclear and unstable. The traditional opposition between urban and rural has ceased to exist since a long time. The dense traditional urban fabric has been replaced in place of a different concept of density based on the dilatation of distances. Here, in the place dominated by connecting infrastructures, the role and meaning of open spaces have undergone a constant change, losing of significance and progressive decline. These complex fields are difficult to understand and describe, as well as, because of their ambiguity, improbable to classify using the classical vocabulary. This paper tries to offer a possible view, discussing some theoretical questions and building a comparison with some research by design experiences developed around Milan.

A short trip in a standard scenario

Moving outside the city the reassuring succession of row houses started being discontinued. Old blind facades, with weak and peeling plasters, suitable only for billboards, were still waiting to accommodate other buildings never arrived. The interstitial spaces, occupied by leftovers of small productive activities and old mansions were still surviving to the urban growth. Vacant plots were unreasonably left to their destiny. Around there were some new buildings, breaking the friendly structure, like wedges in the voids, partially masking the nudity of the neighbouring fronts.

This was only the premise to a quick change of condition. After crossing the bridge on a small river, which was like sewage, the street surroundings became being variable.

The limits were faded, the space of the street grew incredibly. On the sides of the main lanes, a succession of spaces with variable depth and uncertain character preceded a varied succession of buildings. Here the most forbidden dreams of building contractors have become a reality in the form of unqualifiable architectural pieces. Massive brutalist blocks interrupted by clear crystal prisms were counterposed to hybrids post-modern linguistic experiments. This scenario appeared completed by private gardens full of trees, and concrete paved public parking areas, with rows of "ball-style" street lamps. Morphological and typological constants, rhythms, harmonies of the old city: all disappeared.

Immediately after, on the right, like a mirage, a dense scrub of trees partially covered a well-organised group of modest but fair buildings. It was a social housing complex from the fifties, once isolated in the peri-urban landscape. A little further on a group of towers emphasised the presence of a modest park. From the car, behind the bushes, it was possible noticing two battered swings and further an almost crumbling pedestrian bridge. It probably crossed the same derelict river we met before. Almost immediately a timid reappearance of row houses seemed to demonstrate the presence of a historically sedimented place.

Tha car was finally reaching the ring road that leads to the highway.

Some semi-abandoned industrial buildings appeared as a counterpoint to shreds of scattered agricultural fields on both sides. The view of a row of trees mirrored in a moat returned the sense of the original landscape. It was only a transitory image, lasted few seconds, because immediately the car was swallowed by the fast road junction.

The landscape of fringe belts

The scenario just now described is not far from the typical situation prevailing in many Italian and European cities. In fact, the progressive abandonment of the standard block type pattern, typical of the nineteenth-century city, has allover produced a decrease of

compactness in favour of dispersion. The result is from case to case variable, but almost everywhere characters and shapes produce a weak condition, where city users are still looking for a "traditional" urban realm, that is missing. All these aspects are emphasised in proximity to urban borders and fringe areas. Here the condition of dispersion is more critical because of a high level of contamination between different categories of spaces, and as a result of the degree of incompleteness of some parts.

The responsibility for the production of this condition is difficult to ascribe. Undoubtedly a crucial role has been played by urban and design theories that revolutionised the traditional idea of the city in favour of new models. As noticed by some scholars the progressive abandonment of the human scale of the old city also depends on the technological advancement of the first half of Twentieth Century. The diffusion of cars has undoubtedly increased the possibility of movement, allowing the growth of distances, as well as new space requirements. All factors that match the model of the diffused city (Gehl, 1971, 2010).

Looking at the physical conditions of fringe areas sometimes leaves astonished, and it appears unbelievable that such squalor can derive from a planning action. In this sense, it is necessary considering the complex interaction between processes of territorial economy, social dynamics and development, as well as transport and logistics system; all components strictly linked but not synergic in their reciprocal work. As a consequence, it appears a striking distance between the ideal forecasts and the actual results of the development, with results that are not gratifying compared to expectations.

Despite described in a rather simplistic way, this complicated relationship between project, territory, political, economic and social issues is crucial, and it is manifest in multiple phenomena regarding ordinary life. The image of a car-dominated scenery, for example, is well expressive of the suffering that contemporary humanity experiences concerning the spaces of dispersion. Moreover, it represents a cultural failure and highlights the necessity of "a new planning dimension", recovering the human scale for a more "lively, safe, sustainable and healthy city" (Gehl, 2010).

This problematic condition has a quite long critical history. The change in scale between the compact city inherited from history, and the dispersed form, typical of the developmental era, has been underlined more than thirty years ago (Choay, 1992). A little later this physical entity has been named as "urbanised territory" (Turri, 2000). More recently there have been many experiments in describing these territorial materials where it is difficult to identify borders, to highlight a centre, to recognise the thresholds that allow the distinction of the parts (Boeri, 2011). Meanwhile, it has been made recurrent the idea that "the future city will be that one built on the already urbanised territory" (Sotoca, 2012). Thought that opened a season of investigation of topics related to the possibilities of regeneration, recovering and reuse of existing buildings and fabric (Muck and Heilmeyer, 2012). Furthermore, the necessity of preserving virgin soils as an ecological and environmental resource for urban areas has imposed new rules for land use reduction.

Reclaiming fringe belts

This set of factors, as well as a diffused economic crisis, has imposed a rethinking of policies, processes and ways of development. As a result, it is undergoing a profound revision of the meaning of existing or potential void spaces characterising urban fringe belts.

The situation already described is clearly showing the existing of crisis phenomena that requires a consistent shift in the management of space. It is mandatory finding out a new concept for the scattered peripheries around the cities. The same idea of relationship must be upgraded, basing it on weak textures instead of massive connecting infrastructure. In the same way, the meaning of spaces and their hierarchy has to be revised, breaking the dominance of buildings in favour of open spaces, using landscape as the mean to give back form to the city (Corner, 1999; Waldheim, 2006). Similarly, the time of the transformation needs to increase, allowing sedimentation of ideas, choices, and processes. This goal can be obtained, first of all, revising the old vocabulary used to name the traditional city, assuming the ambiguities of fringe spaces as the starting point for a theoretical reinvention or realignment.

Fringe areas are unclear, and this character makes the traditional vocabulary uncertain if applied to them. For instance, the idea itself of the piazza, frequently used for a generic public space, does not correspond to the meaning, the morphological quality and the scale of the historical one. Here thinking on urban fabric in term of form is impossible as well it is almost unrealistic reasoning on scales and proportions. Distances are augmented, limits are faded, the compactness minimal, and the possibilities of geometrical relationships very low. After a long time of experimentation, it can be noticed that the attempts to re-shape the morphology of diffused city working on the vocabulary of the old urban form are widely failed. For this reason, the quality of traditional public spaces obtained from the generic city is even so poor.

Some key-concepts on open spaces in peri-urban borders

The character of ambiguity it has been already underlined can be applied to the open spaces of the fringe belt areas. As well as for public spaces and urban fabric a new vocabulary is missing, and the traditional definition does not work with the real meaning.

There are at least three main words/concepts that should be briefly analysed.

The first is the concept of "void". Premised the vagueness of this term, the idea of "void" as "emptiness" (like a vacant lot, an interstitial space, or an open urban area) always refers to the fullness of the constructed fabric, and it rarely represents a problem in the traditional city. Vacant or interstitial places were historically waiting to be filled by new constructions, and, in contrast, open spaces were private or public gardens offering a controlled, measurable break in the compactness of the cities.

As opposite, the fringe areas offer uncertain voids, reluctant to be categorised into specific types. Some of them are merely areas that have escaped the building process, resulting as vacant lands. In this category, they can also be considered the numerous areas resulting from demolition processes. Together with this, the majority of these unclassifiable "voids" are the result of planning rules and urbanisation processes. Indeed, the demand for public green standards has produced a constellation of separate fragments and degraded areas, including countless piazzas without sense and meaning. In the border areas are frequent also interstitial agricultural lands. Those are only partially active spaces in which the ancient functional vocation persists, including pre-existing signs and traces of the agricultural palimpsest (Dondieau, 2006; White and Przybylski, 2010). This complex mosaic is completed by many other residuals produced by infrastructural design. These fringes should be not confused with the spaces placed alongside roads designed according to a late nineteenth-century style that included large parterre, quays, strolls, today improperly used as parking areas, unrecognisable, and waiting to be recovered.

Fringe belts voids are demanding new ideas and use for these voids. The peripheral city should be redone starting from the design of new narratives based on open spaces. The traditional separations between streets, sidewalks, public and private green areas must be reviewed and modified in favour of a more complex and rich dialectic, that includes the creation of green masses, a sort of "vegetal blocks", obtained between the voids, through the concentration of trees, up to overturn the traditional figure-ground concept: a green morphology to restore the city.

The second topic that requires rediscussion and cultural realignment is that of landscape. This concept is subject to a complicated history, strongly influenced by national cultural backgrounds, and despite the attempt to give a unitarian definition through the European Landscape Convention, it is still full of ambiguities. It is common assisting to an unmotivated disjunction between the physical reality of the built environment and an idealised concept of landscape. This cultural approach is evident in the fringe belts areas. Here the existence of various sized open spaces, including several agricultural territories, moves the public attention towards the preservation of the ecological values and the primigenial characters of these areas. That is evident in the diffusion of a multitude of peri-urban parks, grew up to protect and preserve these relics. Indeed those are great initiatives, that "saved" essential parts of the territory, but on the other hand, it is indispensable moving the general and specialised attention toward a more inclusive concept of landscape. The task is that of breaking some

barriers, making clear the idea of landscape as the totality of the territory, including the relationship between built parts, open spaces and infrastructures, their quality, mutual interaction, formal and aesthetical values. This view is aimed at clarifying that the landscape is not one "aspect" or a "part" of the environment, as often affirmed by some ecologist branches, but a more complex and historical notion, that includes a fundamental aesthetic analysis and the sum of multiple cultural values (Roger, 1999).

In this sense, it is imperative also reconsidering the role and meaning of nature.

Finally, the last key-topic for fringe belts it is contained in the concept of relationship. The process of recovering of peri-urban open spaces should be set up from a strategy of relationships. These will consists of, not only physical connections but also perceptive, sensory, environmental aspects. The generic city does not offer a variety of experiences. Walking in the fringe areas is hugely annoying because their city realm was not though for pedestrians. There is always a direct correspondence between streets and walkways. The atmosphere is messy, congested with cars, sometimes noisy. The scale is dominated by bigness. People do not feel safe. Public leisure areas and open spaces are excluded from walking routes, frequently are fenced, insolated from daily pedestrian movement. Varying the route trying to cross them is inconvenient, and the experienced offered does not compensate the efforts because of the laking of interesting points and the elementary and poor design. Despite some exceptions, broad interstitial agricultural areas are not accessible. Highways and ring-roads impose themselves as insurmountable barriers, surrounded by a halo of horror, made of waste spaces and squalid technical components, unable to build a pleasant aesthetic reality.

Building new relationships means collecting all these elements of friction, ways of use, spatial conditions and materials, trying to recycle them for a new general plot. Like in the process of montage the design will recombine all the ambiguities, working on the scarceness of fringe areas; increasing density, frequency, intensity and complexity of relationships.

Strategic design experiments in the Milanese region

Some strategic design experiences conducted in the Milanese region offer certain primary occasions to describe, understand and forecast the transformation of fringe belt areas.

The conditions are similar to those of the generic fringe territories previously described. The possibilities of perceiving the landscape are absent. Everywhere dominates atopy and generality, some identitarian elements and architectural emergencies disappear in the accumulation of ruins that these places evoke.

The experiences, developed on occasion of two research experiences of relevant national interest supported by the Italian Government, focused on Milan's west border (PRIN 2008), on the Metropolitan City of Milan in Magenta, and the context of Bergamo (PRIN 2010-11). Despite the differences regarding time, place, and research topics the three cases are significant compared to the themes of this paper because they allow a comparison, useful to acquire some generalizable indication for the study and the strategical design of peri-urban borders. The three geographical conditions, although territorially close, offers multiple views on the typicalities of fringe belts. Milan's west border provides a focus on the typical assets of the metropolitan peri-urban areas, grown up to incorporate the neighbouring centres, and developed along radial and annular infrastructural systems, within a dense fabric where persist some residual interstitial agricultural areas.

The situation of Magenta, in the Metropolitan Region of Milan, offers another view on fringe belts areas. Here critical infrastructural corridors superimposed themselves to historical axes, still significant in the territorial order. The territory offers, together with some significant agricultural landscape, brownfields areas that require the development of recovering strategies for a vast area.

The condition of Bergamo, autonomous reality in the context of a dense and connected territory, allows a reflection on the relationship between industrial dismissions, residual open spaces and urban fabric. Significantly a minor reality offers similar topics for comparison with larger scale situations.

Here the aim is not offering a detailed presentation of these experiences, already

commented and described, but highlighting some clue-topics essential to establish a methodological approach for the recovering of fringe belt landscapes.

At first, it should be highlighted the importance of description. Despite traditionally considered as a tool, limited to approach the context to take design decisions, today this process of knowledge should become a public, shared and fundamental, part of each strategical design process. Indispensable resource to explain the critical position assumed, to illustrate it and to explain the relationships between place understanding and design choices. Deepening the knowledge of peri-urban borders requires encouragement of use and innovation of descriptive tools. The experience developed has been based on the use of maps in combination with photographic sections to maximise the effectiveness of the description. Maps, selecting, highlighting and hierarchically ordering, show the real consistency of the parts, emphasising factors of absence and future possibilities. Photographs allow the acquisition of a sequence of critical points of view on the landscape. Together the two analytical tools avoid the possibility of separating the perceptual reality from the synthetic and abstract vision.

The process allows deepening the complexity of fringe belt areas, building a catalogue of ambiguities, ready to be reordered through design.

The second aspect that emerges from these case studies is linked to the sense of impossibility that distinguishes the recovering of periurban landscapes. Traditional tools and qualifying categories, like scale, measure, morphology, cannot be applied.

The developed experiences demonstrate how the idea of relationship can be assumed as a first tool to establish some form of hierarchy in a too generic totality. Consequently, the design in peri-urban areas should be set according to a multiscale logic, starting with macro-actions in the broad area, going then to focus on local implementations. Recovering fringe belt areas imply the idea of working prevalently on open spaces and, if possible, at the ground level of buildings. For this reason, it is fundamental to reconsider the concept of relationship, concentrating all the actions in the design of the ground. The horizontal surface increases its thickness allowing a complex narration. Spaces should be strongly characterised, with the intent to build a rich plot, calibrated on every possible use and able to offer multiple experiences. This aspect obliges to consider a visual rearrangement of these places, aimed at characterising the landscape, offering some identification elements, ordinarily absent. Likewise, it stimulates to include new forms of public green, including the possibility of dense episodes. Not walkable woods, capable of constructing visual and physical limits in contexts predominantly horizontal.

Another third essential aspect pointed out by the research it is related to the question of time. Some proposals have been developed focusing on this question. Thus produced the idea of an incremental project for the reflexive transformation of fringe belt landscapes. The actions follow each other, with various steps to test and verify the effectiveness of the interventions. This necessity derives from the ascertainment of the failure of an "accomplished" idea of design that characterised a long season of architecture. Consequently, it consists of an "open" hypothesis, able to respond flexibly to the solicitations that may incur.

Finally, the future of fringe belts area depends also on a firm intention to replace some models inherited from the consumer society. For instance, one of the most problematic conditions afflicting peri-urban contexts is related to car's congestion. Accordingly, a useful infrastructural project finalised to implement an active, sustainable mobility system, should act as an engine for the landscape recovery.

Abandoning the Romanticist perspective

Sometimes it worth questioning if our century would be decisive in breaking a deep attachment in romanticist feelings towards the past and the tradition. If this also happens the destiny of fringe belts will be more clear. In other words, the future of peri-urban areas is strongly dependent on a shift of perspective. To stop looking at the historical city as a model and to invent a new city on the ashes of our suburbs is the starting point of a new renaissance. This paper points out some aspects that are fundamental to opening this new phase. First of all, it proposes to re-examine fringe belts areas through an accurate description.

Second, it indicates the question of open spaces as crucial and decisive compared to built spaces. Meanwhile, it underlines the necessity to create the landscape of peri-urban borders, revolutionising the idea itself of public open space, working on the hybridisation and the identification of forms of coexistence and distinction between spaces of diversified nature. Last, it evokes the perspective of open processes and development phases based on medium and slow time as opening for a more meditated development.

Figure 1. Milan's West sector: frictions, ambiguities and contraddictions. (Credits: Author).

Figure 2. Milan's West sector: a new strategy of relationship. (Credits: Author).

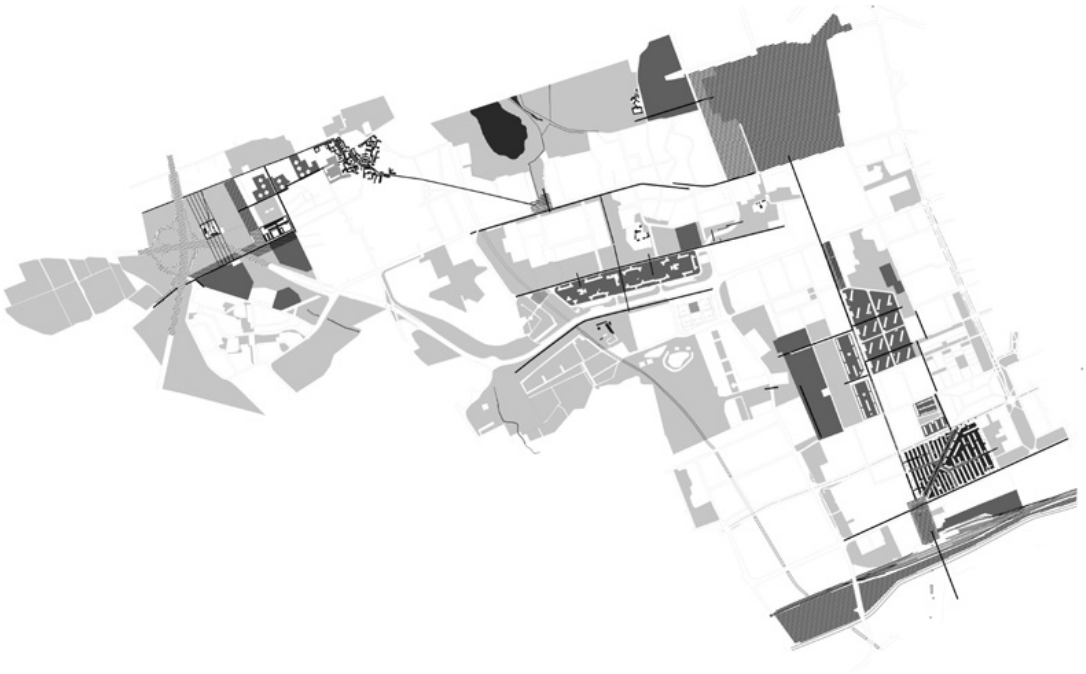

Figure 3. Bergamo, Area O.T.E: Incremental recovering process. (Credits: Author).

Figure 4. Magenta: Landscape porosity in brownfield recovery. (Credits: Author).

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Spatial design, planning processes and literary works on cities: an ontological approach for integrating heterogeneous knowledge

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The aim of this research is to set up an ontology-based environment where to disambiguate and to share different perspectives and different relevant terminologies belonging to possible different agents involved in a spatial planning process. Spatial planning tries to manage complexity as the result of a recurring interaction between collective knowledge and the desired results: this requires a conscious and unambiguous knowledge sharing as the foundation of decisional and design dimensions.

In this framework, the work proposes an ontology-based approach. Our focus is the domain of environmental and urban planning. To operate within this view, an unambiguous knowledge sharing mechanism should provide the basis for the political, decisional/ strategical and design dimensions (Stufano, et al., 2017; Lapintie, 2011).

This methodology could be a strong support for sharing knowledge during planning and design processes. Technical agents like administrators, politicians, architects, associations and corporations rely on specific languages whose terminologies, although addressin, the same city and its artifacts and processes, can be effectively understood only adopting their background knowledge and objectives. For an example landscape is a word belonging to poetic, narrative, descriptive language and to many other languages, and it is used with non-coincidental meanings by different technical and not technical agents (Settis, 2017).

This means that crucial (and less crucial) terms (or allocutions) like landscape, transportation and sustainable development, as starting examples, although shared across agents, are far from being neutral and can be sources of subtle misunderstanding and mismatching. An effort towards terminology clarification and shared understanding is needed.

1. Introduction

Every city is a special organism. An individuate core of human, non-human animals, matter, dynamics, relationships. Even if historically and socially our western culture has pointed at usefulness as the essential matter or *reason d'etre* of a city, functional views of cities have always suffered of partiality and failed to represent the complexity of the city-system. Our work concentrates on the understanding of the city and for the city (and extensively of the region and of the environment where it stands and with which it interacts) trying to raise awareness of the responsibilities involved in design and planning these systems, like transforming existing natural entities or introducing artificial entities, and of the complex consequences of these operations.

The modularization technique that advises to divide large problems/tasks into small problems/tasks that can easily be controlled and solved, implemented at large in city planning during the XX century, has increasingly showed its dramatic inadequacy. In fact, the subdivision of problems can induce the loss of subtle causal connections that run across modules. The solution to the fragmented problem might be optimal when analyzed from the local perspective, yet failing to achieve the goal in the larger system due to the missed interactions across the subproblems. For example, a city extended on a river system will not cope with this peculiar feature by fragmenting its river network, i.e. without considering the network as a whole, and the network itself should not be modified without an understanding of the impact it has on the different areas. Even light inconsistencies in the treatment of the subareas could soon generate unexpected breakdowns. Studies about complexity and complex systems (White et al., 2015; Kaneko 2006; Bossomaier, Green 2000) have pushed to introduce in the field new knowledge and new research approaches in the attempt to anticipate the consequences of artificially dividing a complex system into small modules.

The work in this paper goes in this direction but departs from the traditional view in important aspects. First, it aims to explore a different modularization approach where the city is seen as an integrated system that should not be subdivided in different ways depending on the type of problem one aims to solve. Indeed, the city has its own structure based on the entities and the relationships that form it; one can meaningfully divide the city into parts only taking into account the nature of these entities and of the connections they form. Without analysing the structural and dynamic organization of cities, their processes and composing objects, any decomposition of the city would likely miss critical interconnections and dependences. Second, the paper aims to provide an ontology-based framework that is general and reusable, in order to help creating a new generation of knowledge-based models and tools for city modelling and simulation. Note that the paper sets primarily the perspective of this novel approach, and does not try to solve specific problems. For this reason it remains at a general, perhaps abstract, level giving case by case exemplifications of different hierarchies of abstraction.

The paper is structured as follows. The second section deals with issues and methodological notes concerning the building up of city ontologies. Section three introduces narrative literature as possible knowledge source of the city, particularly discussing the outcomes of ad-hoc experiments. Brief reflection notes end up the paper, envisioning potentials and perspectives.

2. Ontological analysis and the construction of an ontology for cities

2.1. Questions, views and problems

Among the experts as well as the laymen there is substantially low interest to questions about the essence of cities, perhaps due to the complexity of the object at stake. Yet, in our view, this is the kind of questions one should face when seeking hints for new technical reflections. The needs are not only towards a more integrated approach: what seems necessary is an approach that is also operational, which means that it can lead to a different management of planning decisions and strategies for cities.

One problem in dealing with cities is the huge quantity of data that a city generates. In literature one can find a number of products that aim to deal with these data and information, and in the management of data and information one often uses an ontology to ensure

interoperability. However, there are two general ways to understand the use of ontology. One is application dependent and aims to build a classification system that fits the experts' view in a possibly transparent way. This leads to the kind of ontologies built in semantic web, sometimes called light ontologies, that is, mainly taxonomies that translate the experts' or users' viewpoint into a computable language (Borgo et Hitzler, 2018). The other approach in ontology research is application independent and aims to build systems that model human understanding of reality at large. The typical outcome of this latter approach is a general ontology, called foundational, which is independent from application concerns and suitable to build a model of a complex system which is not constrained to a specific viewpoint, let it be that of the expert, the user or any other stakeholder (Staab et Studer, 2010).

Following this distinction, the typical models in the literature that deal with data on cities are built having traffic, or mobility, or natural networks, or economics at their core, that is, they are application dependent and are thus capturing a limited perspective of the city. In the literature about the city one can also find efforts to use ontologies to build unified or at least shared bases of knowledge about landscape and regions. The result of these initiatives can be evaluated in the collection of definitions of core elements and their relationships presented in (Ballatore, 2012). Still, the strong interaction between scientific research areas escapes these attempts because of the deep interaction and interlinking across the elements in a city or a land. The adoption of more comprehensive tools seems unavoidable.

In general, we may agree on the image of cities as "hubs for ideas, commerce, culture, science, productivity, social development and much more" and that they "have enabled people to advance socially and economically" (Balula and Seixas, 2017; UN 2016). The challenge is to find a way to make sense of these intuitions from the scientific viewpoint and to develop a language that allows to discuss these views in a coherent and consistent way.

According to a cultural construct, nowadays a city is seen as a substance with shifting dynamic shape, flexible social relationships; a place of individual and social evolution and renewal where different skills are integrated and develop together for a "better life". A suitable management of such a city requires design, plans and actions that are constantly adapted, integrated and implemented while maintaining a clear and fruitful dialogue among the variety of the stakeholders across the different scales (Rabino and Caglioni, 2007)

2.2. *Methodological notes*

An ontology is an explicit specification of a conceptualization. The term is borrowed from philosophy, where ontology is a systematic account of existence (Borgo, 2017; Borgo, 2016) and is enriched with formal and application concerns (Guarino et al., 2009). The role of formal ontology is to analyze, distinguish and coherently integrate together different world views. It is fundamental to distinguish ontological analysis from building an ontology. Ontological analysis deals with the problem of understanding a topic or problem depending on its very nature, so that it is strictly associated with studying that topic or problem and understanding the types of entities, of relationships and the situations of reference that are at the core of it (for example in some domains time is an independent entity, in others a derived relationship).

When ontological analysis has been performed, the next step is always how and for which purpose/use to build an ontology. This step can be seen in analogy to strategic planning for a city, where the quest for 'how and why' suggests to model a scenario as its starting point (Khakee et al., 2002).

Ontology is continuously applied to a lot of domains and helps to clarify and inquire the 'received' or 'normal' meanings provided by the discipline narratives, and often expressed only in natural language. In fact, to model reality one needs a lot of concepts, some of which are technically subtle, that cannot be easily ignored or bypassed in the technical activity – such as an activity of making architectural designs or spatial plans for a city. To give an example, a city definition depends on the perspective taken by the observer which, when analyzed, leads to raise several questions: how many things are involved, what kind of things are involved, and what kind of languages are involved.

Natural language generally uses implicit meanings and hides semantic subtleties, so that it is not reliable in technical work, or at least its reliability does not reach the level demanded by some particular activities (this is the case, for instance, of technical activities regarding city transformation). To overcome this problem, the construction of verbal protocols accord-

ing to well defined norms is often proposed, in order to reduce the chance of ambiguous or even misleading information (Khakee et al., 2002). Rich formal ontologies are particularly suitable for this problems since they enable rich classifications, for instance to characterize the different types of agents that may participate in a process and to classify their behaviors.

Ontology grounds its analysis on the essential properties that an object has, because these allow to keep track of objects' life beyond temporary or minor changes that an object can experience. This approach allows to distinguish types of changes: the change of a statue's color vs the change of a statue's shape (Borgo, 2016).

To take into account situational issues – which can help in conceptualizing reality – ontological information can be combined with contextual information leading to enriched global models which can now embrace different taxonomies. For example, cognitive and artificial agents use both ontological and contextual information to interpret the state of the world they perceive (Borgo et al., 2018). The analysis deals with dependencies and (essential) properties of the variety of entities that one can identify in the city as a system: artifacts, persons (human agents), events, roles etc. The knowledge that the ontology helps to classify about the city has the limitations of human knowledge: the unknown and the unpredictable remain challenging modeling problems (Le Masson et Weil, 2013).

As a city is made of persons, relations, artifacts, the ontology of a city has to be a kind of polyhedral conceptual artifact. When models are used for city design and/or planning processes, the task is specifically difficult, because designs and plans are contingent on the city situation and even goals change over time. Therefore, the use of an ontology for the city cannot disregard the relationships between the given and the changeable in terms of time and situations. The model of the city given by the ontology must be usable according to different and dynamic points of view.

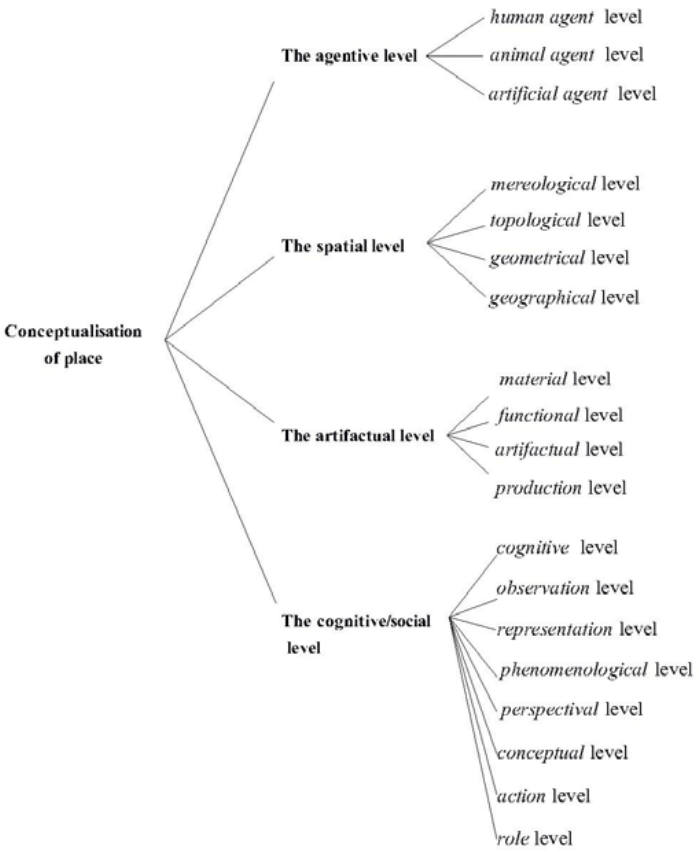
The use of ontology we envision here includes the needs for knowledge management which is characterized by knowledge extension, refinement, modification, or even major reclassification. As such, also the ontology population process must become part of a system where it is possible to design and analyze technological approaches to the city (Holsapple et Joshi, 2004).

Some elements, like time modeling, can be particularly complex to model in a city ontology because of the different types of participants (artifacts, agents, natural elements), the granularity problem and the perspectival dependencies (each cognitive participant has a personal experience of time). Moreover, the modeler has to conceive a way to look at the city and to model the city having a kind of historical sight: filling the model itself with data from the past, the present, and the expected future (near future, deep future, desired future, projected future, undesired – but reliable – future). In some sense this resembles the way proposed by the Geddesian *In-Look* and *Out-Look Towers* in the dawn of the XX century Edinburgh (Geddes, 1915), a vision from a planning Scottish pioneer largely disregarded by experts as exoteric and foolish (Hall, 1992).

2.3. *The path toward a model for the city*

In our previous research we investigated the sense of place focusing on the detection of some objective layers that are identified in a place in general (Stufano et al., 2017). It was a carving up cognitive action about the geographical places to identify all the possible levels that make a place what it is. The first result of this work is a list of ordered levels, reported in Fig. 1, which are quite informative. Yet, the understanding of space from the cognitive viewpoint cannot be reduced to these ontological elements, the ontological elements are agent independent by their nature. There is a strong contextual aspect in the way in which, as humans, we live in places. Here, by context we mean a description (often implicit) of a place that includes at least what we consider the relevant elements in it (Stufano et al., 2017).

Figure 1. Conceptualization of place by ontological levels (Stufano et al., 2017, updated).



From Fig. 1, we can see that the ontological levels have a rich structure. It is also clear that they are strongly interdependent: an action occurs in some material space with its topological and geographical characteristics, perhaps involving artifacts and the performance of functionalities. Furthermore, when there are agents there is always a context and we need to be aware of the contribution of each ontological level when evaluating the place in a context, including the understanding of how it may evolve and how changes may impact it.

The work on the ontological levels is a first approach to the study of places and it is the result of a general analysis. It can be used to deal with landscapes, environmental regions as well as cities. In order to deal specifically with the city modeling, we need to refine it to include specific notions, for example architectural types (classification of places/objects from a global perspective) and architectural rules (from architectural structure to meaning and use). More challenging, in the taxonomy of Fig. 1 we find the agent level which includes the human sublevel. Nonetheless, how this level should be understood is still an open issue. Another challenge, as mentioned earlier, is to articulate and explicate the relationships across these layers. These relationships are fundamental to successfully integrate the human sense of place with the different ontological layers. Once this framework is completed, the following step is to populate the system with actual knowledge of specific cities. At this point, it will be possible to test the system against existing approaches for city modeling.

3. Narrative literature as a source of knowledge about the city

To populate an ontology, one has to collect knowledge, that is, to elicit elements and relationships relative to the city system and its elements and there are already several techniques to achieve this goal (Asim et al., 2018).In this paper, we investigate whether literary products (i.e., romance, poetry, narrative works in general) can be helpful in acquiring general knowledge about the city and, if so, of what kind.

Let us consider these two examples taken from the literature. One is a description of the city of Turin, the other of the outskirts of Bari. These are both Italian cities: the first is a developed industrial city in the north of the country, the latter is mainly an administrative center in the south. The two excerpts are by two Italian writers (Michela Murgia and Lalla Romano) and have a narrative intent: the first is taken from a novel, the other from a sort of travel diary. The two pieces are descriptions and reflections, and their analysis provides a kind of knowledge which is subjective, it is about senses, perceptions, and personal understanding of subtle aspects like the intersections of lights or fragrances: these things are part of what humans consider in their view of a city, or more generically of a place, and the challenge is to find them a position in the analysis and study that affect city understanding and planning processes.

Excerpt 1:

Maria [...] went out alone into the streets whenever she could, cautious but fascinated by the great city. Signora Gentili had told her the strange story of the rectangular street plan of Turin which seemed to have been designed in advance to fit the areas the streets were intended to lead to, on the principle that the citizens had had first to decide where they wanted to go, and only then to start planning and building their houses, squares and apartment blocks; the apparent illogicality of this led Maria to describe it in her first letters home to her sisters as an amusing novelty. This planning down to the last millimetre offended her good sense, convinced as she was that the only meaningful way to plan streets was the way it was in ***Soreni****, where they seemed to have emerged from the houses like a seam - stress's discarded scraps, clippings, and misshapen remnants, taken piecemeal from the spaces accidentally left over after the irregular emergence of the house, which seemed to prop one another up like elderly drunks after a party given by their patron. Marta Gentili explained to Maria that the real reason for the geometrical plan of the streets of Turin had been security, since a royal capital must not offer rebels or enemies convenient places to hide, but this merely reinforced her view that to construct anything so deliberately on the basis of straight lines could only be an admission of weakness: who would ever take the trouble to design such straight streets unless they were trembling with fear?* (Murgia, 2011)

Excerpt 2

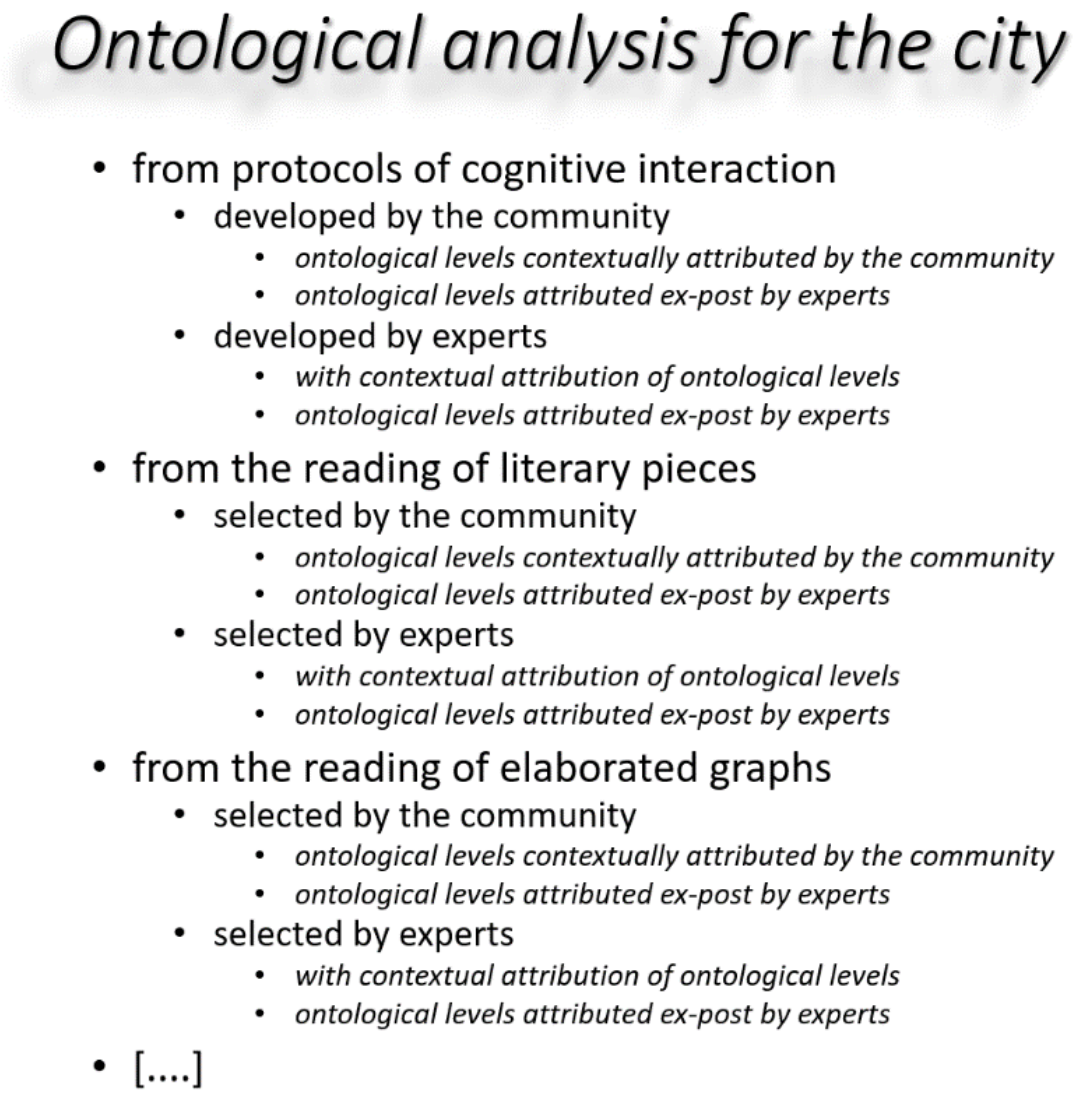
Bari. […] We rapidly walk through the whole modern city: too much Westernized, 'Milanese', for our longing of the East, In the end we flow into a long square, wide, calm. Familiar to me - to me as a parochial – almost if it would really be crossed by me, a lot of years ago, a day of school walk, 'in single file'. We enter, through small streets, the old city; lively and at the same time remote, full of infancy. An irregular small square, strange, wonderful. On one side small houses in a variety of movement and colors, a little bit like a scenery (on the ground rests of vegetables are scattered, after the market); and in front the austere mass of a stone castle. Swabian castle (or Norman: names that call for dreaming). On the first ramp children run, joking and shouting. The Cathedral is impending with its majesty on another country-style small square, little, merry. […] (Romano, 1960)

3.1. *How to include literary works within an ontology framework*

Since ontology addresses a database problem, the problem of knowledge organization, and since actual knowledge is sensitive to perspectives, the chosen ontology and the purpose to use it can influence the process of knowledge gathering. For example, in the processes of cognitive interaction within and across communities for the preparation of urban plans, the methodology used to identify shared objectives and strategies is often influenced by the formal orientation and the imagined future scenarios. However, these processes are precious as they select how and what aspects to capture of the complexity of the place: these aspects are often not self-evident and yet remain indispensable for the activities of forecasting, organization, environmental planning in urban contexts (Khakee et al., 2002).

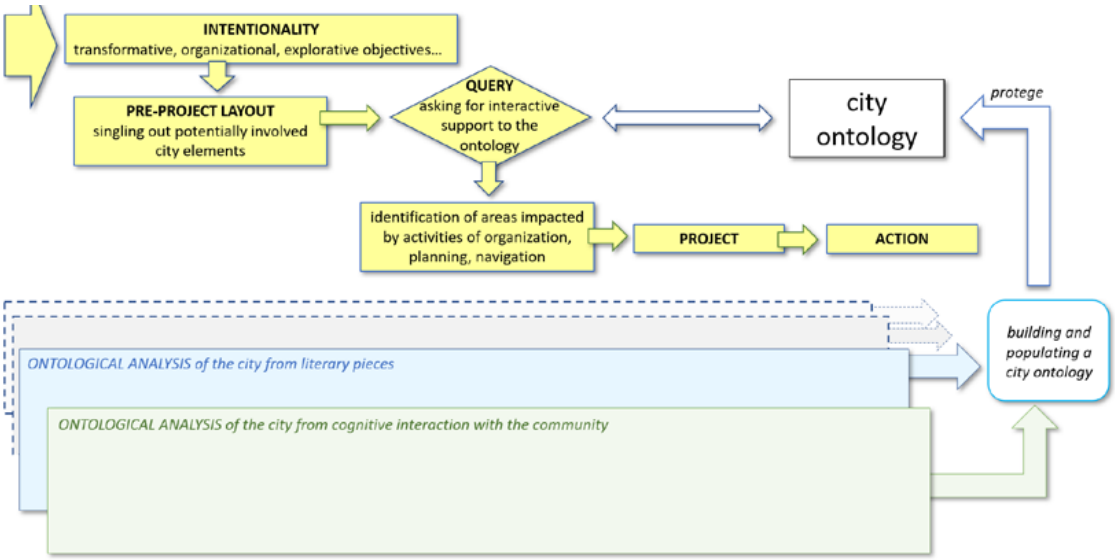
These aspects are grasped by the specific languages of each domain: disciplinary glossary on the one hand, and creative reflections by artists and writers on the other. The following figure, Fig. 2, is an attempt to list possible ways in which ontological analysis can be carried out.

Figure 2. Possible sources of ontological analysis for the city.



Literature works, through their different styles and the authors' sensitivities, provide multi-faceted perspectives and the complexity of personal interpretation. They can grasp usually hidden aspects, concepts, relationships that are useful to understand what cities and places mean to the cognitive agent. Fig. 3 shows a layout of the major phases going from an operational (designing, explorative) intentionality to the possible identification of implementation impacts, through the decision support of ontological models of urban complexity.

Figure 3. Phases of ontology building with decision-support perspectives.



It is evident that the construction of ontologies for this broad body of knowledge is an even more complex exercise and somehow matches the complexity of the decision-making field when humans and their perspectives are taken into account. The construction of the ontological framework is supported in a critical and determining way by the preceding ontological analysis and its degree of coherence with the reality. For this purpose, a model of analysis based on diversified ontological levels has been hypothesized, each of them referring to a set of aspects, circumstances, relationships that characterize the city. Their specific characterization can be found in descriptions and arguments already reported on other research reports and case studies (Stufano et al., 2017).

The ontological levels of Fig. 1 can be seen as different analysis filters, which are able to shift the subsequent ontological construction from one view to another, thus representing a rather delicate analytical moment. One can thus choose an ontological level and investigate the source of knowledge under that ontological perspective, assuming that the ontology itself is suitably developed to connect what one finds at this level to the knowledge acquired at the other levels. Therefore, the process schematized in Fig. 3, which for simplicity is organized in independent stages, actually shows detailed procedural steps whose contiguities are inevitably fuzzy (Fig. 4).

Analyses and reflections of different types of knowledge sources require to adapt to the kind of knowledge these sources can provide. The aspects and potentials expressed by the contribution of literary databases cannot be modeled with a traditional approach. Still, an ontological framework should be suitable to organize these varieties of knowledge even though how to achieve such a general framework is still a research topic.

3.2. *The analysis of literary works: organization of the experiment*

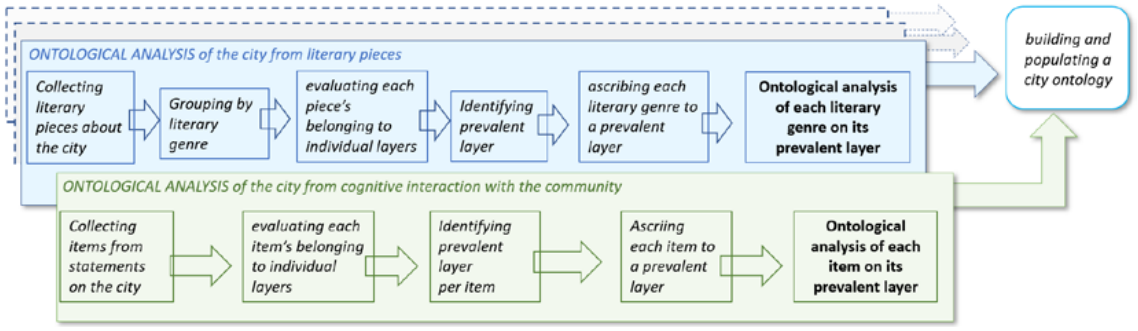
With the aim of investigating the contribution of literary works to the representation of the complex knowledge of the city, an experiment was carried out to select and analyse significant works. About 150 students of the Urban planning course of the Polytechnic University of Bari were invited to send three literary excerpts dealing with the city, selected according to their personal inclination, with brief comments on the reasons for their choice. Through an online form, around 500 contributions were collected, ranging from prose to poetry to geographical texts, written by mainly Italian but also international authors. The subsequent analysis of the texts turned out to be a rather complex activity.

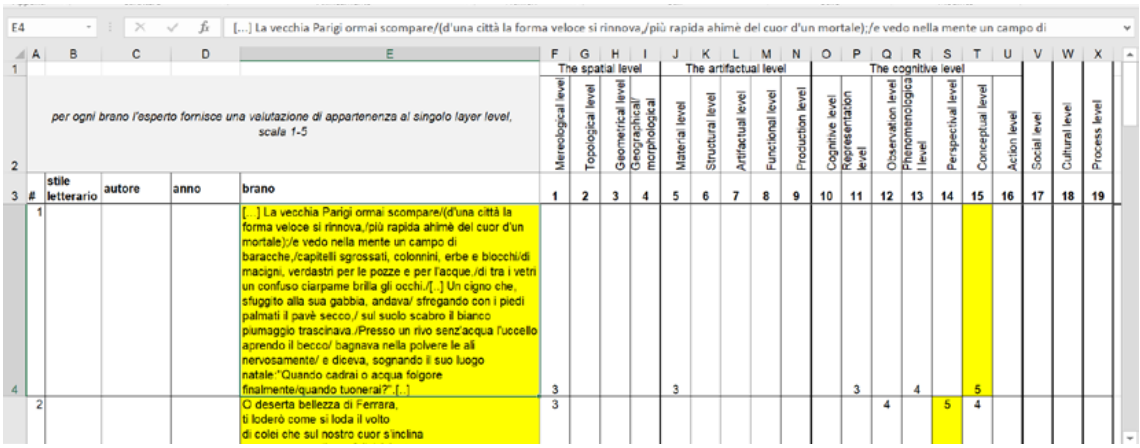
Concerning the use of the ontological levels with which to perform an analysis of literary works, it was decided to exploit a simplified and controlled strategy to avoid the risk to make extemporaneous and over-discretionary choices. Being this a rather preliminary stage of the research, we decided to proceed by manually selecting and annotating of the texts. Statistical analysis of the annotated texts and group discussion was used to highlight interesting

patterns and the meaning/relevance of the extracted knowledge.

More specifically, we selected 50 of these literary pieces (to ensure homogeneity in the quality of the content). Therefore, 2 knowledge engineers assigned an evaluation based on the degree of relevance of the single ontological level in the text of each literary work. The evaluation was made via a Likert scale from 0 (lowest relevance) to 5 (highest relevance). Each literary piece received a high or low mark for each ontological layer. The attribution of each piece to an ontological layer was given in relation to the layer that obtained a maximum rating. The reference framework for the analysis was built using a spreadsheet program. An excerpt of the evaluation sheet of a single evaluator is shown in Fig. 5.

Figure 4. Detailing the ontological analysis pre-process of figure 3. **5.** Evaluation of the belonging of each piece to the relevant ontological layers (excerpt).





The results of the above evaluation are the basis for the attribution of the most suitable layers for each literary piece and, more generally, for some of the single literary genres represented in the sample. Some results and suggestions are shown in the next paragraph.

3.3. *The analysis of literary works: some results*

Given the previous analysis built according the listed criteria, we have the following classification :

- *Poetry: Cognitive layer (more conceptual level, less perspectival level)*
- *Essays: Spatial layer (geometrical/geomorfological); less cognitive*
- *Historic/fantasy novels: cognitive layer (perspectival/phenomenological); less spatial*
- *Generic literature: Cognitive layer (conceptual/representational); less artifactual*

City in poetry seems to be dealt with mainly through a cognitive layer, especially on a conceptual/perspectival level. In this condition, space tends to be understood in terms of experience (e.g., perceiving how to move across the objects) and as something where one is located in (e.g., perceiving space from a specific internal viewpoint). This means that poem excerpts can be used to build and integrate a city ontology by providing items, concepts, relationships that enhance in particular a cognitive (conceptual/perspectival) level of interpretation.

Essays seem to look at urban contexts mainly through a spatial layer (also through a cognitive and a functional layer, but with less emphasis), especially on a geometrical/geomorphological level. In this condition, space tends to be understood in terms of shapes (e.g., seeing the geometrical shape of a neighbourhood) and in terms of locations and their descriptions (e.g., distinguishing being in a valley or having a radial/grid/linear pattern).

This seems to suggest that essay excerpts can be used to build and integrate a city ontology by providing items, concepts, relationships that enhance mainly a spatial (geometrical/geomorphological) level of interpretation.

Urban contexts in historic/fantasy novels seem to deal mainly with the cognitive layer (also through a spatial level, but with less emphasis), especially on a perspectival/phenomenological level. In this condition, space tends to be understood in terms of a moving entity (e.g., perceiving space as an evolving situation) and as something where one is located in (e.g., perceiving space from a specific internal point).

This seems to suggest that novel excerpts can be used to build and integrate a city ontology by providing items, concepts, relationships that enhance in particular a cognitive (perspectival/phenomenological) level of interpretation.

Generic literature (excluding previous styles) seem to look at urban contexts mainly through a cognitive layer (also through an artifactual layer, but with less emphasis), especially on a conceptual/representational level. In this condition, space tends to be understood as a collection of realised concepts (e.g., perceiving space as the manifestation of natural and artificial objects) and in abstract terms (e.g., perceiving the relationships among entities).

This seems to suggest that excerpts from generic literature can be used to build and integrate a city ontology by providing items, concepts, relationships that enhance mainly a cognitive (conceptual/representational) level of interpretation.

It is evident that these are rather partial results, obtained with a pilot study carried out on only 10% of the entire sample of literary works. Furthermore, the analysis did not take into account other features of the database, such as the respondents' comments on their literary choice. Furthermore, the group of respondents is highly homogeneous (university students), thus presumably limiting the generality of the sample and the related data collected.

Nonetheless, we have drawn quite multifarious and articulated suggestions, which allow us to develop interesting conjectures and pave the way for further, deeper investigation.

4. Conclusions and Discussion

This paper reflects on the different elements that contribute to the construction of an ontology of the city. The goal is to obtain new conceptual-operational models for city designs and plans. These models should provide a polyhedral organization of knowledge with an emendable and expandable architecture suitable for continuous support of the agents' reasoning and acting in the city.

Applied ontological analysis of a city is a challenging task. A city is a dynamic system whose organization, structure, and operation can be conceptualized in different and contingent ways according to different viewpoints, so leading to multiple models. While partial designs and partial plans are tools for coping with the socio-environmental and technical needs of a city, we need a unified approach to be able to foresee the impact of changes in the city as a whole.

Applied ontology provides the means for such a comprehensive modeling. Also, the ontological analysis of a city constitutes a valuable research project for developing a central abstract organizational and structural city core representation to foster the dialogue across operational subsystems taking exogenous and endogenous aspects of reality into account.

The applied ontology vision in turn opens the way to face new questions in terms of how to fundamentally understand the city and its conceptualization. What is the essential abstract core of the city (the spirit of the city)? How should we model the different single-agent (solo power) or multi-agent (distributed) knowledge mechanisms? How should we integrate and navigate the different levels of hierarchy of the organization-structure of a city? How to understand the temporal evolution (birth, existence, and death) of cities and their spirit?

The next step of this research project is to populate a few ontological levels with data from cities and to make explicit the relationships among them. With this knowledge base we can start to exemplify how knowledge integration can be achieved. Following this work, possibil-

ities to integrate the ontological model with the results of classical modeling techniques will be investigated.

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Djemila e Timgad, order and nature

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Keywords: Mendoza, eco-park, fringe belts, urban growth

These two small towns of Algeria, abandoned for centuries, have been continuously at the center of numerous reflections by historians, archaeologists and architects. The reason for this interest is given by several factors related to the age of their foundation, to the comparable dimensions, to the relative proximity and to their apparently opposed settlement principle. Two cities that have had a common origin and history, rediscovered a few years later and brought to light at the same time by scholars who have worked on both sites.

Timgad and Djemila are still two paradigmatic styles of urban construction, in which the same idea of city, built in two different places, gave origin to two ways of interpreting the shape of the ground. In the city of Timgad one principle is applied, showing the strength and certainty of the rule, while in Djemila, even if the principles and rules of the Roman city are maintained, the intelligence of the ability to adapt to the specific condition of the ground form is shown

Moreover, the ruins of these two cities preserve another secret, which is not linked to their original form, but is visible in their urban expansion, in the extramoeniagrowth which occurred in the course of history before being abandoned. In this regard it is interesting to note that whilst in Timgad, due to the completed character of its geometry, the rear extensions arise like accidental appendages, in Djemila, the III century extension develops naturally, extending the cardoto the road of Sétif and structuring the parts of the city through a new forum dominated by the Severan temple, rebalancing the eccentric position of the original forum[1].Their urban systems have not remained crystallized over time, but have grown, have been transformed, have accepted other functions and responded to new needs, and in this sense they are comparable to the processes of contemporary cities, continually subject to internal and external transformation, to problems of expansion and growth.

Djemila e Timgad, order and nature
The structure of the city

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As Giorgio Grassi states, "What in one case is the practical, perfect and incorrupt realization of an idea of order (even though this idea of order is actually the synthetic result of a practice brought to perfection), in the other is the ability to learn, to understand and to adapt to that same basic idea. What in one case is only the practical application of an already explicit theoretical statement (the modalities of the foundation Roman city) and paradoxically shows us its limit, in the other the application of the same statement shows instead its character of generality, its possibilities are here only partially expressed, and that is why it convinces us. As a consequence, we learn much more from the second case than from the first, because, unlike the first, we cannot do without the second"[1].

The interest in these two cities is not archaeological, but it is in the meaning of their structures, and in the practical conditions that determined them. What is most interesting is not the structural value itself, even though those structures are undoubtedly charming and attractive, but it is the means we have to understand them.

Moreover, the ruins of these two cities preserve another secret, which is not linked to their original form, but is visible in their urban expansion, in the *extramoenia* growth which occurred in the course of history before being abandoned. "In this regard it is interesting to note that whilst in Timgad, due to the completed character of its geometry, the rear extensions arise like accidental appendages, in Djemila, the 3rd century extension develops naturally, extending the '*cardo*' to the road of Sétif and structuring the parts of the city through a new forum dominated by the Severan temple, rebalancing the eccentric position of the original forum"[2].

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The archaeological remains of these and other abandoned cities, far from any romantic rhetoric, constitute a precious material for our work, able to tell us more about the same finished works.

As Camus says, returning to Tipasa: "I find again here the ancient beauty, a young sky, and I was counting myself lucky, finally realizing that in the worst years of our madness the memory of that sky had never left me. And in the end it was the only thing that prevented me from despair. I had always known that the ruins of Tipasa were younger than our construction sites or our rubble. There, the world starts again every day in a light always new"[3].

After a few years, after the tragedies of World War II, the vision of those same stones take on another meaning: "I found the ancient beauty here, a young sky, and I measured my luck, finally understanding that in the worst years of our madness the memory of that sky had never left me. And lastly it was the one that had prevented me from despairing. I had always

1 G. Grassi, "Questioni di progettazione", in, *Architettura lingua morta*, *Quaderni di Lotus*, Electa Milano, 1988, p. 30.

2 C.M. Arís, *Le variazioni dell'identità*, CittàStudiEdizioni, Milano 1993, p. 89.

3 A. Camus, "Nozze a Tipasa", in Id., *Saggi letterari*, Bompiani, Milano 1959, p. 62.

known that the ruins of Tipasa were younger than our construction sites or our rubble. There the world every day begins again in an ever new light" [4].

The reason for the interest in the study of ancient cities is to be found in the ability that the ruins have to show themselves as a construction site, a section, an urban cross-section, able to convey that complexity that cannot be synthesized in the "skin" of buildings, not attributable only to the facade. Ancient cities are like interrupted works, capable of making us perform a useful and continuous exercise on our memory and our imagination. The architectures of these cities is waiting to be interpreted, that is, they are able to give us useful suggestions for the construction and transformation of the contemporary city, and to convey the great lesson of the history of architecture in pure and synthetic forms.

The skeletons of these cities represent more than past forms and future possibilities. They are a repertoire of models, formal and logical outlines, whose lesson and example can be used to help us understand the present.

The architecture of these cities also has the privilege of making us open-minded and reflective upon the distant world that built them, on the lives that have passed which, despite everything, remain hidden between the walls of the houses, among the streets, the squares and the public buildings.

"Talking about monuments, on the contrary, it seems important to clarify one point: these "objects" are not simple physical entities characterized by a certain material composition, a certain structural profile and some roughly noticeable aesthetic features; monuments are at the same time fountains of knowledge, and within this, they have the ability to incorporate feelings, social forms, moral standards, systems of shared thought, in a network of relationships that can be summarized in the expression 'sense of places'" [5].

A hidden world that remains imprinted, carved in the shapes of the stones, in the geometry of the buildings, in the details of the decorations. There is something hypnotic in the observation of ancient cities, a charm capable of immersing us in an intimacy that no longer belongs to us, which at times may seem distant and alien, but which we can retrace with an apparently identical and repetitive ritual, which coincides with that experience of learning the space that only architecture is able to convey. To observe and understand the city of man.

Djemila and Timgad are two cities that rise in the hinterland of Algeria, and like most of the Roman cities of North Africa, they were built during the expansion of the empire to oversee and colonize the occupied territory. The foundation of these two cities was part of the empire's precise design of urbanization and monumentalization of the occupied territory, demonstrating political, military and cultural power compared with the local populations.

The two cities apparently have a very different appearance, not only for their geographical position but actually for their shape; Djemila is built on the slopes of a mountainous ridge, while Timgad is located at the center of a vast plain. In the first one the original structure that recalls a Roman *castrum* is clearly recognizable, while the second one appears as a city that develops linearly, tracing the topographic shape of the hill on which it stands. If we look more closely at the two cities, we realize that they have more similarities than we can believe at first sight. Grassi rightly speaks of "the same city fallen in two different places", but what exactly does this expression refer to? The question that naturally emerges is: why does Grassi talk of the same city when they apparently have a very different urban structure and are located in places that have nothing in common? As a matter of fact, the two cities have profound structural analogies if we compare the two original foundations, built just a few years apart, with the same rules and following the very same principles. The similarity is not in the external perimeter since Timgad has a squared structure, while Djemila has a trapezoidal perimeter that follows the shape of the hill. The analogies are evident in the orderly structure with the two perpendicular axes and in the arrangement of the forum, tangent to the '*decumanus*' and placed at the end of the '*cardo*'. This layout is not only visible in the two cities here examined but also in the near Lambèse, and in other cities built in other parts of the empire.

In the case of Djemila and Timgad, we are dealing with two new founding sites. In both sites there were no pre-existing cities on which to build the new structure; there were

4 Ibidem, "L'estate", *op. cit.*, p. 156.
5 M. Bettini, *A cosa servono i Greci e i Romani?*, Giulio Einaudi editore, Torino 2017, p. 34.

probably small Numidian villages that had been built up spontaneously, but which couldn't have influenced the shape of the new settlements.

Djemila and Timgad were designed and built entirely from scratch, applying the principles and constructive rules of the foundational Roman city. Both were based on two regular patterns and were not influenced by any pre-existing traces.

Djemila, in its original nucleus, preserves a very regular design, while its trapezoidal perimeter responds more to the Vitruvian principle than to the principle of the *castrum*. The urban construction stops when the altitude starts to increase and the perimeter wall follows the shape of the soil hemmed in by the two valleys. The regular structure of the foundation is made up of streets and private and public buildings that find their own shape and size according to their meeting with the orography of the terrain. The singular buildings manage to stay solidly anchored to the ground with stairs, ramps, buttresses, retaining walls, ramparts and bases, without renouncing the regularity of the measurements of the layout.

The structure of the city of Timgad appears to be very regular, so much so that Lavedan defines it as a "model of geometric precision". The order of the original nucleus is expressed in its ordered form, a very regular layout inscribed in a square of 355 meters on each side. "Timgad [...] looks almost like a manual of Roman urban planning, it is actually an exception made possible by the regularity of the land, by the absence of previous settlements and by the fact that the builders of the city were the veterans of the nearby camp of Lambaesis"[6].

Urban expansion

The first *extra moenia* expansions took place due to the rapid saturation of the areas available within the original perimeter, and they were characterized by the presence of important public buildings that constituted new urban central points. The Roman cities in the imperial period were subject to rapid changes, due to the needs that rapidly changed over the years. This process was a direct consequence of the expansive policies of the empire, which necessitated the reorganization of the original urban centers because of the rapid city development. In many areas of the empire, cities lost the typical monocentricity and were transformed into complex structures with two or more centers, with a very different design from the founding one. Generally speaking, the most important urban transformation concerned the construction of a new forum, because it represented the main space of the city, the center of the entire urban community, as well as representing the direct power of the emperor who built it. If in Rome the construction of the new forum took place as additions to the existing one, in other cities they were built in a peripheral position, completely modifying the existing urban relations and indicating new directions or areas of expansion.

These transformations are the biggest similarity Roman cities hold with modern-day cities, both for the repetitive growth and for the formal models put into practice. In the Roman city, we cannot even talk about a singular idea of the city or about repetitive typological models, because the parts of the city that have been added over time presented very different characteristics.

As Italo Insolera states in North Africa this transformation process is quite evident: "It is with the Severans at the beginning of the 3rd century AD that a rich policy of public works extends from Rome to the original lands of the Severans, that is, to North Africa. At the beginning of the 3rd century, Septimius Severus, Caracalla, Eliogabalus, Severus Alexander and the minor Severans - men and women - built the so-called Severan Forums in numerous Roman colonies and cities of North Africa: the most famous ones of all being Timgad and Djemila. These Forums are not like those of Caesar, Augustus and the other Roman emperors of the 2nd century, with the enlargements attached to the old original Forum, but they are completely new works arising in the peripheries, consequently creating a model of a city with two forums, a fairly new concept in Greek and Roman tradition, apart from a few exceptions such as Pompeii"[7].

About a century after their foundations Timgad and Djemila began to expand beyond

6 A. Ferlenga, *Città romana e trasformazioni cristiane. Alcuni esempi*, in, "Lotus international", N. 65, Electa, Milano 1990. p. 41

7 I. Insolera, *Roma per esempio, La città e l'urbanista*, Donzelli, Roma 2010, p. 12.

the original perimeters.

Although we do not know the precise intention of the Severan dynasty, we can easily guess that the new forums were built under an inclusive mindset toward the least Romanized populations who were based mainly towards the outer areas of the cities.

The two cities of Djemila and Timgad respond in the opposite way to urban expansion.

In the case of Djemila it is the morphology of the site which indicates the form of expansion, defined by the ridge road which corresponds with the lateral *cardo* of the old city. In this way the *cardo maximus* became the backbone of the entire urban construction. In addition to the construction of this ridge axis, some monumental buildings were constructed which reinforced the idea of a linear development of the city. In this case, the natural shape of the hill and the direction of the ancient axis were able to establish indications for the new urban expansions. The new parts are lined up in succession alternating large monumental spaces with new residential areas of the Christian and Byzantine era that no longer have anything in common with the principles of the Roman city, but retain the regulatory principle.

In Timgad, the formation of new neighbourhoods takes place irregularly around the access roads to the city. The great monuments are built outside the perimeter walls using the old irregular designs, thus renouncing a preordained design of urban expansion.

The enlargements of the city of Timgad occur sporadically and accidentally, and no intervention is able to deal with the closed and defined geometry of the perimeter of the city. The expansions have a more complex and random relationship, and they spread out in all directions, in the attempt to reinforce the direction of the territorial road, which coincides with the decumanus, in the two directions of Lambèse and Cirta.

Around the geometric construction of the regular layout, the expansions thicken as accidental appendages, monuments, villages, residential areas accumulate along the main access roads to the city.

As stated by Carlos Martí Arís "Timgad and Djemila obey the same logical disposition of the elements and are governed by identical principles of formal structuring. And once again it is surprising that the repetition of an idea produces such a variety of phenomena"[8]. This difference is found both on the scale of the urban system and that of the building and applies to monuments as well as to residential buildings. Starting from consolidated typological patterns, we witness a wide repertoire of variations, made in Djemila in continuous comparison with the ground, and in Timgad with the geometry of the plant. The urban expansions are governed in one case by the natural form of the ground, and in the other by the direction of the roads that continue towards Lambèse and towards Mascula and Tebessa. These two modes of expansion correspond to the repetition of the same phenomenon, but have generated two distinct products: Djemila a city arranged for parts along a single main axis, in Timgad a city for pieces, almost fenced "clods" that are arranged autonomously in the territory.

Djemila

It is very difficult to describe Djemila, and we can do it in many different ways. Even if the effort is to describe the architecture of this city, its urban structure, its relationship with the place so extraordinarily unique, it is difficult to avoid further general considerations.

Djemila is a city that does not leave one indifferent; it could be called a city of the mind, thought out and rebuilt on top of itself, every single stone adapted and moulded to the place. Its constructive and natural particularities, and the same impervious place in which it rises, are able to touch our deepest sensitivity, to excite like few other places in the world. Its balanced measurements interpret and build the natural space. The architecture of this city is the result of a remodelling of the schematic archetypal forms of Roman architecture, adapted and modelled on the ground, and shaped on the particular conditions of the land in which they stand.

All architecture shows the intelligence of the solution, the uniqueness given by the particular condition of the soil. What is more difficult to transmit however is the ability that these buildings have to arouse excitement, difficult to summarise with images, drawings or

8 C.M. Arís, Le variazioni dell'identità, il tipo in architettura, Città studi edizioni, Milano 1993, p.89.

storytelling. This experience transmits an emotion that derives from the qualities of the space that only the direct experience with the place can give, walking in those streets, measuring oneself against those spaces and landscapes, living to the full the experience of the space built by man.

We can perhaps trace this emotion by rereading the pages written by Albert Camus, "The wind at Djemila", in which the city is described with touching words, managing to make a synthesis of the geographical, architectural and natural elements that characterize it. « Every road one follows, the paths among the ruined houses, the wide-paved streets under gleaming columns, the immense forum between the arch of triumph and the temple on its hillock, everything leads to the ravines which on every side bound Djemila, a pack of cards spread open under a sky without limits. And one finds oneself there, tense, set face to face with the stones and the silence, while the day advances and the mountains grow larger as they turn violet. But the wind blows on the plateau of Djemila. In that great confusion of wind and sun, the mingling of the light with the ruins, something is forged which gives man the measure of his identity with the solitude and silence of the dead city»

The organization of the public space of the city of Djemila takes place around three public spaces capable of characterizing the phases of the construction of the city, with three settlement models that contain within them ideas of opposing cities. Djemila was shaped on the hill, rebuilt on itself, and the individual interventions have been able to continuously compare themselves with the shape of the earth and with the first traces impressed on the territory. The first settlement, like the subsequent expansions, required a work of handling and regularizing the land for the construction of the buildings. The techniques used to prepare the lots of large monumental complexes can be summarized in two elementary operations: the excavation and the carry-over[9] (N-31). The ground is held back through containment walls
1160 to form glazes, terraces, bases. The architectural elements necessary for the substructure of the land become necessary for the construction of the city. The three large public spaces summarize the three main construction phases of the ancient Cuicul, and also coincide with the spaces of public life in the city. In order we have the old Forum, or north hole, placed at the center of the ancient nucleus, the forum of the Severi, which constitutes the barycentric element between the old city and the expansion, and the complex of the basilicas with a square in the Christian quarter.

Timgad

Timgad is built on a relatively irregular site, on one of the high plains between the two Atlas chains that divide the Mediterranean area from the area preceding the desert. Between these two chains there is a plateau with an average height of more than 1000 meters. To the south is the most important mountain range, that of the Aurès, a huge mass more than 100 kilometers long, cut out by the valleys of the wadis El Kantara and el-Abiod, and with peaks that exceed 2300 meters of height. The Aures chain, as Procopius already observed in the 6th century, was an impervious, wild place, difficult to access[10] (N-43), where the rebellious Berber people easily found shelter.

Timgad is built on a rigid chessboard structure, within a quadrangular design of about 355 meters on each side. The city is cut by two main routes, according to its medians, the *decumanus maximus* from east to west, which coincides with the military road that ran at the feet of the Aurès from Tebessa to Lambèse, and the *cardo maximus* that went out of the city center towards the northern gateway in the direction of Cirta, the current Costantine. In the southerly direction, the cardo maximus is interrupted by the forum, and continues three blocks westwards to reach the southern gateway. The forum is located near the intersection of the two main roads, south of the decumanus and central to the alignment of the cardo maximus. The main road system forms a T, and the three main gates of the city are located on the three summits.

The variations in altitude in the city are resolved in two opposing ways. The private buildings

9 L. Coccia, *L'architettura del suolo*, Alinea Editrice, Firenze 2005.
10 Procopius from Caesarea, *De aedificiis*, an encomiastic style book about the buildings built by Justinian.

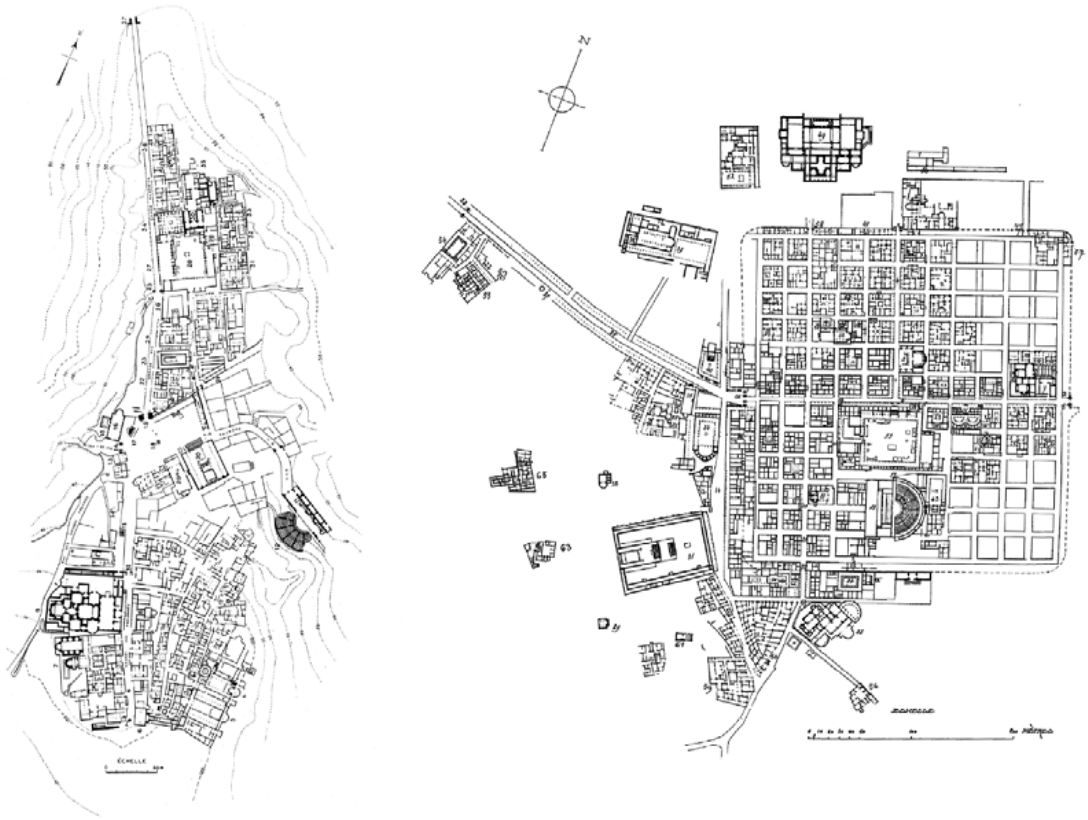
try to hide the irregularities of the ground in an imperceptible way, absorbing the variations inside, while the public buildings use architectural devices capable of reworking the shape of the ground.

The *cardo maximus* runs through the city from the north gate up to the *decumanus*, and on its alignment, there are the entrance steps to the forum placed on a podium raised above the main streets. Southwards beyond the forum, aligned with the cardo maximus, we find the *vomitorium* of the theater, which confirm the great order of urban construction.

Each square resulting from the intersection of the two main axes was divided by smaller cardos and decumani which formed 36 insulae of about 20 meters on each side. In a few decades the city has expanded from the original twelve hectares to over fifty, expanding around some monuments built outside the walls, or along the main communication arteries. This rapid growth of Timgad can be compared to the development of the contemporary city, which grows in a disordered and fragmented way. The perfection of the original system not only failed to impose a constructive rule outside its walls, but it did not even succeed in suggesting a recognizable constructive principle. The expansions appear frammantarie, realized following a proper geometry that obeyed rules dictated by the contingency, and not from a design or an autonomous regulating path.

The construction and location of the monumental buildings of Timgad is achieved by crossing the geometric rigor of the grid with a careful use of the soil shapes. Public buildings are arranged on a regulatory layout, escaping the obsessive repetition of the geometric chess of houses. The auditorium of the theater is obtained from the small pre-existing hill, and the whole has an alignment consistent with the entire urban layout. In fact, access to the theater is ideally aligned with the Cardo maximus, thus taking back what were the regulatory guidelines of the city, even if it does not continue because of the Forum.

Figure 1.



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The principle of 'water attachment' for the Chinese cities: some consideration on settlement systems in Guangdong

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The water as a resource has historically played an important role in the formation and the development of the Chinese cities; this connection was declined in many ways throughout the Chinese territory and has often determined the form of the settlement and even the characters that pertain to the architecture. This essay proposes an interpretation of the relevant contribution that the relationship with the river has given to the structure of Chinese landscape and takes into consideration some case studies located in the Guangdong region to investigate the impact that the water resources had on the evolution of the territory. As an important example, the organization and the transformation that occurred in the history of the Pearl River Delta put in evidence the prominence of the water for shaping the process of civilization in this region. The author discusses then the relationship between the form of settlements and the water resource in a specific area of the delta, analyzing some villages in the Kaiping County and elaborating on the site selection and the layout of the settlements. The aim of the contribution is to suggest a definition of the identity of these settlements in association with their geographical condition and the river landscape and to provide virtuous paradigms even to the design process of today.

Introduction

Water is a vital element for the cities, in her abundance and even in her absence; it takes part to the 'natural structure' of the territory that exists even without the human presence, together with the orography, the climate, the rainfall, the altitude, the consistence and the productivity of the soil; it belongs to the morphological and climatic features of a place influencing the formation and the processual typology of the anthropic structures (Caniggia and Maffei, 2008). The existence of waterways determines the shape of the cities and it can change the way to cross the settlements, as water borne is an advantageous means of transport; the proximity to the water, however, is a factor that must be controlled to minimize the hazard of floods and disasters.

The relevance of the water systems in the development of the Chinese city is evident throughout the history of settlements and the process of anthropisation: the waterways influenced the features of the ancient cities and often were crucial for the site selection of the settlement. The significance of water in metaphysical terms had been clearly put in evidence even in the earliest expressions of Chinese philosophy and in the experienced wisdom of the ancestors: in fact, the water was the first term to be defined among the five processes (*wuxing* '五行') of *Hongfan* '洪范'(The great plan), one of the most important and ancient part of Confucian Classic Shangshu '尚书' (Book of document), giving the fundamental description of the essential substances that form the universe.

This contribution tries to enlighten the relevant supply that the relationship with water resources has given to the development of Chinese settlements, taking into consideration some cases located in the Guangdong region and suggesting a definition of the identity of these settlements in association with their form and relating to the river landscape.

The site selection for the Chinese cities and the hydrological system

The fundamental theory guiding the site selection for Chinese cities can be easily explained by an important statement of the book of *Guanzi* '管子' (Master Guan), saying that the best site for a capital should be along mountains and water sources, so as to simplify the fortification and the water borne transport; the topography of the site should be carefully chosen as well, low enough to obtain a sufficient water supply and high enough to avoid further drainage works.

Starting from this statement, Wu Qingzhou, a scholar who has deeply studied the historic capitals and cities in Chinese history, summaries a general law in site selection with the principle of 'water-attachment', referring to the proximity to water resources (Wu, 2007). City planning for the Chinese ancient capitals shows a relevant attention to the site selection, which is usually optimized taking into consideration the risk of floods (Figure 1). Wu Qingzhou identifies four key aspects of this process of adaptation: first, the preferred location is on a relatively high ground; second, the location is usually conveniently placed away from riverbanks that are unstable; third, many sites adopted for Chinese Capitals stay on river banks, to decrease flood erosion, but even concave banks are quite common; fourth, some cities are located on sites which show a natural barrier against floods (Wu, 1989). The principle of 'water-attachment' belongs to the settlement culture event of the Chinese villages and it invests many Chinese way of settling, from the scale of the monument to the vernacular architecture.

In order to show the relevant contribution that the principle had in the development of the Chinese settlement culture, the paper investigate the form of the settlements and the relationship with the water resource in the Kaiping County, located in the south-western portion of the Pearl River Delta.

In the area of the Pearl River Delta, the third largest delta in China, the settlement systems were deeply influenced by the water. Weng, while widely explaining the main strategies of the river basin management carried out by the Chinese population in this territory, gives to the water resources the prominence of being the most important factor that has shaped the process of civilization in the delta over the last 2000 years. The land itself, where all the settlements stay, was mainly formed by fertile alluvial sediments, deposited for the action

of the three main branches of the river, western, northern and eastern, and the numerous tributaries and distributaries in this area (Weng, 2007).

In this area the principles of *feng shui* have largely influenced the location of the settlements and the shape of cities with some peculiarities belonging to the southern regions of China; they involve a wholesome and respectful location of the settlements, that goes along with the topographic condition and shows an advantageous adaptation to the natural condition. In general terms, cities are frequently placed on the slopes of low hills, in order to provide adequate shelter in case of floods; this location also guaranteed the possibility of welcoming villagers in the event of serious flooding. The main historical cities of the Pearl River Delta, such as Guangzhou, Foshan, Shunde and Jiangmenli, present the same location, turning their backs to a higher ground (Bosselmann, 2018).

The adaptations and transformations in the relationship with the river landscape

The relationship between the river's groove and the settlement strategies shows reciprocity and invests all the scales, from the territory to the specific building. The course of the river has always undergone alterations by man, some showing a more transformative, others more adaptive attitude.

A planning tool widely used in Chinese cities to further benefit from water resources near the site chosen for the city was the design of a capillary system of canals, which, together with natural hydrographic systems, perform many tasks and different functions (Wu, 2007). In the first instance, the water network was an excellent way of crossing the city and integrating the terrestrial routes; it frequently became a generating element for parts of the urban fabric and allowed to meet the city's water needs, including domestic and manufacturing uses.

The network of canals crossing Guangzhou is a clear example of this kind of transformation of the water resources; this historical city is considerably strategic in the context of the Pearl River Delta and its water network has been working since the Song Dynasty (960 – 1276); the canal system has been continuously expanded and maintained in the following centuries, until the complete configuration it assumed during the Qing Dynasty with the so-called 'Six veins canal system' (Figure 2). The design of this systems shows a remarkable attention to the urban topography of the city (Bosselmann, 2018).

Water has also played a defensive role in the planning of Chinese cities, hindering the success of military attacks; in some cases, however, the water network has also been used as a weapon, causing floods in the enemy cities by performing the strategic demolition of embankments and defense works (Wu, 1989). The artificial canal system has always contributed to the mitigation of the risks connected to floods, becoming a network for the drainage of excess water. Not infrequently, the network has been integrated by systems for collecting excess water, such as ponds and stretches of water near the river; these systems have also contributed to the irrigation and subsistence of relevant portions of agricultural land, directly connected to the city (Wu, 2007).

Starting from the period of the Tang Dynasty (618-907 A.D.) when the first levee was built, three main strategies of human intervention have shaped the territory of the Pearl River Delta; in the need to improve the intensive agricultural use of the area, these strategies are: land reclamation, dyke building and levee-pond systems. The cultivation system of the levee-pond systems constitutes a widespread feature of large portions of the delta's territory and has been practiced from the period of the Song Dynasty, especially in the areas where the water drainage was more complicated; in these parts, the peasants began to accumulate mud by building natural embankments, thus creating a highly productive agricultural system, which also integrates fishing and silk production. The practice of this type of agriculture produced a growth in agricultural production, increasing the number of crops to two or three per year (Bosselmann, 2018).

The form of settlements and the water-attachment in Kaiping County

The considerations coming from the territorial analysis on the strategies of control and adaptation put in place by the Pearl River Delta population, were the precondition of

the investigation on the form of some settlements in the fluvial region of Kaiping County, Guangdong. The following reading explains some preliminary considerations of the author on the surveys conducted in some villages in this county.

The town of Kaiping is closely related to one of the water basins affluent to the Pearl River, the Tanjiang River (Figure 3). From a topographic point of view, the county has two main slopes that flow into the river valley, including hilly areas in the eastern part and some mountains distributed in its territory; however, the 69% of the area is occupied by valleys and plains which do not exceed the altitude of 50m above sea level. The floods have always been a threat for these towns and villages, by virtue of the specific topographic condition of this county, determining an actual structure of the settlements and the character of some dwelling typologies. Moreover, the location of this county in the territory of Guangdong was even responsible of security issues, that determined relevant defensive characteristics in the structure of the villages (Wang, 2016): this territory, after the First Opium War (1840–1842), went through a period of social disorder and insecurity, also due to the numerous incursions of the Hakka population, a different ethnic group moving from the central part of China. In these circumstances, numerous workers were sought to enroll in different parts of the American continent and left for a long time from their native country; the migratory phenomena, however, were one of the most relevant factors enriching the local culture of Western influences and they originate a perfect combination of Chinese and Western characters in the architecture of Kaiping (Wang, 2016).

The inscription by the UNESCO of some villages in this area in the list of the World Heritage Sites led to the completion of several studies and the drafting of a conservation plan, which takes into consideration the 'character areas' of this county. The merits of this renewed attention to urban morphology in the service of conservation in the Chinese context are to be attributed precisely to the UNESCO contribution (Whitehand et alii, 2011). In this perspective, the proposed inscription, accepted in 2007 by the UNESCO, includes both the buildings and their cultural environment, with the definition of the core areas and the buffer zones for the conservation plan.

The structure of the villages among the registered properties is deeply affected by the application of the principles of *Feng Shui*, making use in the planning of the settlements of specific rules that differ from those applied to the North; for instance, the orientation of the settlements, usually closely linked to the north-south direction with the entry to the village from the south, in this area does not follow such restrictive rules, basing on this concept: 'South is the best consideration, East second, West the third, and North the last' (Tan, 2013). The decision about orientation, therefore, depends on other points of the *Feng Shui* in the area and it focus on the proximity to the main resources, among which water is particularly assessed.

The structure of the settlements uses a comb-shaped layout and shows some typical characters of the villages in the *Lingnan* cultural area, that included the region south of the Five Ranges and now covers the provinces of Guangdong, Guangxi and Hainan. In this layout, houses are placed longitudinally and the voids between the houses correspond to the lanes and the streets, following the disposition of a comb (Wang, 2016).

The structure of the villages, however, has evolved in an even more precise form, showing a precise grid of vertical and horizontal paths; this new spatial arrangement evolves the comb structure in a chessboard in which each unit becomes a module and measure of the settlement. This development is deeply connected to the history of the overseas Chinese community, bearer of new ideas and enhancement in the planning of the villages (Tan, 2013).

The chessboard layout is based on the reiteration, along vertical and horizontal axes, of the minimal dwelling unit, corresponding to a rectangular shaped land parcel; the horizontal and vertical axes correspond to the connecting roads and paths that separate the residential units (Tan, 2013). The importance of the houses in the general planning of the villages is coherent to significance that the dwelling has in the Chinese culture: the house is one of the main needs of man and exists only in relation to his owner, as a means of connection between heaven and earth. The relationship with the external environment is crucial in the Feng Shui principles and the correct planning of the house and the settlement

guarantees health, happiness and wealth.

The narrow paths and the passages that separate the residential units build a dense network, useful for ventilation inside the settlement and the protection of the units from the risk of fire; they are designed with care, in order to contribute to the drainage of rainwater and to its collection in the pond, which generally faces the settlement, separated from the first row of dwellings by a drying ground (Figure 4). In this stretch of water are concentrated many activities relevant to the village, such as fishing and agriculture; its location also contributes to the air-cooling for the entire village.

The other relevant elements of the settlement are the wells and the gateways, which are usually two in number and are located opposite the margins of the first row of village dwellings, which generally also includes an ancestral hall and a study hall (Tan, 2013).

On the edge of the village, often bamboo forests are planted to protect the settlement; this function, however, is mainly carried out by the *diaolou*, multi-storey towers that are the most representative buildings of the overseas Chinese architectural culture in Kaiping. These edifices at first were built as communal towers for defensive purpose, but later this typology evolved acquiring residential functions and combining western stylistic elements with the Oriental tradition, by virtue of the multiculturality of the inhabitants of the region.

Conclusion

The strategies perfected in the historical settlement of the Guangdong region for the water regulation and the soil conservation provide a virtuous example of the interaction between the people and the environment even in the contemporary scenario.

The relationship with the water network is a factor that gives form to the settlement, starting from the site selection and involving the strategies of adaptation and transformation of the territory. In the case of Kaiping villages, the relation with water is deep even when it comes to the structure of the villages, where the ponds and the systems for collecting the water work in an utmost synergy to enhance the inner climate of the villages and to reuse periodically the water resources.

The principle of 'water attachment' in all its variation can still contribute as a paradigm to the design process of today, defining the identity of the landscape and the Chinese city.

Figure 1. Plans of Suzhou, Huzhou Prefecture, Hangzhou and Beijing (source: Wu, 2007).

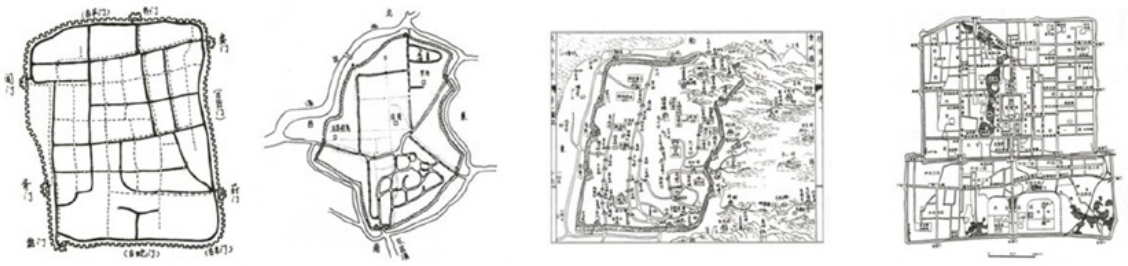

Figure 2. Map of Guangzhou drainage system, showing the 'Six Veins Canal System' (source: Bosselmann, 2018).

Figure 3. Map of the settlement in their relationship with the Tanjiang River (source: the author on Landsat images).

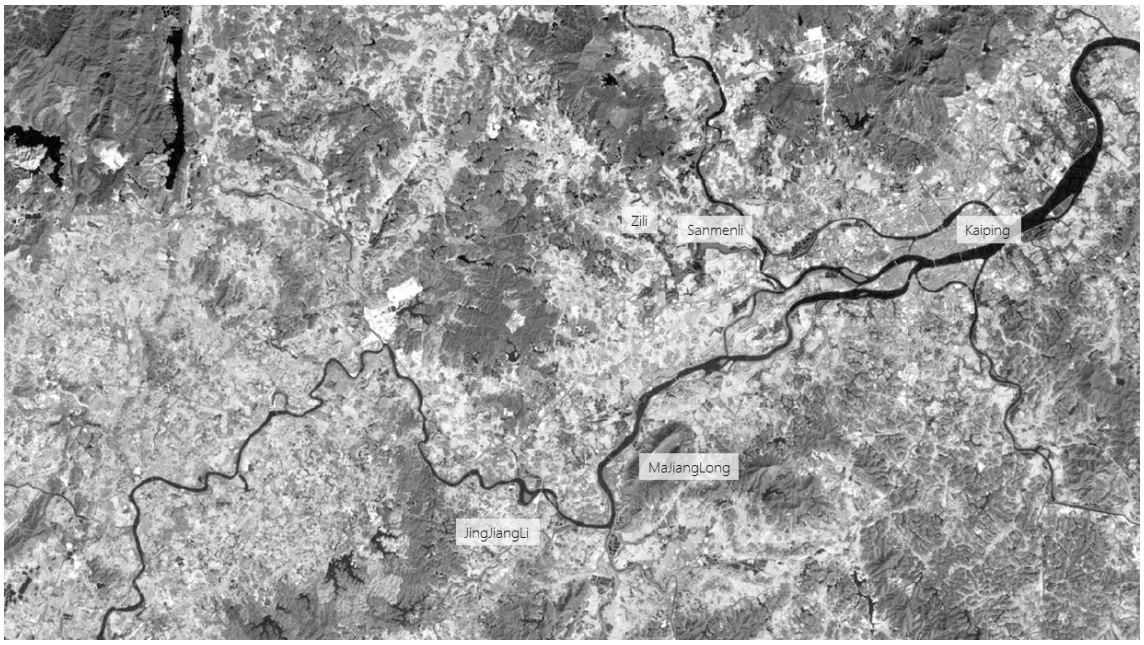

Figure 4. Drainage system parallel to the lanes, collecting water in the pond. Majianglong village, Kaiping County (source: photo by the author, May 2018).

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TEORIA
LETTURA
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i.1 Lettura urbana e forma futura
i.2 Forma e struttura della città ereditata

Morfologia urbana e resilienza. Strumenti e modalità del progetto contemporaneo tra 'permanente e temporaneo'

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Padre Cristoforo Sarti nel suo Saggio di congietture su li terremoti afferma che "(…) gli edifici in forma consimile(rotonda) sono molto a proposito per iscansare i danni dell'aeromoto"1. La regolarità strutturale e morfologica degli edifici unitamente alla continuità ed omogeneità dei materiali costituiscono la condizione primigenia in materia antisismica. Infatti, la progettazione architettonica spesso precede quella strutturale: la concezione dell'architettura (intesa come definizione degli aspetti formali, estetici e distributivi), condiziona inevitabilmente la configurazione del sistema strutturale preposto a resistere alle azioni sismiche. Analogamente, in tema di disegno urbano, la storia conferma che vi sono città che a causa della loro forma risultano più resistenti, o resilienti, di altre e già in passato la ricostruzione post-sisma si è interrogata sulla morfologia urbana per far fronte all'emergenza delle catastrofi ambientali, emblematico il caso di Palmi dopo il terremoto di Messina del 1783. Oggi i Piani di Emergenza rappresentano il tentativo di fornire una risposta concreta in termini di sicurezza. La ricerca indaga quindi quali strumenti progettuali mettere in campo per prevenire ed assorbire i rischi delle calamità naturali e trasformarli in opportunità. Allo stesso tempo, i drammatici eventi del sisma mettono però in luce la sottile linea di confine che intercorre tra il concetto di temporaneo e permanente e, nella permanenza della temporaneità, l'evidente e inevitabile fenomeno che vede affiancarsi, accanto ad inagibili nuclei antichi, nuove strutture temporanee che alterano in modo 'permanente' il contesto insediativo. Il contributo qui proposto, attraverso l'analisi di alcuni casi studio nazionali e internazionali mira a fornire alcuni spunti critici in tale direzione indagando possibili approcci del progetto contemporaneo in tema di ricostruzione, resilienza e riqualificazione paesaggistica.

Introduction

What does a resilient town mean today? After the seismic events in Central Italy, the topic of reconstruction has become very complex. Firstly, in relation to the urgent need to repopulate territories that for a long time have been under constant risk of depopulation and abandonment, and secondly, in terms of both the conservation and restoration of ancient villages of high historical and artistic value. Above all, the consideration of safety and prevention for the people who live there.

Living in areas with high seismic risk means being tolerant of a territory that is perpetually in motion. How is it possible to live alongside such a reality? How can these cities be rebuilt in order to preserve what is left, and to heal the wounds of an environmental catastrophe? How can damage and loss be repaired in new ways, while continuing to respect the identity of the place? Using these questions, The University of Perugia study analyzed the resilience that certain urban areas have developed over others, due to their urban morphology, conformation and material homogeneity, which greatly reduces the seismic vulnerability of a building. However, resilience often means activating strategies aimed at reducing risk in the event of natural disasters. Italian legislation has in fact developed Plans of Emergency, MS and CLE maps and operational plans such as SUM, but what really happens after the devastation of a seismic event? In reality, the dramatic episodes in the Apennine Mountains in the last twenty years have shown the difficulty of successfully linking the primary emergency phase with the second phase of reconstruction; in fact, the first one goes well beyond the established deadlines and temporary villages are often never removed.

It is evident that if on one hand the construction of temporary houses involves the design of permanent elements and infrastructures, on the other hand, the emergency structures
 are very often are not taken down, becoming a strong and definitive blot on the territory. Research carried out by the Engineering Department of Perugia in the last two years, on the Internal Area of Valnerina in Umbria, has investigated these themes according to the concepts of permanence and temporariness, emergency and resilience, as well as security and the Smart City.

Royal Instructions after the earthquake of 1783 in Calabria and the Plan of Norcia of 1859

Cristoforo Sarti in his book 'Saggio di congietture su li terremoti' states that "(...) buildings of a similar form (round) are very likely to survive earthquake damage"[1]. The structural and morphological regularity of buildings and the continuity and homogeneity of materials constitute the primary condition in anti-seismic matters. In fact, architectural planning often precedes the structural solution: the concept of architecture (as a definition of the formal, aesthetic and distributive aspects) inevitably affects the configuration of the structural system designed to resist seismic actions. Similarly, with regard to urban design, history confirms that there are cities more resistant or resilient than others, due to the shape of their buildings. In the past post-earthquake reconstruction studied the urban form to cope with the emergence of environmental catastrophe. "If, in fact, some spatial construction characteristics can be explained by an analysis of the individual building, the organization of ancient structures can only be understood through an interpretation of the relationships that exist between the different buildings on an urban scale" [2]. After the events of 1783 in Calabria, Royal Instructions were issued by the Bourbon Government (March 20, 1784) which in fact turned out to be "the first European attempts to introduce anti-seismic regulations aimed at reducing the risk of earthquakes" [3]. The royal regulation in particular expressed generic provisions concerning the width of roads [4] , the geometric regularity of buildings and the distribution of public spaces, a main market square and smaller squares with churches or other public buildings. The ruling required that all *case baraccate* - wooden-framed houses, could be only two floors high at the most. Higher floors had to be demolished, balconies and other protruding elements eliminated, and floor beams had to be fitted into the walls. The shape of the urban structure aimed at the symmetry of the ideal city of the Renaissance period as an effective solution to reducing seismic vulnerability, with stylistic influences from the European cultures of the period. The coexistence of the modern city of Pierre Patte with the suggestions of Laugier in 'Essai

sur l'architecture' of 1753, introduced into Italy by Francesco Milizia in 1781, contributed very different images of towns than those dictated by local tradition. The vision of an industrial city and the secular philosophy of enlightenment moved religious buildings into secondary streets, creating space for large boulevards. Examples can be found in Palmi, inspired by Craig's project for Edinburgh, or Cortale with obvious references to both the Place Royale in Bordeaux and to English gardens. The pure geometry of the town of Bianco was derived from a design by Pietro Cataneo, while the town of Mileto reproduces the architectural plans of Filarete and Scamozzi. It does not seem to matter what the aesthetic-formal choice or functional distributions were, but it is clear that the urban area of Calabrian cities tried to define safety parameters according to a new model that was as resilient as possible. In the case of Norcia in Umbria however, which was the epicenter to an earthquake on October 30 2016, the ancient urban structure provided resistance, and so greatly reduced damage despite a seismic intensity of 6.5. "Differences must be sought in history; Norcia is an example of a city that has resisted seismic events over a one-hundred-and-fifty year period" [5]. In 1859 Luigi Poletti, an architect from Modena, and the geologist Angelo Secchi, commissioned by the Pontifical Court of Pius IX, were instructed to draft the plan for the reconstruction of the city. The New Building Regulations of Norcia, which became executive on May 15 1860, dictated precise construction rules in terms of prevention and safety, such as the use of simple geometric shapes and volumes, building height which was limited to two floors, and 60cm walls reinforced with buttresses. The project also suggested, where possible, to enlarge the width of the roads and consolidate them. Poletti also designed a new area outside the walls called *Borgo Pio* after Pope Pius, which was to be a forerunner in anti-seismic districts but which, due to a lack of funds was never built. The Norcia plan was a restoration project, of the urban morphological structure, through the provision of preventive safety measures. The main difference between the two case studies is the conservational state of the buildings, but also a different design approach. The two cases highlighted on one hand the theme of new construction and on the other hand, the conservation of the existing urban system.

It gives rise to the many considerations of post-earthquake reconstruction, which can also be applied in a contemporary context. In the first place, it opens scenarios on possible planning directions but also shows the urgent need to equip cities located in seismic zones with an aggregative and morphological structure that can sustain an earthquake and be equipped for natural risks.

What does reconstruction mean?

"In the face of a dramatic event such as an earthquake we have to understand its nature and observe its context with an awareness so that even the emergency services should be focused on the final goal which is not reconstruction. [...] The real goal is that of rehabilitation" [6]. From this, we infer that there are there are two areas to consider. Firstly, 'reconstruction' means implementing strategies and programmed actions, and understanding that the distinct time phases of assistance and then reconstruction are part of the same process and involve two-way planning. It is therefore difficult to divide temporary and permanent actions. The Italian experiences of Friuli, L'Aquila and Emilia Romagna, show different design approaches and the effectiveness or ineffectiveness of the solutions of continuity and synchronization between the primary emergency period and the time of reconstruction. At the present, temporary interventions are permanently altering the landscape so we have to ask ourselves how emergency housing can be installed according to more careful criteria of integration and environmental protection, even in the case of temporary relocation. Secondly, we need to understand why the word 'rehabilitation' is used and not 'reconstruction'. In fact, it is not enough to simply restore compromised buildings following an earthquake, it is essential that the right conditions are created in a territory so that it can be inhabited once again.

Law no. 229/2016, which integrates the Decree Law 189/2016 of the Extraordinary Commissioner for the Government of Reconstruction, is a document for correct reconstruction, its focal points are to respect and enhance local identity and the regeneration of earthquake areas through new uniform visions. In fact, earthquake areas are already heavily penalized

by territorial marginality and a consequent depopulation process that is difficult to contain. "The earthquake not only destroyed the heritage but also a dense network of communication between heritage and landscape" [7]. This implies an urgent need to act but also the need for a strategy to reactivate the anthropic equilibrium of a territory already affected by numerous critical issues. Similarly, it is necessary to plan for the safety of towns in respect to the indigenous building techniques and processes, through a combination - not necessarily incompatible - of technology and local building customs. Finally, it is essential to rebuild not only buildings, but also communities, thereby reducing the risk of isolation of these territories. According to the UNISDR (United Nations Office for Disaster Risk Reduction), two factors are crucial in terms of prevention and security: preparing and sensitizing individuals to deal with disasters, and building places that can mitigate future disasters. We need to design as many towns as possible, as resilient communities.

The case of Valnerina: Community Centers

The planning of community centers is one of the results of the research conducted in the last two years by the Engineering Department in the field of reconstruction after an earthquake, a project in collaboration with the Civil Protection and the Region of Umbria. The Community Centers are modular rescue units; these buildings are used as emergency sites in case of disaster, and as public spaces for citizens on an everyday basis. "The permanence of shelter structures (which can be buildings with other social functions in the absence of earthquakes), is a priority in seismogenic areas" [8] . These units are quick to install, can be distributed throughout the Valnerina area, and are sized according to the number of residents in each municipality. The project - extended to the whole territory - puts fourteen municipal-

ities on the network and aims at creating a resilient coverage. Valnerina is just one of the three Internal Areas of Umbria. The Internal Areas represent a substantial part of the county; almost three fifths of the population inhabit these territories. These places are extremely diversified, distant from other cities and centers of agglomeration, with demographic problems and unstable developmental trajectories, but nevertheless they have numerous resources for regeneration. The great landscape value, polycentrism and the growing attractiveness of these places gives them a great potential for development. Making these places safer, improving infrastructures and strengthening the cohesion of a community is a primary condition in avoiding depopulation, and permits the survival of smaller villages. The design of the Community Centers was created to fill this urgent need. From the architectural point of view, the research focuses on the development of a repeatable design type, which can be calibrated in different variations based on territorial needs. For a greater integration with the historical typological texture of the towns, the formal solution chooses a volumetric coherence of new buildings based on the dimensional and morphological characteristics of the territory. In fact, the typologies have a rectangular plan with a double pitched roof elevated to a maximum level, similar to the houses in the zone. Two different house sizes have been selected, which offer either one or two floors. The structures, characterized by the same section, are produced using three main structural elements:

a) The structure in elevation is made of continuous sections in reinforced concrete with polystyrene formwork. b) The wooden cover and first floor.

c) The east and west facades with large fixed windows in steel/PVC.

The structural conformation and building technique ensures maximum safety in the case of a destructive earthquake. Maximum energy sustainability for the morphological characteristics, construction details and materials used. Moreover, the buildings - which are equipped with a photovoltaic roof and electricity accumulator - are connected to micro smart grids linked to a set of intelligent totems for lighting and distribution of services including Wi-Fi, malfunction signals, environmental monitoring etc. The micro-smart grid guarantees lighting even in the case of natural disasters as well as Wi-

Fi, SOS, a radio communication system and GSM / Umts networks. There is interconnection between the various infrastructures via radio and video, a centralized storage system for each center capable of collecting renewable energy, and finally, electric mobility (also used for local tourism) which provides fast recharging for bikes, motorcycles and quads.

Conclusion

From the 'where it was how it was' approach, to the building of entirely new parts of a city, reconstruction after an earthquake provides various intervention strategies, whose success is conditioned by many factors, not least

the economic resources and administrative policies of the areas involved. It is also true that rebuilding an area exactly as it once was is not possible, or even desirable in many cases. Often it is difficult to imagine that the creation of entirely new parts of a city can be a valid solution to the problem; the new town of L'Aquila is an emblematic example.

At the same time, it must be said that relocation in temporary housing villages during the primary emergency phase, cannot be a long-term answer to the responsibility of rebuilding work that respects the zone and protects its landscape. Both temporary and permanent work has to be undertaken with the awareness of the extreme fragility of certain, already highly compromised, contexts, and should be done by looking at the quality of life of those who live there, enhancing safety and encouraging repopulation. From this standpoint, it is important to rehabilitate and not simply rebuild; facing disasters is an opportunity to do more and do better. It is therefore necessary to transform these damaged areas into resilient communities and then into resilient towns, and to make that happen, it is essential to equip the towns with the right instruments. The design of a more cohesive landscape is of primary importance, through stronger infrastructural links that utilize new technology and the historical networks made available by the territory, and which need to be boosted. In short, to rebuild a social network that has been fragmented not only by seismic events but also by gradual abandonment, it is necessary to support communities, instill hope and limit difficulties. Community centers have the dual function of being strategic rescue units and flexible spaces for citizen use. They integrate the needs of a temporary town with those of a more permanent one, and offer valid support during all the sequential phases of operational planning after an earthquake.

Figure 1. New plan of Palmi, 1783 http://www.blueplanetheart.it/2017/03/i-devastanti-terremoti-della-calabria-del-1783.
http://www.blueplanetheart.it/2017/03/i-devastanti-terremoti-della-calabria-del-1783

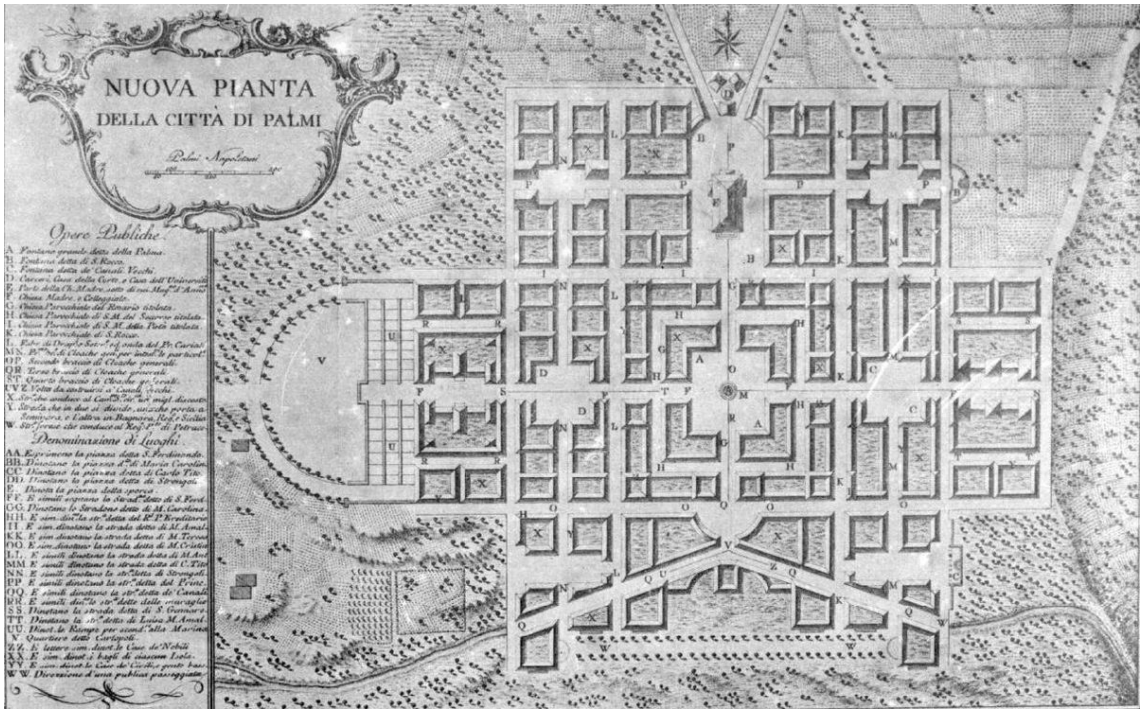

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Figure 2. Plan of Norcia, 1859.
Modena, Biblioteca Civica di Storia dell'arte "Luigi Poletti", Fondo Poletti, 1859.
http://www.blueplanetheart.it/2017/03/i-devastanti-terremoti-della-calabria-del-1783

Figure 3. Internal Area of Valnerina.
Layout by A.Fiorelli,V.Palini.
http://www.blueplanetheart.it/2017/03/i-devastanti-terremoti-della-calabria-del-1783

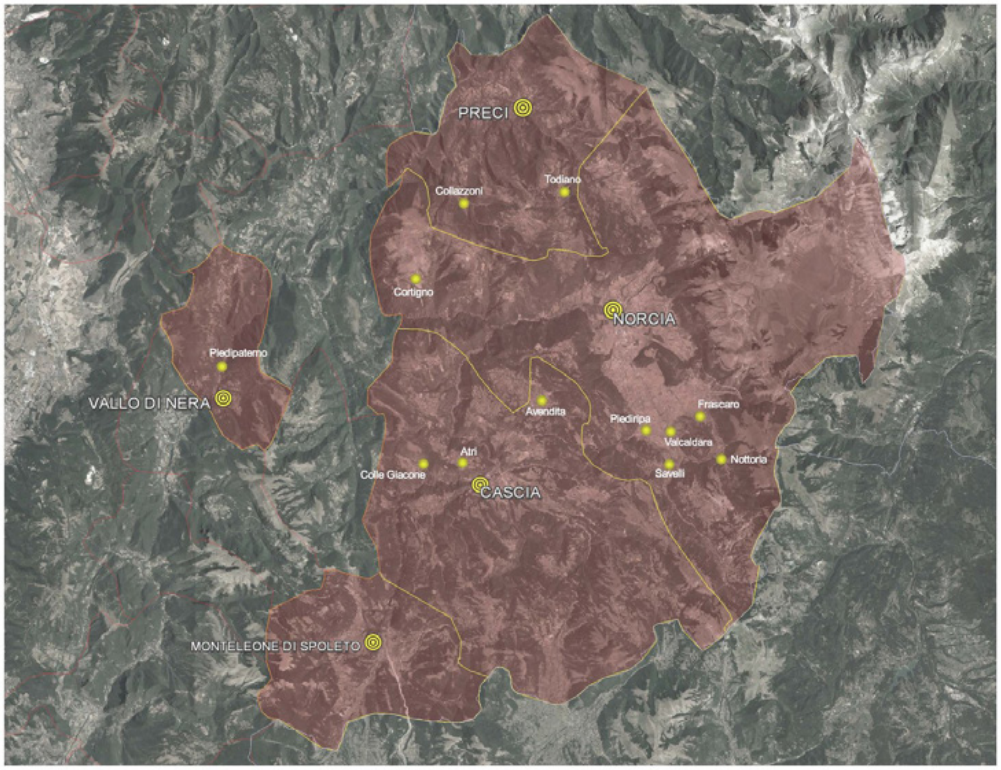
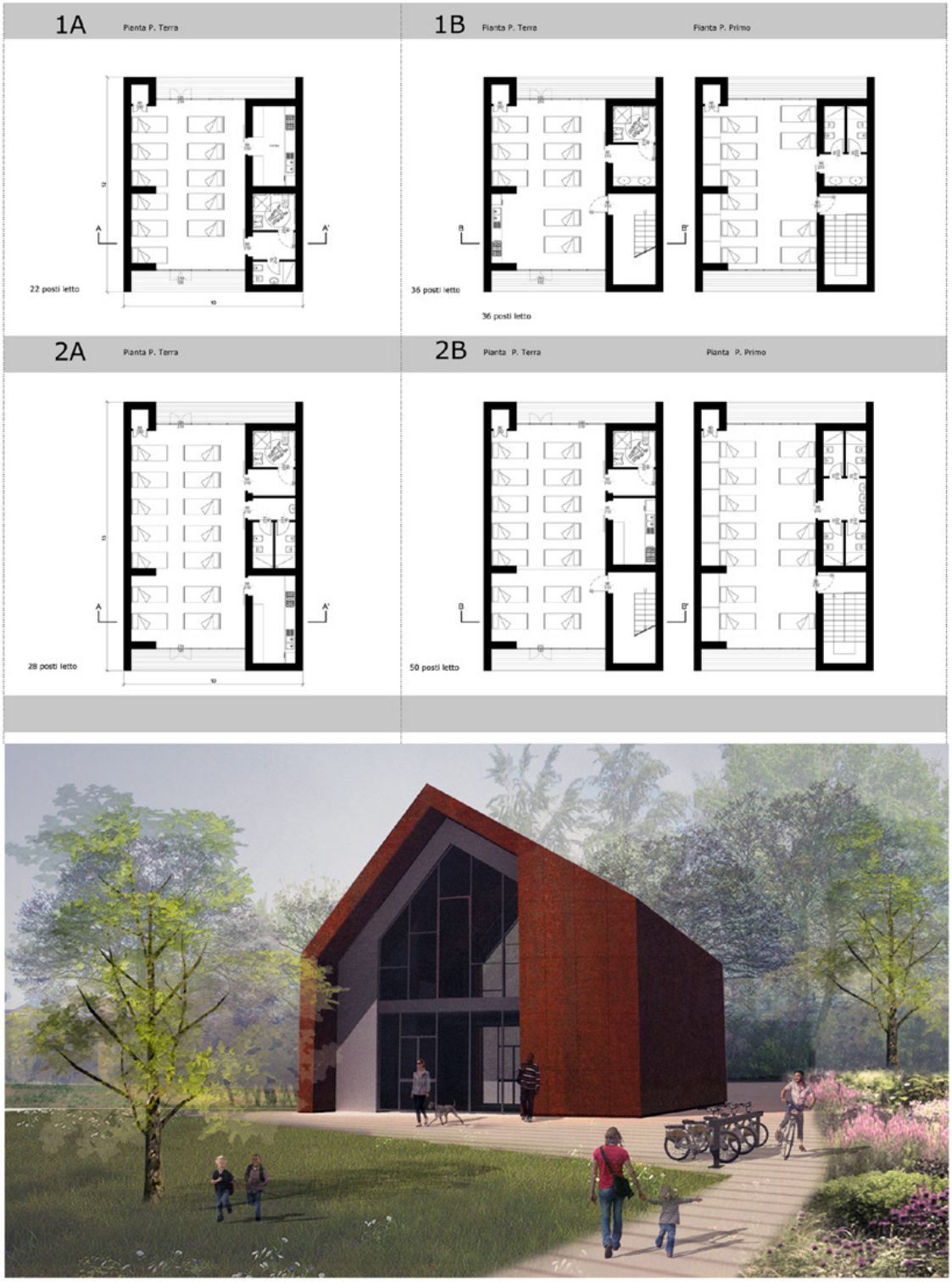


Figure 4. Community Centers, 2018.
Layout by A.Fiorelli,V.Palini.
http://www.blueplanetheart.it/2017/03/i-devastanti-terremoti-della-calabria-del-1783



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1 Sarti C., Saggio di congietture su li terremoti (Lucca 1783), Il nuovo giornale dei letterati, Società Tipografica, Modena, 1784.

2 Storchi S., Antichi edifici e rischio sismico. Dall'analisi alla prevenzione, Diabasis, Reggio Emilia 1999, p.53 [4] Faccio P., 'Lezione 5: Il Sisma', materiale didattico, Università IUAV di Venezia, A.A 2014/2015.

3 Faccio P., 'Lezione 5: Il Sisma', materiale didattico, Università IUAV di Venezia, A.A 2014/2015.

4 The main roads had to be at least 8 meters for smaller cities, from 10 to 13 meters instead for the most important ones. The secondary roads, from 6 to 8 meters wide, straight and orthogonal to each other.

5 Mariani M., La previsione e gli interventi per ridurre la vulnerabilità degli edifici, in L'IU, L'ingegnere umbro, Ordine degli architetti di Perugia review, n°99 dicember 2016, p.7.

6 Giacché L., Riflessioni sul terremoto dell'Appenino Umbro-Marchigiano del 30 ottobre 2016, Perugia 2016, p.1

7 Gambino R., Sargolini M., La rigenerazione dei nuclei e dei borghi storici dell'Italia Centrale danneggiati dal sisma 2016, RI-VISTA 02/2017, p.222.

8 Giacché L., ibidem, p.3

Il piano della densificazione. Edilizia di base, livello di aggregazione degli edifici e densità

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Il presente studio, basato sul metodo "processuale", indaga il centro di Fiumicino, centro urbano a lungo considerato periferia, collocato ad est di Roma e caratterizzato dalla rilevante presenza di edilizia spontanea, apparentemente non gerarchizzata e a prevalente destinazione residenziale.

Attraverso la lettura morfologica operata alle varie scale, è stato possibile interpretare ruolo e caratteri dell'attuale organismo aggregativo, ricostruire il suo processo formativo e comprendere il ruolo dei singoli elementi fisici strutturanti la città: strade, piazze ed edifici, sia il loro rapporto reciproco.

L'analisi svolta suggerisce possibili scenari di trasformazione di Fiumicino, nonché alcuni criteri, adottabili per la rigenerazione dei tessuti edilizi: densificazione dell'edilizia su percorso matrice, specializzazione e densificazione dell'edilizia in corrispondenza dei poli, aumento della dotazione di servizi che è attualmente insufficiente.

Il processo di trasformazione e densificazione coinvolge quindi il tessuto edilizio e non più il singolo edificio generalmente inteso come costruzione stabile, dotata di copertura, isolata da strade o da aree libere o da altre costruzioni mediante strutture verticali che si elevano senza soluzione di continuità dalle fondamenta al tetto (D.G.R. Lazio 243/2017). Operazioni puntuali sui singoli edifici porterebbero infatti ad un aumento di volume della preesistenza, ma non all'aumento di densità.

Oggetto della nuova trasformazione è quindi l'edilizia di base, costituita dagli edifici e dall'area di pertinenza cui sono inscindibilmente legati. Attraverso la definizione del livello di aggregazione abitativa all'interno del tessuto da trasformare, si introduce una nuova nozione di densità che sembra comprendere, non solo il rapporto tra numero di abitanti previsti (e quindi volumi edificati) e superficie, ma l'idea di concentrazione urbana espressa dalla continuità di volumi e superfici e dall'organizzazione dei percorsi e degli spazi comuni (Marzot, 2012).

The building fabric is generally understood as the result of the action of building[1]; it has as its primary in the purpose of the construction of buildings that normally specialize by function. The term building is commonly understood to be referred to a stable building, with roofing and otherwise laying or being fixed on the ground, isolated from roads or free areas, or separated from other buildings by vertical structures that rise without interruption from the foundations to the roof, functionally independent, accessible to people and destined to meet long-lasting needs[2].

In the field of Urban Morphology, on the other hand, the term building fabric is understood as the whole of the components that contribute to its formation: the construction and the soil on which it is built. In particular, with reference to the built lot, the building is composed of the actual buildings and of the area of relevance to which they are inextricably linked that qualify as primary elements and basic components of the building fabric: the dwellings (the basic building) and the routes on which they stand. To the formation of the building fabric also contribute the forms of the perimeters and the use of the territory, linked together to the existing building types and the materials used (Strappa, 2013).

Basic housebuilding is the main matter of building activity, both in terms of quantity, - it represents the largest built consistency in our cities - and in terms of quality. It represents the element that, throughout history, has constantly and primarily evolved by changing its form and its meaning and determining, through the aggregation of its building blocks, the formal and functional organization of the territory. "*The association of individual housing units leads to form units of higher scale develops following its own laws, variable in space and time, so much in a way that we can talk about fabrics as types of dwelling*"[3].

The forms of aggregation of buildings, as well as the definition of their level and character of aggregation, are therefore the determining factor for the transformation of the existing. The routes are the first man-made structures[4], the element that unifies two poles (a beginning and an end), the element on which the building was mainly found. By recognizing the hierarchy of routes within a building fabric, it is possible to interpret and reconstruct the fundamental and transformational phases of our cities.

Another element of self-evident centrality in the definition of a building fabric is the building density, in its sense of determining factor of the different categories of aggregation of buildings, a direct expression of the relationship of mutual influence of the buildings with other buildings, with streets, squares.

It seems appropriate to point out that, in the current scene, the building density is understood instead as the relationship between the overall volume insisting on an area and the surface of the area itself. This parameter, since its introduction into the Italian regulatory system with the Circular LL.PP. 425/1967 has always shown itself to be a measuring and fundamental element of the general planning tools. It expresses the intensity of construction on the territory and establishes the level of land occupation. Although it is a concept of relation not aimed at quantifying an absolute magnitude as can be the heights, the surfaces or the volumes of buildings, but instead as determining the relation between two magnitudes in the form of a ratio, the term density, in its common sense, expresses a static concept. As a demonstration of this, it is clear that, in practice, the term density is normally associated with the word housebuilding which, in the planning field, seems to allude to what has already been built. As opposed as to the term index[5] (understood as a ratio expressed in percentage between the numerical values of two sizes) is normally associated with the term edification: expression of something that has yet to be built and, above all, of the extent to which building can take place in the future[6].

In this context it is clear that building interventions aimed at densification do not finalise in a real increase in human concentration in the areas of intervention, but in the pure increase of the volume of the preexistence, without any alteration or mutation in the living conditions

1 See in this regard Institute G. Treccani (1995), *La piccola Treccani*, Roma, vol. IV, pag. 80, voice *Edificazione*
2 D.G.R. Lazio n. 243/2017
3 Strappa G. (1995), *Unità dell'organismo architettonico* (Dedalo Edizioni, Bari), pag. 114
4 Caniggia G. (1979), *Lettura dell'edilizia di base*, (Marsilio Editore, Venezia), pag. 205
5 See Istituto G. Treccani (1995), *La Piccola Treccani*, cit., vol. V, pag. 905, voce *Indice*
6 Antoniol M. (2011) *Gli indici di edificabilità. Superfici, volumi, densità edilizia*, (Exeo Edizioni), pag. 17

of the inhabitants. It is enough to think of a system of isolated houses inserted within their own relevant lots: the possible additions would increase the amount of area/volume available to individual owners, but there would be no increase in inhabitants, nor any improving in the quality of their lives.

A similar reasoning can be made for interventions affecting the urban or the territorial scale. The only difference is in the extension of the scope of intervention and in the definition of the infrastructure network that can improve its accessibility and pathways.

At present, therefore, "to densify" means increasing the building index of a given area and the consequent resulting projects are carried out in the most simplistic choice of the case, i.e. choosing some individual buildings or small areas and intervening or inside them, or in height. It means demolishing existing buildings and building new ones for predominantly residential use, it means proposing the reuse and change of destination of the buildings without altering their structure and the relationship with the context, it means increasing the heights of buildings, means working, on the shell of buildings - Semper - (for the purpose of their energy efficiency).

But the densification project certainly cannot be pursued only by the increase of building indexes, in fact if the housing culture and the corresponding project remain unchanged, the increase in indexes causes paradoxical disasters, nearing the isolated single-family buildings without foreseeing their aggregation, increasing the number of floors of new buildings and cancelling the already scarce public spaces. Density, which has increased only quantitatively, does not change social relations and can aggravate existing environmental conditions (Caruso, 2015).

It is clear that this meaning of density and the action of densifying it is not in itself sufficient to regenerate a city, a district, a block. This seems to exclude the "dynamic element" of density, its ability to represent relations between the parties, and denying its potential to determine the forms of aggregation of buildings (regardless of the intended use) and disavowing, at the various scales, the relationship of mutual influence of the components of the building fabric. It makes no sense to talk about density if you use the current meaning, not even as a survey or measurement tool"*before being a means of design, density is an instrument of analysis and interpretation of the growth and urban development of cities*"[7].

Since the density parameter is to be considered of significant importance for the definition of possible scenarios for the transformation of the existing and regeneration, and that the building fabric, mainly represented by the basic housebuilding, is the privileged area on which to intervene, a new notion of the term density is to be introduced which, through the definition of the level of housing aggregation within the fabric to be transformed, seems to express: the idea of urban concentration manifested by the continuity of volumes and surfaces and the organization of routes and common spaces (Marzot, 2012).

To regenerate and to densify the building fabric

In this context, in which building activity seems to conform as the work of transformation of the existing, provisional result of an ongoing modification, in which the peripheries of our cities claim the same principle of historicity identified in the historical centers and in which community rules require the consumption of "zero" soil, to regenerate and to densify, are the two necessary actions to be taken.

In open dissonance with what current design practices propose, regardless of the characteristics of the places, the partial transformation of buildings and the preservation of the existing urban form, the process of transformation and densification proposed here involves the building fabric, as the result of stratifications, consolidation of balances and of technological-constructive and compositional rules, which have produced architectural solutions capable of associating economization and simplicity of execution to meet the needs of urban organization (Argan, 1966).

Once consolidated in the various stages, the building fabric becomes in fact a matter of project to which the consciousness of man recognizes an attitude for transformation

7 REALE L. *Densità, Città, Residenza. Tecniche di densificazione e strategie antisprawl*. (Gangemi Editore. Roma), pag. 14

(Strappa, 2016).

The proposed research identifies the priority area of intervention and experimentation in the so-called peripheral and marginal areas of large cities. In analogy to what happened in the Middle Ages, when the first hamlets arose outside the city walls (nuclei isolated from the main settlement whose inhabitants did not even enjoy the same rights granted to the citizens of the city within the walls) and which over time have formally defined themselves to the point of being assimilated to the city, to the Hostels of the Poor[8] that, born to meet social needs, have structured themselves as complex buildings so as to assume an urban role or to experiments in the Renaissance era (just think of the intervention of transformation of the fifteenth-century "Palazzo della Ragione" of Vicenza, later completed by Palladio), is proposed a design method certainly not typical of contemporaneity, based on the recognisability of the attitude of the buildings to transformation, in tune with the social and economic changes that are peculiar to each historical period and on the reinterpretation of existing building structures.

The so-called Italian suburbs, areas commonly characterized by the prevailing - or exclusive - presence of simple functions such as the residential one, the productive or the goods storage function, have developed in a hybrid and fast way, partially following specific and unfinished planning instruments (written according to the territorial system within which they are inserted), in part have developed spontaneously. The building fabric that characterizes them is in fact in an intermediate position between those typical of the historic or consolidated city and the so-called spontaneous fabrics.

The recognition of the logic of development of these fabrics becomes the instrument capable of guiding their regeneration: through the design method based on the study of urban morphology, a design criterion is proposed that interprets, according to the tracing of a kind of genetic code of the special type, the resilience of the built to the contemporary instances of man and that provides the premises for the multiple design outcomes (among those possible) that can result.

Interventions on the building fabric presuppose a design approach that deviates from the current contemporary trends of densification and transformation. In fact, there is a generalized propensity to intervene directly on architectural objects (a method that necessarily implies the use of the same criteria for the transformations of buildings and of building fabric) without making any distinction between conservation work and transformation work. All this is done through the classification of intervention practices into types: restoration, recovery, expansion, renovation, construction, conversion, re-functionalization, strip[9].

A generalized tendency to reject the generating "principle" in architecture is recognized. The word "principle" comes in fact from Latin (principium, derivative of princeps, or "prince") and etymologically indicates "the first". The principle is first and foremost the act and the fact of beginning. From its temporal meaning comes the logical meaning, in the belief that what happened before is also the cause of what happens next. Principle is therefore the origin, cause, of which something derives, reason of being, the foundation of a reasoning. Unlike the term idea that has Greek matrix (ἰδέα, aspect, shape, appearance. The root is the same as the verb "ἰδεῖν, to see") and that in its most generic sense, in addition to being the representation of an object in the mind, indicates above all a static concept (notion that the mind forms or receives of a real or imaginary thing), the term principle it represents, in a dynamic sense, the essence of a thing, the origin of its (continued) transformation.

These are the prerequisites for the experimentation of the design method based on the study of urban morphology within the suburbs of our cities. The preferred area of intervention will be the building fabric, the regeneration of which could lead, in the methodological field, to the coincidence of the transformation intervention of the existing with those of new construction.

8 Si veda al riguardo Marzot N. (2012), http://www.wikitecnica.com, voce *Ibridazione*.
9 De Matteis F. (2009), *Architettura in trasformazione*, (Franco Angeli, Milano), pagg. 9-10

Trials of regeneration and densification in Fiumicino Centre

Through the study of the training process of Fiumicino, an urban center with a clear port matrix and long considered part of the periphery of Rome, it will be investigated and made experience of the potential of the design method based on the study of urban morphology within Italian suburbs, with the aim of proposing concrete design solutions with the strength to really regenerate and dense the landscape on which we intervene, establishing new nodes, centrality and axialities.

The first step of this study has substantiated in the regressive reading of the building fabric, and in the representation of significant and recognizable phases, at different scales, of the current aggregate organism; then in identifying the relationships between nodes and axis, between the weights and hierarchies of the parts that compose it (routes, fabric, nodes, polarities), finally in the formulation of a design proposal consistent with the reading of the process and verifiable in its implementation. The reading, carried out at the territorial and urban scale, makes possible to synthesize four phases of development of Fiumicino Centre: the phase of settlement, a first phase of expansion, a second phase of expansion and a phase of consolidation.

First Phase: Settlement

A first phase of the settlement of Fiumicino's original nucleus (since 1828) is to be recognized with the construction of the Borgo Valadier, a building complex designed with the aim of architecturally reordering the original village that spontaneously arose on the way of the Clementine Tower and to enhance the sea access door to Rome. The complex of buildings housed various functions: church, customs, post office, hospital, hotel, inns, dwellings and stables. This is a planned settlement phase as the first building core has arisen along the widening of the Portuense Street (now the via della Torre Clementina), in a formerly agricultural area. The planning character of this settlement is highlighted by the fact that for many years the road fabric has preceded the advancement of the building. The building fabric has developed through the hierarchization of pathways: it is evident the dependency relationship of the secondary routes with the matrix of the ancient Portuense street.

Second phase: first expansion

Following the approval of the P.P.E. of Fiumicino in 1931 (Executive Plan prepared in the implementation of the general guidelines of the PRG in Rome) the building activity moves from the original nucleus (Borgo Valadier) to the cost. The construction becomes more intense and it is formed in a disorganic fabric, seemingly autonomous with respect to the pathway system. The Portuense road is extended along the Tevere waterway to the coast and new planned routes are being built on the tracks of the reclamation canals, in the southern part of Fiumicino (Isola Sacra).

Third phase: second expansion

In the period between 1935 and 1962 Fiumicino is undergoing a phase of second expansion. The building is mainly concentrated in the southern part of the Isola Sacra. A new urban matrix route develops (the current Lungomare della Salute) along the coast and, on this, a rather regular building fabric is grafted with a predominantly residential character. The Fiumicino Centre area is affected by the development of spontaneous buildings of predominant residential destination behind the Borgo Valadier, along Via Giovanni Battista Grassi (matrix route of spontaneous origin to the urban scale). Construction in the planned area of Fiumicino Nord is halted.

Fourth phase: consolidation of the building

Since the 1960s, the Fiumicino area has undergone a strong building expansion, and a

strong population increase. The project activity has concentrated exclusively on the southern part of Fiumicino while the Fiumicino Centre area continues to be the subject of a rapid and spontaneous development, with the result of appearing as an occasional set of constructions without a clear link of continuity between the single parts.

The reading carried out on the building fabric, along the matrix routes and for individual lots, has allowed instead, despite the presence of buildings of heterogeneous character, the identification of the recurring type of the single and multi-familial isolated house, arranged orthogonally to the street and characterized by private garden, especially on the matrix routes of spontaneous origin, Via Giovanni Battista Grassi and Via Delle Scuole (area of the sprawl), then the type of multi-storey building at apartments characterized by the aggregation of individual spaces served by a common space-scale, on the matrix route of territorial origin of Via di Torre Clementina (area of the Borgo Valadier).

The next step was to formulate a synthesis of these results and to find a design solution aimed at regeneration and densification consistent with the process reading of Fiumicino Centre. At this stage it became clear how outdated is for the definition of the areas of intervention, at the territorial and urban scale, the classic distinction between territorial area and buildable area (consolidated in our system since the 1960s and in accordance with the expansion projects) that distinguished the areas already urbanized from those still to be urbanized and, above all, the poor assessment of the close relationship between the two parameters. The direct consequence of this distinction was the limitation of intervention areas to the buildable area alone, that of individual private lots and private buildings, the only one capable of producing usefulness. The concept of a territorial area, in fact, in the current legal and planning system implies, in general, the concept of gross[10] and includes all those elements that contribute to the formation of public spaces (routes, squares, schools, etc.) which, therefore, are excluded from the sphere of the project.

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A similar separation is to be found at the building scale, where all those elements intended not to produce usefulness, therefore balconies, lodges, porches, passages, are excluded from the calculation of the volume of buildings and therefore subject to strong dimensional limitations because not "useful". With the introduction of derogatory rules within our legislative system, these elements have also become the subject of expansional interventions aimed, through the closure of them, to the increase of the so-called useful surface[11] of the buildings. The buildings have expanded, but they have not been transformed.

Contrary to the above, it is considered that the continuity of volumes and the organization of the routes and common spaces, which are most represented by these elements that do not seem to produce usefulness, are the fundamental elements for the projects of transformation and densification of our suburbs, a design method is proposed that intercepts the regenerative potential and investigates the possible forms of aggregation of such elements.

The plan of densification is structured through various phases, all focused on the building fabric. Once the specific points of the territory in which the fabric tends to polarize have been identified, the specialization of these areas has been proposed in a way that the real pole may be formed, which will act as a catalyst for the surrounding areas. In these places, the construction of special buildings and squares is planned, following the natural process of specialization of the house and introducing the theme of tying as a unitary gesture of design, capable of solving problems whose spectrum varies from urban to territorial scale (Falsetti, 2017). The polarity of an area is closely related to the route of which it originates or ends.

In the case of buildings structured on matrix routes (via della Torre Clementina), of territorial derivation, it is considered appropriate to propose the recasting of the fronts, more characterized by basic housebuilding, through forms of wall sharing (this process has already been consolidated in the national territory, for example in the process of recasting of terraced houses) and specialising ground floors, intended for services for the inhabitants.

The proposal to demolish existing buildings has been quite rare, except in the case of

10 For example, gross weight, gross receipt and gross income, which include rispectively the tare, the expenses to be deducted, and possible taxes. See. ISTITUTO G. TRECCANI (1970), Italian Encyclopedic *Dizionario enciclopedico italiano*, Roma, vol. VII, pag. 122, voice *Lordo*.

11 See N.T.A. of the P.R.G. of Rome, art. 4, comma 1

clogging buildings. At the building scale it is reasonable to propose the recomposition of building aggregates through the occupation of the relevant areas (area of the *sprawl*, behind the Borgo Valadier). Recognized the building type and the compositional logic of the buildings the recomposition of the fabric through the insertion of new housing cells has proposed, organized in serial way on the matrix routes of spontaneous origin (via Giovanni Battista Grassi and via Delle Scuole). It has also been necessary to move the entrances of the houses as well as the vertical openings from the side facades to those on the main fronts and on the internal fronts directly facing the newly established interior courtyards.

A change in the intensity of the building has been envisaged depending on the greater or lesser proximity to the identified poles and also of the widening of road locations, consistent with their new role. This society of buildings shares structure and functions, in close accordance with the needs of the population, which is also structured according to community rules.

The last step was to verify the feasibility of these proposals. Well aware of the fact that any building activity should be carried out in the strictest compliance with the current legislation, however, there is no need to make mention of the list of urban/administrative instruments that could be used for the implementation of the present proposal because they are the same ones that are used today to propose the individual interventions of expansion of buildings: former Piano Casa, Urban Regeneration Law, Comparti Edificatori, Programmi Integrati di Intervento, ecc..

Instead, we focus on the novelty of the proposal, which from a design point of view invests the building fabric of the suburbs and proposes a process of transformation based on the recasting and specialization of basic housebuilding, hence of minor architecture and whereas, from an administrative-planning point of view, it has a direct consequence on the real increase in the urban load of the area under intervention[12].

Current densification projects are implemented through the seeking of areas to be destined to infrastructures, services, equipment, public spaces or of public use in areas outside of intervention areas (not buildable because, in most cases, already affected by limitations in building activity) or through the payment of an economic contribution consistent with the size of the proposed intervention. In the case of the submitted proposal, on the other hand, the increase in the urban load would take place within the building fabric itself, in proportion to private construction. The result of the transformation of the primary settlement (housing) has as a direct consequence an equivalent value in collective structures and works within the same newly established building aggregates.

12 See in this regard the Regolamento Edilizio Tipo issued with the DPCM 20 October 2016 which defines the urban load as the *Requirement of territorial endowments of a given property or settlement in relation to its size and purpose of use. The increase or the reduction of this requirement as a result of the implementation of urban interventions or following changes in the use are a change in the urban load.*

Figure 1. Fiumicino Center: Stages of Urban Transformation 1. CARLO LANDI. Map of the Port Estate, 1818; **2.** SPADONI LEONIDA. Map of the Port Estate, 1874; **3.** Ufficio Tecnico dell'amministrazione Torlonia. The township of Fiumicino; **4.** Archivio Progetti del Comune di Roma: Building and expansion plan of the beach of Rome, Regio Decreto 13 luglio 1933.

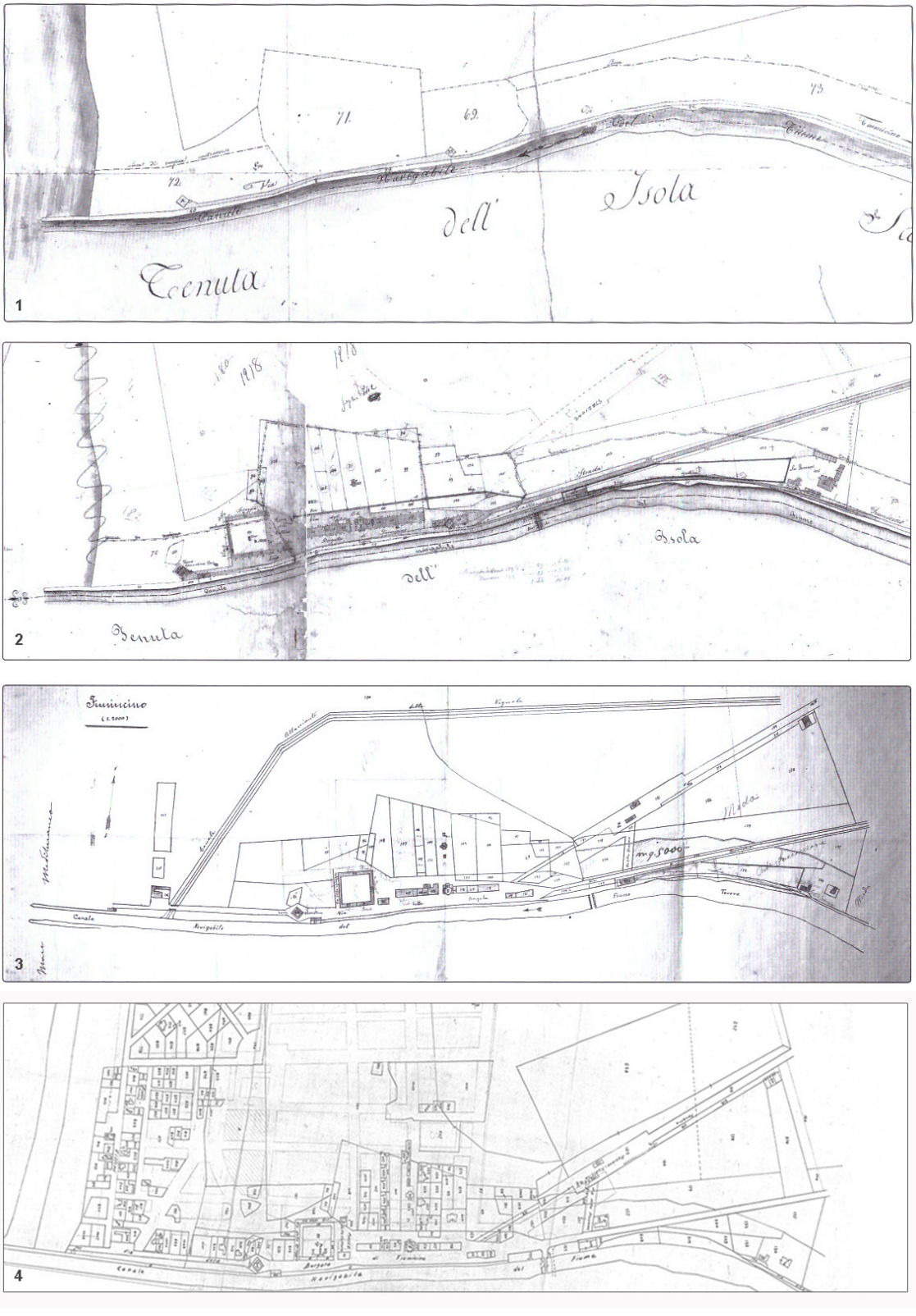

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Figure 2. Fiumicino: Elements of urban morphology
The phases of Fiumicino's formation process: Phase 1: Settlement (1828); Phase 2: First Expansion (1930); Phase 3: Second expansion (from 1935 to 1962); Step 4: Consolidation (since 1965). Work carried out within the Laboratorio di Progettazione Architettonica II - L.M. Restauro, Proff. Giuseppe Strappa, Paolo Carlotti. Faculty of Architecture, University La Sapienza, A.A. 2017/2018. Student: Danilo Incitti.

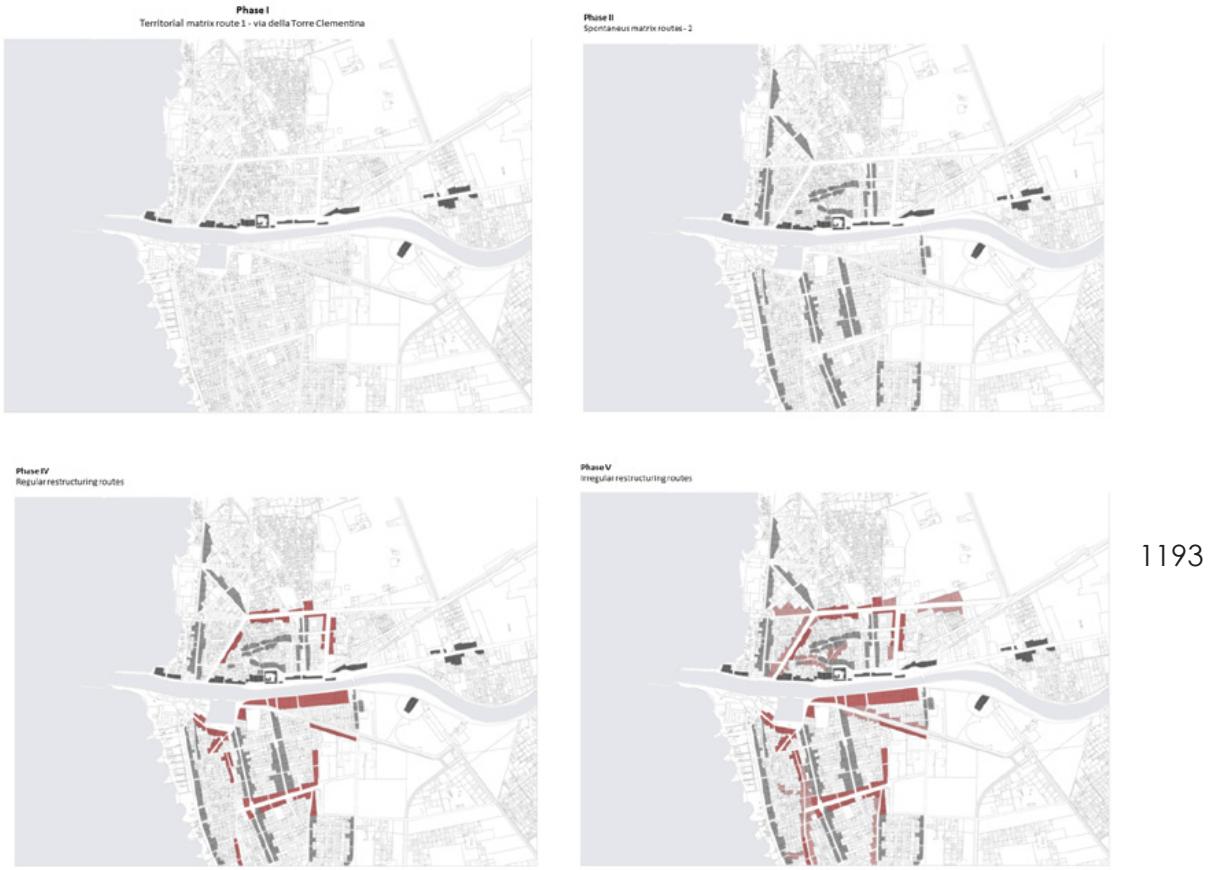


Figure 3. Morphological characters of densification

In sequence: fabric components (routes and buildings); building fabric; expansions to the building scale and in accordance with current building regulations (former Piano Casa and law on Urban Regeneration); densification and regeneration of the building fabric through the aggregation of basic housebuilding.

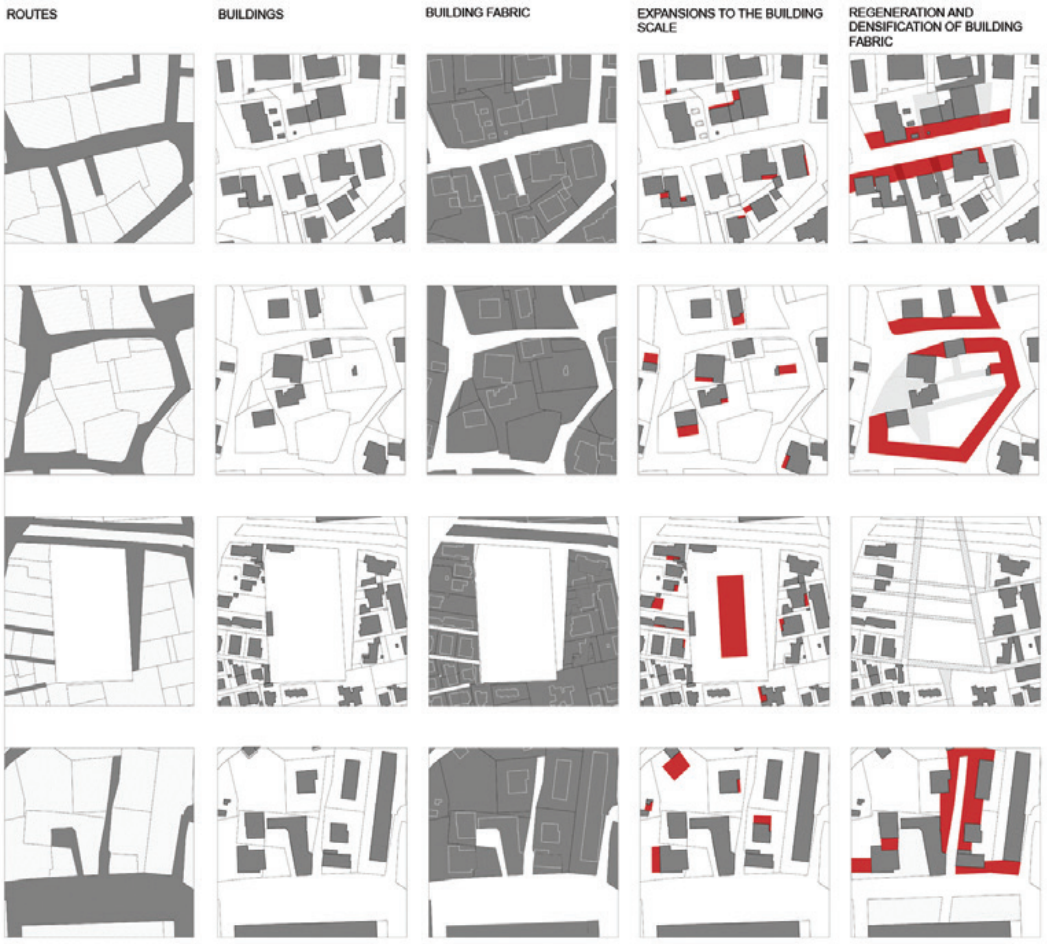
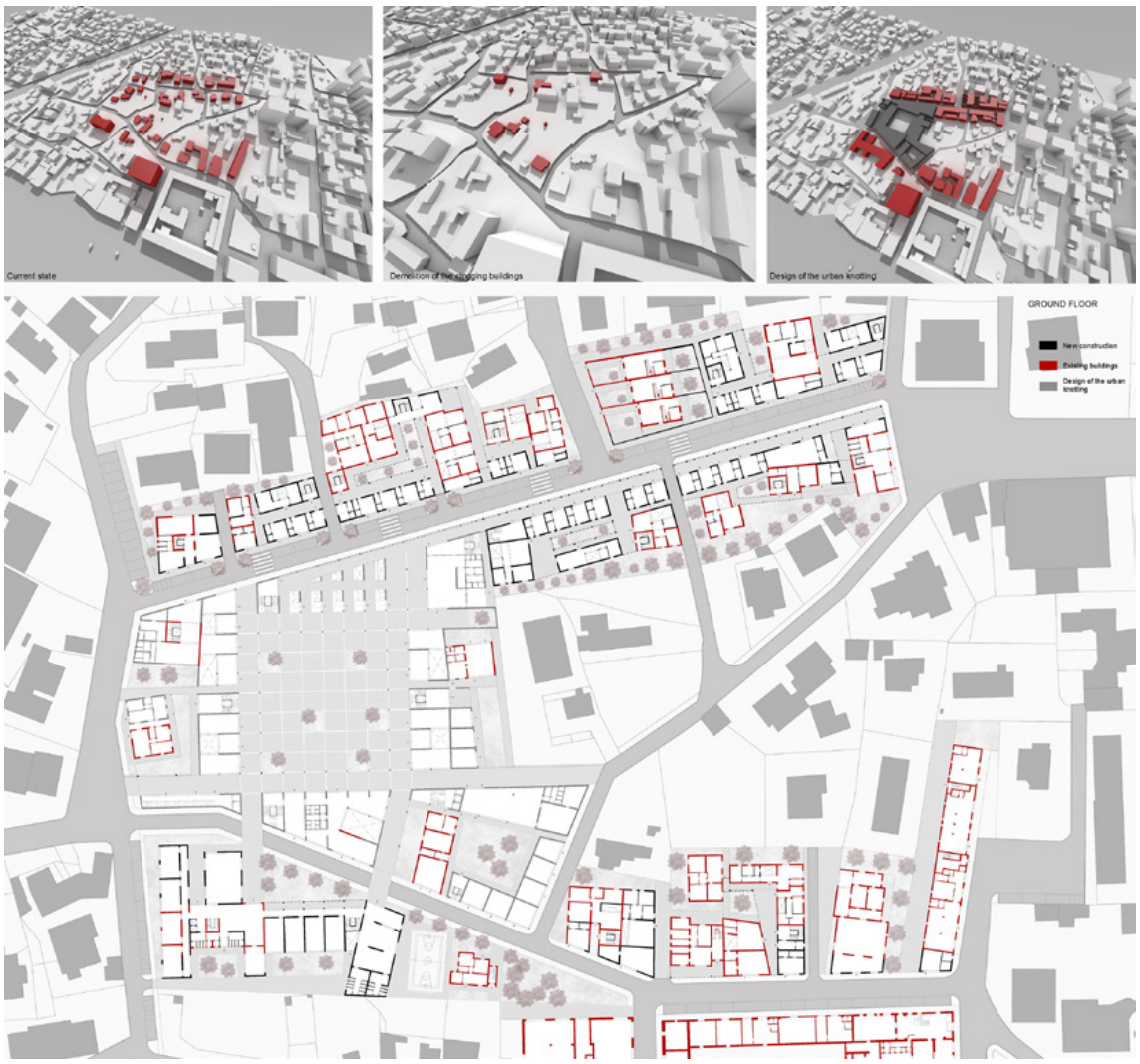


Figure 4. Design hypothesis: recasting and specialization of the urban fabric. Via delle Scuole e via G.B. Grassi

Densification proposal of the spontaneous urban fabric. Reconstruction of the structure of the blocks on the matrix routes of spontaneous origin by recasting the fabric by building the pertinent areas of the housing units and by the construction of passages and common yards within the buildings linearly arranged on the route. No demolition of any existing building is expected. It is foreseen the formation of a new square and special housing in the polar area identified by the analysis of the building fabric. Work carried out within the Laboratorio di Progettazione Architettonica II - L.M. Restauro, Proff. Giuseppe Strappa, Paolo Carlotti. Faculty of Architecture, University La Sapienza, A.A. 2016/2017. Student: Silvia De Gennaro.



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La città contemporanea fra crisi di identità e ricerca di possibili istanze semantiche

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"lo spazio umano in genere (e non soltanto lo spazio urbano) è sempre stato significante. […] l'abitato umano, la «οικουμενη» – come possiamo intenderlo attraverso le prime carte dei geografi greci: Anassimandro, Ecateo, o attraverso la cartografia mentale di un uomo come Erodoto – costituisce un vero discorso, colle sue simmetrie, opposizioni di luoghi, colla sua sintassi e i suoi paradigmi. […] la concezione utilitaria di una disposizione urbana fondata su funzioni ed usi, che attualmente trionfa quasi incontrastata, è una concezione posteriore."(Roland Barthes)

Oggetto di questo contributo è riflettere sulla possibilità di riferirsi ancora oggi ad una istanza di semiotica urbana alla luce della crescente crisi di identità che attraversa la città contemporanea. Nella città antica (e soprattutto in quella greca) tale sistema s'era basato sul grado semantico-semiotico delle sue forme, che, derivato dal perpetuarsi dei principi archetipici della mimesis, s'erano tradotti nell'artificio di una propria, "autonoma" scrittura tettonica. Da qui, il consolidarsi di una "Metafisica architetturale", che, trasmissiva di significati trascendentali, aveva evoluto la forma altrimenti elusiva delle ristrette necessità funzionali.

Se ciò è ancora oggi sostenibile, bisogna allora considerare che la semiotica urbana possa prescindere dalla pura funzione utilitaristica dei suoi elementi? E questo, in un mondo che va costruendosi per "immagini" vagamente riferibili o indipendenti dalla propria funzione?

La dissertazione ha come finalità, l'affrontare specifico di questo tema; ovvero, quello di indagare la crisi della Forma urbana alla luce della perdita di identità, il tutto, secondo una prospettiva tesa a individuare possibili tracce di nuove semantiche spaziali.

Premessa

"*lo spazio umano in genere (e non soltanto lo spazio urbano) è sempre stato significante. […] l'abitato umano, la «οικουμενη» – come possiamo intenderlo attraverso le prime carte dei geografi greci: Anassimandro, Ecateo, o attraverso la cartografia mentale di un uomo come Erodoto – costituisce un vero discorso, colle sue simmetrie, opposizioni di luoghi, colla sua sintassi e i suoi paradigmi. […] la concezione utilitaria di una disposizione urbana fondata su funzioni ed usi, che attualmente trionfa quasi incontrastata, è una concezione posteriore***."**
(Roland Barthes)[1]

La forma urbana è oggi sempre più sottoposta al proliferare di "linguaggi" che si sovrappongono all'identità del suo palinsesto storico; forme di una "comunicativa", che pur carica di aspirazioni estetiche, risultano spesso prive di significato o di patrimonio lessicale strutturalmente ed etimologicamente riferibile alla storia della città.

Riflettere su questa condizione, significherebbe indagare il rapporto che lega l'*ente fisico* alla sua "sostanza *segnica*", significherebbe accettare il principio secondo cui, la Città, pur sfuggente a qualsiasi stabilità linguistica, abbia tuttavia costruito nel tempo una propria struttura grammaticale fondata sulla capacità iconico-simbolica dei suoi fenomeni culturali.

"Ritengo […] (e questo punto mi sembra fondamentale tanto più perché contrasta con quanto viene sostenuto oggi dalla maggior parte dei ricercatori) che esista, non sempre, ma spesso, un «quid formale» – potremo definirlo un gestaltema – capace di comunicare qualcosa esclusivamente in base al suo aspetto formale-configurazionale. […] *La significanza architettonica, cioè, sarebbe piuttosto di ordine non concettuale, non razionale, ma simbolico; anche se tutto quanto il processo operativo ed esecutivo di quest'arte appare sottoposto alla logica e alla razionalità. E, in questo senso, l'architettura rientrerebbe in quella categoria di «forme simboliche» così ben indagate e studiate già da Ernst Cassirer."*
(Gillo Dorfles)[2]

Se cioè, il "testo architettonico", a differenza della parola scritta o verbale, non possa dirsi, costituito da significati univoci, è anche vero che le sue denotazioni simboliche, abbiano assunto nel tempo, significati spesso specifici.

Nella città storica, essi avevano infatti rappresentato una vera e propria forma di linguaggio, che, comunicativo delle esigenze e delle culture che avevano plasmate le sue forme, era andato a dotarla -come ci ricorda Victor Hugo- di una vera e propria "dimensione scritturale". Operazione, questa, che s'era condensata negli ordini classici, formulando l'architettura -come straordinariamente teorizzato da John Summerson ne *Il linguaggio classico dell'architettura*-[3] di una propria specificità sintattica destinata a farsi oggetto di implementazioni linguistiche, spesso oppositive anche al loro originario regolamento.

Era stato Vitruvio, col suo *Trattato*, a porsi per primo questo problema; quello cioè di dotare l'architettura e la Città, di un vero e proprio sistema lessicale aprendo ad una speculazione disciplinare destinata a farsi argomento della generale Trattatistica che dal Rinascimento porterà, più recentemente (a partire cioè dalla metà del secolo scorso) alla definizione di una possibile semiologia urbana. Da lì, il tentativo di definirne un "vocabolario", dotando la città di una propria "specifica coscienza semiotica" capace cioè di strutturarne tanto le leggi interne, quanto le sue stesse evoluzioni, non già, tuttavia, i fenomeni ad esse annessi, quelli che oggi vedono restituirci la "babelica" condizione cui ci aveva avvertiti Ludovico Quaroni.

Il *significato* in architettura sembra infatti, essere, oggi, sempre più caratterizzato da una provvisorietà interpretativa, che amplifica la già storica difficoltà delle sue stesse capacità denotative, mettendo in crisi anche il rapporto col suo patrimonio storico, di fatto resistente, grazie alla forza evocativa del suo linguaggio. Così ci ricorda ancora, Gillo Dorfles:

"[…]*certe funzioni «simboliche», soprattutto in architetture provenienti dal passato, sopravvivono anche quando sia andata perduta la conoscenza della effettiva funzione denotativa (o rispettivamente connotativa): ed è questa una delle ragioni per cui credo si possa effettivamente parlare a proposito di forme architettoniche di una loro capacità*

comunicativa trans-epocale; ossia d'una possibilità di essere decriptate non già in base a un codice che può essere anche andato del tutto perso, ma in base a un tipo di messaggio simbolico – o meglio segnico (giacché non è che esso si basi su una convenzione) – che riesce a superare i tempi, a essere anzi « fuori dal tempo » – eppure sincronico come accade per molte forme del rito, del mito, e delle espressioni simboliche e metaforiche dell'umanità."

Ma se nell'inedito della città contemporanea, è proprio la forza del linguaggio storico a dare resistenza al suo *significato* (e dunque alla sua identità), è però anche vero che le sue "eccezioni o divergenze linguistiche" rappresentano la retrospettiva del, seppur indecifrabile, suo *zeitgjest*.

"*Per quanto un'epoca cerchi di mascherarsi, la sua vera natura trasparirà attraverso la sua architettura*", aveva detto Sigfried Giedion.[4] Considerazione -quella del grande storico cecoslovacco-, che porta a ritenere il campo urbanologico, struttura rimandante a *significati* che trascenderebbero dalla più diretta, coerenza semantica. Molte società o comunità, sappiamo infatti, essere legate ai propri luoghi, indipendentemente dalla qualità dei loro *habitat*, anche quelli più regressivi, avendo sedimentando il proprio *cogito* auto-identificativo nelle forme che ospitano lo svolgimento della propria azione quotidiana. Le relazioni fra immagine e contenuto sono infatti soggette tanto alle forme culturali, quanto alle denotazioni sviluppate nella consuetudine del loro uso; "relazione di reciprocità" che, pur nell'inconsueto e nell'incoerente, diventano -tuttavia- espressione di una propria semanticità. Aspetto, questo, che porta a considerare il *significato* in architettura, tanto labile (se non nella radice etimologica dei suoi archetipi) quanto dinamico nei suoi processi relazionali e nella variabilità dei referenti "fattuali".

Aree industriali, aree dismesse, periferie e fenomeni suburbani spontanei, rappresentano infatti, entità tuttavia riconoscibili: *significanze* urbanologiche, restitutive tanto del "suprematismo linguistico" giustificato come impellenza delle sopravvenute necessità, quanto, dell'incapacità dimostrata dalla Città ad assolverne la loro funzione; le stesse, che rendono oggi fuorviante, la possibilità di "paradigmatizzarne" i fenomeni, quanto, semmai, utile per avviare azioni progettuali date a fare dello stato di *crisi*, il luogo interrogativo di un possibile sincretismo fondato sulla relazione, o "contrapposizione dialettica", fra invarianti storiche e nuove esigenze socio-abitative.

Come ci spiega infatti la Linguistica, una funzione fondamentale nel riconoscimento delle identità semantiche, è data proprio dai fenomeni ad esse "neutri od oppositivi".

Provare a ri-significare lo spazio del nostro tempo nella circolarità linguistica della Storia, significherebbe quindi legittimare le sue contraddizioni, quale "struttura segnica" necessaria, tanto ad evidenziarne il significato, quanto a riformulare i suoi incerti differimenti.

Fenomeni come, vuoto, disgregazione, estrema densità o rarefazione, se così intesi, assumerebbero allora il valore di potenziali *significanze urbanologiche* date a svelarci le condizioni, spesso inattese, di un positivo rivolgimento funzionale ed estetico, cui la città compiuta non potrebbe assolvere, se non attraverso la messa in crisi dei propri sistemi. Significherebbe, in altri termini, investire sui moti che sgrammaticano la "scrittura urbana", rifondandoli in quel "processo di conoscenza" che Charles Peirce aveva indicato nel passaggio dalla condizione di *dubbio* alla *relatività* delle ipotesi, sempre e comunque da intendere come *manipolazioni* di un possibile sistema interpretativo.

Un esperimento applicativo

I progetti qui brevemente presentati, sono l'esito di questo approccio; un approccio teorico-metodologico mirato a farsi sintesi degli aspetti storico-strutturali / cognitivo-iconologici interrelanti, quindi, struttura fisica, struttura storica, fenomeni sociali e rimandi a contenuti culturali, letterari, simbolici e mnemonici.

Fondamento, ne è il circuito di relazioni dato ad analizzare e interpretare i contesti, mettendo in rapporto le invarianti strutturali della città consolidata, con l'indecifrabilità linguistica connaturante i processi regressivi; ciò a partire della riformulazione critica della nozione di *organicità*, oggi, forse, insufficiente, se confermata soltanto come congrua "mutuabilità" delle componenti fisiche, quanto, invece, come fenomeno "relazionale", dato ad agire in maniera non sempre e non necessariamente lineare, alle "discontinuità"

che sono *in nuce* alle "antifrasi" fisico-sociali.

Ipotesi, questa, che, traslando le tesi semiologiche di Roland Barthes, è andata ad intendere le città e i luoghi indagati, come fenomeno "plurimorfe"; da cui la ricerca di *nuclei semantici* espressivi delle differenze fisico-linguistiche inverate nella sua generale struttura. *Nuclei semantici*, che nei progetti sono andati a corrispondere alle invarianti strutturali-cognitive, rappresentate dalle strutture territoriali, dai tracciati urbani, dai rapporti tipo-morfologici e dei conseguenti inveramenti architetturali, dando origine a processi di "manipolazioni critiche" incentrate sulla possibile riformulazione dei fenomeni disorganici, in logica rispondenza alle permanenze storiche.

Le città interessate sono quelle collocate al centro del territorio *daunio*, lungo il tracciato della via Consolare (strada Regia) che collega la Puglia a Napoli; quelle cioè dei *Cinque Reali Siti,* corrispondenti alle città di Orta Nova (principale centro), Carapelle, Ordona, Stornara e Stornarella; città che rifondate in epoca borbonica su antiche preesistenze romane e medievali, erano diventate nel corso del Ventennio, oggetto di veri e propri Piani di Fondazione, quelli che, prodotti dall'*Opera di Bonifica*, vedono oggi, questo loro patrimonio, culturale e insediativo, disperso nelle forme regressive dell'espansione periurbana degli ultimi decenni.

Le aree di intervento si collocano infatti ai bordi della città consolidata, a diretto contatto con l'immediato extra-moenia coltivo, lì dove, cioè, più evidente si fa la discrasia insediativa, utile a sperimentare interventi di parziale rifondazione urbana.

Fondamento, ne è l'approccio tipo-morfologico, letto nelle logiche dei processi *generativo-trasformazionali* in certo modo derivati dalle tesi sviluppate da Noam Chomsky nel campo della linguistica; processi cioè, *morfogenetici*, derivati dall'azione incidentale della "differenza", quale sostantivo necessario ad attivare un ripensamento dell'attuale loro condizione all'interno della circolarità dei "codici" formativi, originari. "Multipli insediativi" analogicamente tratti dai codici storicamente strutturanti questi borghi, riformulati in aderenza alle nuove esigenze spaziali, provano così a consegnarsi alle città esistenti come contributo all'affermazione delle loro *forme-urbis* promuovendosi come possibile(?) processo di ri-significazione delle attuali "incoerenze", nell'ideale "metafisicità" dei loro statuti originari.

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Segni-invarianti ne sono, infatti, i sistemi orografico e antropico, rappresentati dalle griglie infrastrutturali, dalle canalizzazioni idriche, dalla verticalizzazione dei silos-granai, dalla suddivisione poderale e della traslitterazione tipo-morfologica; segni, che tramutati nella assiomatica regolarità dei nuovi impianti, vanno a comporre la *semantica pianificatoria* di un più generale "comprensorio urbano-rurale multicentrico". Al suo interno, forme urbane "esatte", quasi sempre regolari (ovvero, pseudo quadrate o rettangolari) vanno a farsi restitutive, tanto del possibile riordino delle periferie, quanto del rimando alla precisa *estetica geometrica* dei Piani di Fondazione, rimodulando e riformulando a se, parte della campagna, in orti urbani, quali *essenza* insediativa di questi luoghi.

Fulcro del loro "annodamento" è la struttura della piazza: una sorta di *radura* generata all'interno del tessuto, che, calibrandosi in rapporto agli assi di maggiore confluenza visiva, determina la collocazione dell'edilizia specialistica più eloquente; quella cioè delle torri religiose, civili e dei silos-granai; le stesse che, situate nell'immediato bordo, a cospetto della campagna, vanno a "spiccare" sulla prevalente orizzontalità dell'impianto, "misurando" e connaturando la sua stessa identità urbanologica per farsi *cogito* di orientamento nella vasta piana del territorio. È lì, infatti, che trovano maggiore espressione i fenomeni storicamente connotanti questi luoghi; quelli, cioè, determinati dalla contrapposizione dialettica fra strutture abitative "minute", orti coltivi e forte verticalizzazione dei silos; fenomeni iconici, assunti nei progetti come fonte di rilettura critica non solo dei luoghi regressi, quanto dei codici stessi, introdotti dall'*Altra Modernità*.

Base specifica di questa rilettura, sono i tipi edilizi che formano gli interventi, frutto, a loro volta, di una sperimentazione condotta sull'aggiornamento dei caratteri architettonici tradizionali, quali quelli della *casa a schiera* e della "*casa a pseudoschiera*", reinterpretati attraverso la revisione dei sistemi distributivi e il ricorso a quella "riduzione semiotico-semiotica", che è dell'*estetica della necessità* propugnata da Giuseppe Pagano nel monumentale saggio "Architettura rurale in Italia". Esito ne è l'"elementarismo" tettonico che governa la loro "sintassi", espressiva della volontaria rinuncia a qualsiasi elemento sovrastrutturale, a

qualsiasi "plastica secondaria" che potesse inficiarne l'opera di "scarnificazione": quella, cioè operata attraverso il trasposto del "linguaggio architettonico rurale" in una possibile "neo-modernità", provando a fare delle loro contraddizioni, così come di quelle che connaturano il linguaggio regressivo, il piano di aggiornamento dei rispettivi retaggi figurativi.

Figure 1. Reali Siti. *Analisi dei fenomeni formativi a scala territoriale;* **2.** Reali Siti. *Analisi dei sistemi morfologici*; **3.** Quadro sinottico dei progetti e delle procedure di intervento.

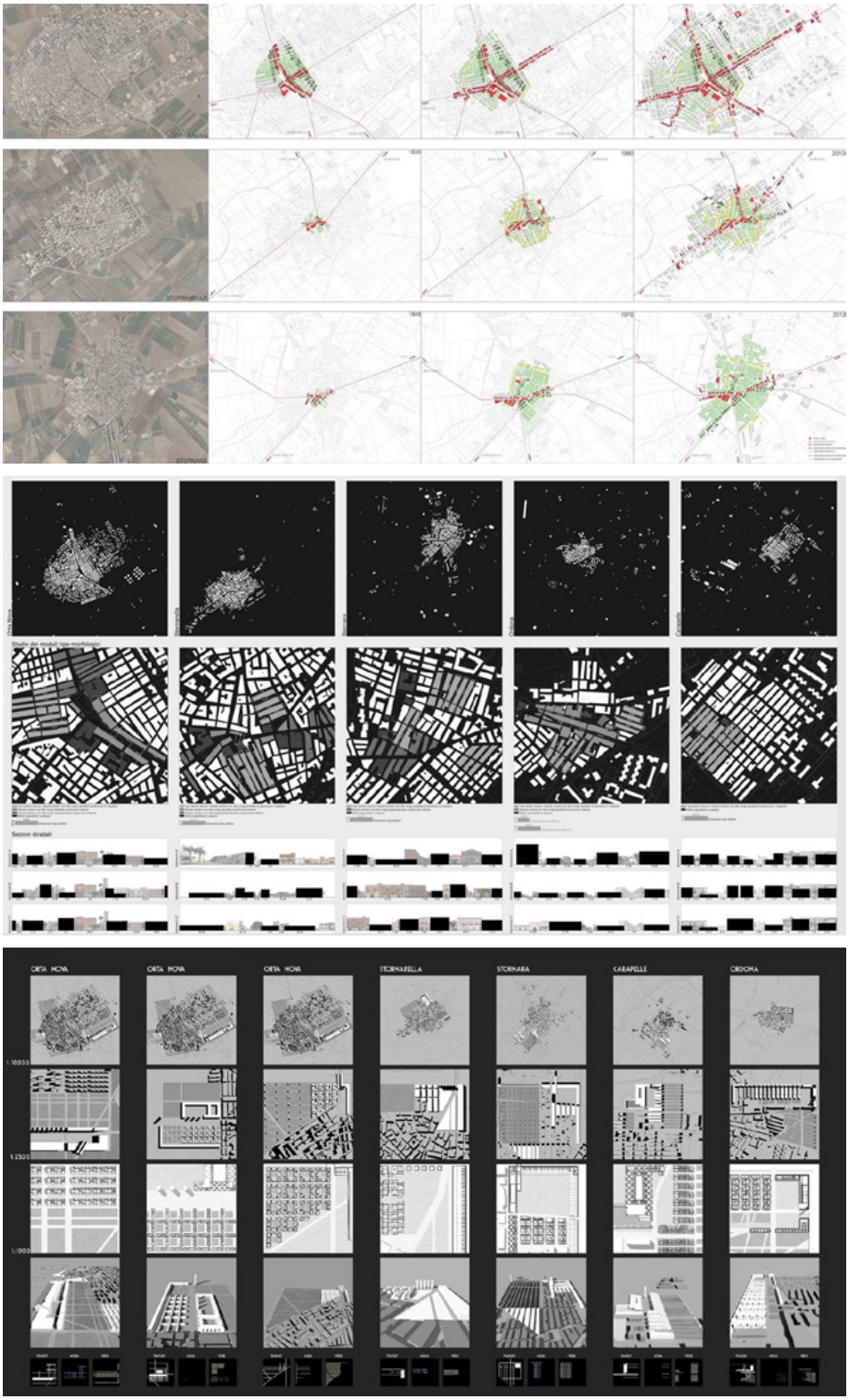
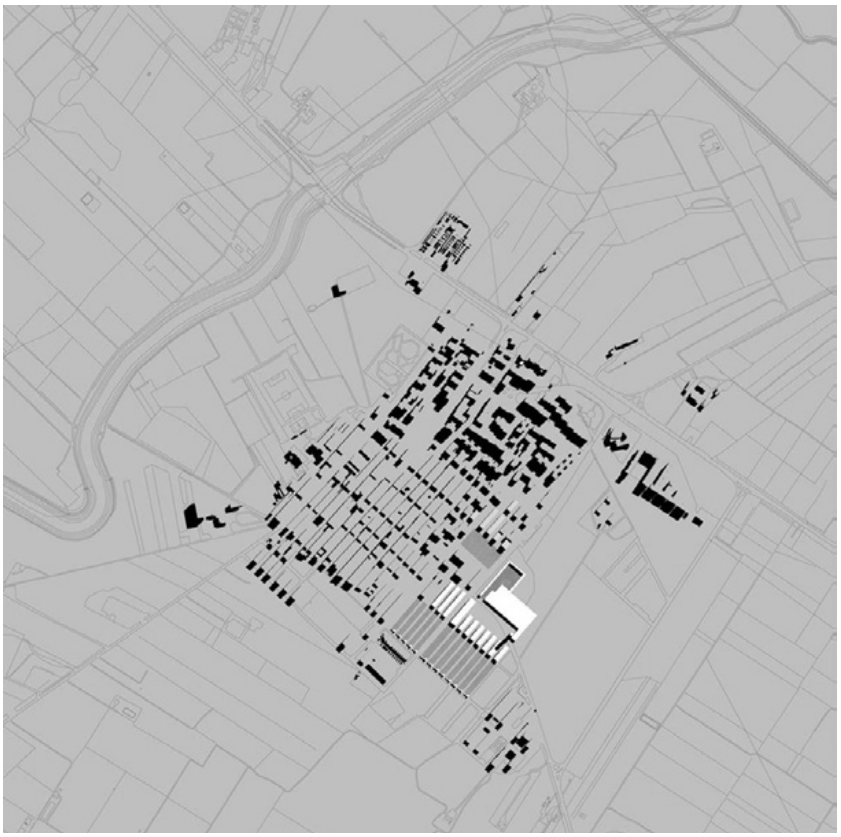


Figure 4. Ordona. *Planovolumetria del progetto di riqualificazione del bordo periferico*; **5.** Stornara. *Planovolumetria del progetto di riqualificazione del bordo periferico*.



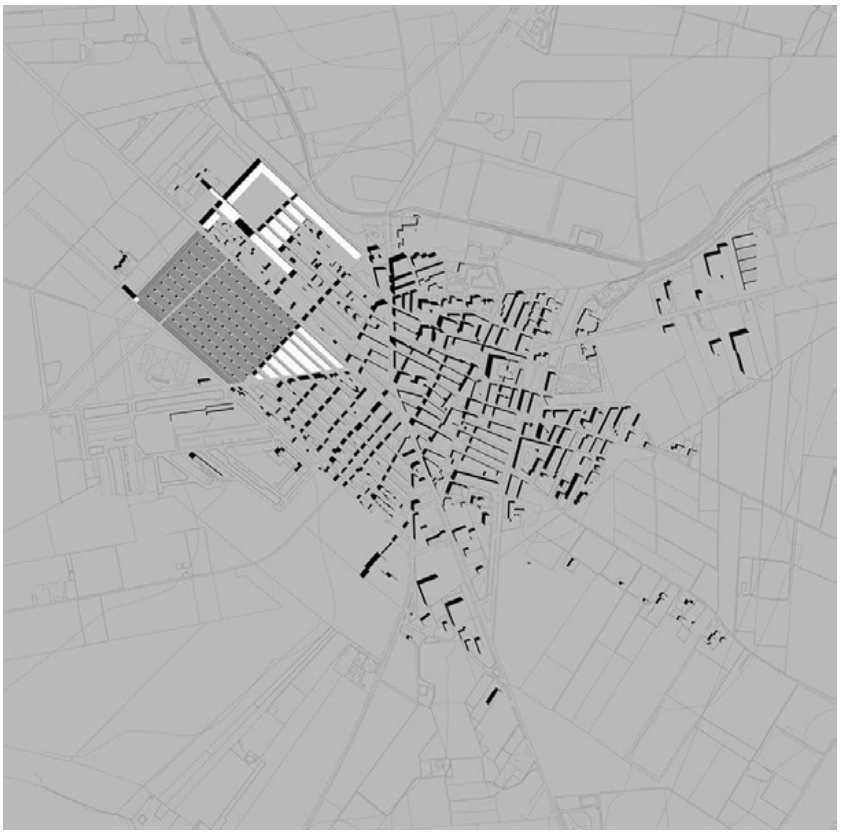


Figure 6. Carapelle. *Planovolumetria del progetto di riqualificazione del bordo periferico*; **7.** *Carapelle. Vista aerea dell'intervento.*

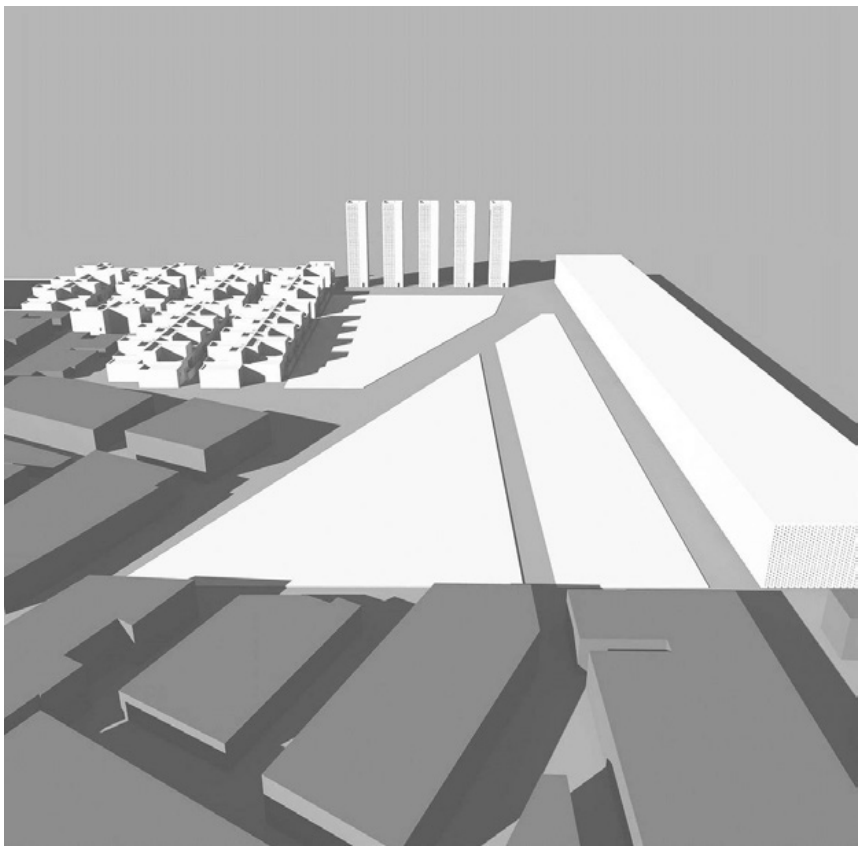


Figure 8. *I progetti di intervento, visti dalla campagna*.

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Note

1. Roland Barthes, *Semiologia e urbanistica,* in "Op. cit. selezione della critica d'arte contemporanea", n. 10, Edizioni Il Centro, Napoli, 1967
2. Gillo Dorfles, *Valori iconologici e semiotici in architettura,* in: "Op. cit. selezione della critica d'arte contemporanea", n. 16, Napoli, Edizioni Il Centro
3. John Summerson, *Il linguaggio classico dell'architettura* , Einaudi, Torino 1973
4. Sigfried Giedion, in Controspazio 1-2, 1970, p. 40

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Progetti di riqualificazione | rigenerazione urbana: occasione per un risanamento di anomalie morfologiche

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I progetti di rinnovo urbano di porzioni di città, di spazi residuali, di aree dismesse, di aree periferiche evidenziano una riflessione non sempre concorde su come trattare queste aree. Molti progetti sembrano rivolti verso l'unico obiettivo di riempire gli spazi liberi, secondo una logica più attenta ai metri cubi da costruire piuttosto che al risanamento di anomalie morfologiche, occasione per valutare e misurare le possibilità della trasformazione di questi luoghi e della città che li ha generati.

Gli interventi in queste aree dovrebbero servire a costituire nuovi parametri di qualità urbana e a mettere a punto strumenti di progettazione di un nuovo assetto della città. Le aree su cui si interviene non sono terreni di conquista, spazi da riempire a ogni costo. Si progetta non solamente realizzando continuità edilizie ma anche producendo fratture, rafforzando parti urbane, costruendo trame urbane, riflettendo sui luoghi urbani temporaneamente non usati, ritrovando quella cultura della forma (Cusmano), che da sempre ha sotteso alla costruzione della città, e la sua capacità di trovare continuità e di mettere a punto tessere nuove.

La constatazione della perdita della forma urbana, l'insoddisfazione per le soluzioni insediative dei nuovi quartieri hanno portato a una nuova attenzione per la qualità della città fisica, a riconoscere l'importanza degli spazi aperti nella definizione della forma, struttura e articolazione dello spazio urbano e della qualità urbana, alla riscoperta degli studi morfologici, alla riconsiderazione dello spazio pubblico e dei tessuti insediativi, alle riflessioni teoriche e alle sperimentazioni per un progetto di suolo (Secchi), al rinnovato interesse per il progetto urbano e per l'Urban Design.

Introduction

I progetti di rinnovo urbano di porzioni di città, di spazi residuali, di aree dismesse, di aree periferiche evidenziano una riflessione non sempre concorde su come *trattare* queste aree. Molti progetti sembrano rivolti verso l'unico obiettivo di riempire gli spazi liberi, secondo una logica più attenta ai metri cubi da costruire piuttosto che al risanamento di anomalie morfologiche, occasione per valutare e misurare le possibilità della trasformazione di questi luoghi e della città che li ha generati. Gli interventi in queste aree dovrebbero servire a costituire nuovi parametri di qualità urbana e a mettere a punto strumenti di progettazione di un nuovo assetto della città. Le aree su cui si interviene non sono terreni di conquista, spazi da riempire a ogni costo. Si progetta non solamente realizzando continuità edilizie ma anche producendo fratture, rafforzando parti urbane, costruendo trame urbane, riflettendo sui luoghi urbani *temporaneamente non usati*, ritrovando quella *cultura della forma*, che da sempre ha sotteso alla costruzione della città, e la sua capacità di trovare continuità e di mettere a punto tessere nuove. La constatazione della perdita della forma urbana, l'insoddisfazione per le soluzioni insediative dei nuovi quartieri hanno portato a una nuova attenzione per la qualità della città fisica, a riconoscere l'importanza degli spazi aperti nella definizione della forma, struttura e articolazione dello spazio urbano e della qualità urbana, alla riscoperta degli studi morfologici, alla riconsiderazione dello spazio pubblico e dei tessuti insediativi, alle riflessioni teoriche e alle sperimentazioni per un *progetto di suolo*, al rinnovato interesse per il progetto urbano e per l'*Urban Design*.

1. La città si è trasformata enormemente, dilatando in misura notevole la dimensione della città antica, le nuove aree urbanizzate occupano spazi più estesi dei propri centri storici, determinando una situazione fortemente eterogenea della forma della città. Alla «città di pietra» si oppone una città costituita da grumi edilizi galleggianti e da spazi residuali che provoca una confusione (fisica e psichica). Quaroni, confrontando la città antica con quella a lui contemporanea, mostrava sì in quest'ultima la perdita delle caratteristiche della città antica (medievale), ma il suo sforzo di sintesi si esauriva nell'affermazione: «com'era bella la mia città», contrapposto a «com'è brutta la mia città» (Quaroni, 1979).

La città ha perso alcune delle proprie caratteristiche precipue: rottura o perdita di relazione con il sistema insediativo storico; mutazione e mescolanze della densità del costruito; carenza di struttura, di forma e di disegno urbano; scarsa qualità dello spazio urbano; scomparsa dello spazio pubblico come spazio della comunicazione e della mediazione.

La città antica rappresentava una totalità complessa che cresceva e si modificava mantenendo sempre una struttura unificante. La crescita fisica della città moderna ne ha ampliato la struttura e le caratteristiche, differenziandole ma non moltiplicandole. Le aree di recente formazione hanno provocato nel tessuto stesso della città specializzazioni e separazioni che prima essa non aveva. L'immagine della città è alquanto erosa: le mutazioni della morfologia della città e della sua natura, appaiono tanto marcate da mettere in discussione il concetto stesso di città e i paradigmi attraverso cui analizzarla, come già tempo fa presagiva Mumford che si chiedeva se «la più preziosa invenzione collettiva della civiltà, seconda solo al linguaggio come veicolo di trasmissione della cultura» (Mumford, 1961: 76) fosse arrivata a un punto critico.

2. La modernità ha interpretato le trasformazioni soprattutto come problema attinente le relazioni tra gruppi sociali: la costruzione della città moderna implicava la costruzione della città nuova e dell'uomo nuovo; l'urbanistica doveva partecipare attivamente alla costituzione di una rappresentatività sociale, doveva costruire una società più giusta, una forma di riscatto sociale: «i modernisti vedono lo spazio come qualcosa che dev'essere modellato per scopi sociali e perciò è sempre subordinato alla costruzione di un progetto sociale» (Harvey, 1990: 88).

La funzione sociale ha finito per portare all'astrazione dalle proprietà fisiche, materiali e formale degli oggetti. Tutto è stato spostato dal piano morfologico a quello sociale ed economico. La scarsità e l'astrazione della descrizione hanno determinato l'approssimazione della rappresentazione della realtà. La modernità si è tradotta in una serialità dello standard e

in un minimo valore di ordine semantico. La costruzione della città moderna è stata regolata nella sua continua crescita, fondamentalmente, secondo un unico criterio quantitativo[1] e una esclusiva attenzione al progetto del *nuovo*, nella realizzazione di questa città. *Completare* e *saturare* hanno voluto dire, il più delle volte, seguire banalmente il massimo sfruttamento senza alcun dialogo con gli impianti e i tessuti precedenti, senza produrre significative distribuzioni planimetriche e spaziali, affidandosi a una prassi che procedeva per interventi puntiformi e non coordinati.

Gli architetti moderni hanno puntato tutto sull'alloggio e poco sulla città, facendola scaturire dall'agglomerazione di case; hanno prestato attenzione alle innovazioni tecniche, costruttive e tipologiche degli edifici piuttosto che al loro rapporto con la superficie e lo spazio pubblico; hanno privilegiato lo spazio privato e tralasciato lo spazio pubblico. La città sembra non aver tenuto il passo con il crescere delle attrezzature della casa, con l'ampliamento del sistema viario, con la realizzazione di edifici strutturalmente e tecnologicamente avanzati. Gli edifici specialistici, privati o pubblici, hanno assorbito al loro interno elementi dello spazio pubblico, privatizzandolo e proponendolo come spazio sicuro rispetto allo spazio pubblico esterno. Lo sforzo di interpretazione e progettazione dello spazio pubblico è stato molto residuale. Gli edifici mostrano solo la loro immagine o quella delle aziende che rappresentano, e non partecipano alla costituzione e all'immagine dello spazio pubblico; l'allargamento delle carreggiate stradali ha allontanato gli edifici e gli isolati sono anch'essi edifici a sé stanti in uno spazio pubblico indifferente. La natura dello spazio della città moderna e soprattutto contemporanea – l'aumento dello spazio aperto e della distanza, i nuovi rapporti di copertura, la privacy, la separazione e l'isolamento – fa apparire la città sempre più come un'appendice del sistema viario, e il sapere edificare sostituito dal sapere tecnico (Rykwert, 1983).

La *cultura della forma*, che da sempre ha guidato la (ha sotteso alla) costruzione della città, anche nei momenti di più traumatici mutamenti, sembra essersi lentamente incrinata, alterata, opacizzata; la sua capacità di trovare continuità e di mettere a punto tessere nuove pare essersi completamente spezzata (Cusmano, 2002).

3. La fine dell'urbanistica classica ha prodotto speranze ma ha anche creato un grande vuoto poiché «le teorie di cui disponiamo analizzano solo la crescita, non la diminuzione [per cui] tutti gli urbanisti piangono sul [loro] declino» (Lynch, 1981: 259).

Ciò che è assolutamente necessario tener ben presente è che «la città, il territorio e lo spazio nel quale vivremo i prossimi decenni è già costruito e non riusciremo molto facilmente a sbarazzarcene, non solo in senso fisico, molto di più da un punto di vista concettuale… la città futura è fatta principalmente dei materiali esistenti cui sia aggiunto qualcosa di addizionale che le reinterpreti, che agendo sulle commessure in qualche modo li reinventi» (Secchi, 1989: 47).

A questo presupposto occorre affiancare una considerazione: «[…] è bene ricordare come la costruzione della città moderna […] si sia espressa, molto spesso, in processi di trasformazione, in parte distruttivi di spazialità più antiche […]; in parte abbia dato luogo a saturazioni assolutamente eccessive, in parte abbia proceduto con modalità di sfruttamento del suolo e di "densificazione" del tutto anomale: dando luogo a plessi urbani particolarmente confusi e disastrati dal punto di vista della loro consistenza e della loro congestione volumetrica e particolarmente scadenti nelle loro qualità spaziali e della vita. Oggi […] è necessario aprire una prospettiva per una cultura e per una pratica del *risarcimento urbano:* nel senso che le operazioni di ricupero delle aree dismesse siano e diventino sempre più le "occasioni" per una reale opera di "compensazione" all'interno della città contemporanea, nei suoi spazi, nelle sue funzioni, nei suoi modi di fruirla e di viverla […] volta ad una effettiva *riqualificazione* della città» (Provincia di Firenze, 2000: 177)

I progetti di riqualificazione | rigenerazione urbana, ovvero tutte le modalità di intervento di rinnovo urbano messe in atto negli ultimi decenni, mostrano quanto sia di corto respiro

1 «In generale, il disegno della 'città ideale' implica il pensiero che nella città si realizza un *valore di qualità* che rimane praticamente immutato col mutare della *quantità*, in quanto si dà per postulato che qualità e quantità sono entità proporzionali e commisurate. La relazione, proporzionale un tempo e di antitesi oggi, tra *quantità* e *qualità* è alla radice di tutta la problematica urbanistica occidentale» (Argan, 1980: 72).

il dibattito sulla città che ne dovrebbe scaturire. Si ha l'impressione che molti progetti, e la discussione sul tipo di interventi da prospettare, siano rivolti verso l'unico obiettivo di riempire qualsiasi spazio. Una logica che si esprime in metri cubi da costruire piuttosto che nel risanamento di anomalie morfologiche, occasione per rimettere in moto il meccanismo dell'edilizia piuttosto che strumento per valutare e misurare le possibilità della trasformazione di parti e tessuti urbani, per costituire nuovi parametri di qualità urbana e mettere a punto strumenti di progettazione di un nuovo assetto della città.

4. La carenza di struttura, di forma e di disegno urbano è soprattutto da individuare nell'assenza di spazi collettivi, di città pubblica intesa come spazio pubblico, di continuità e di rapporto tra lo spazio interno e quello esterno. Infatti, lo spazio pubblico è un paradigma costante nella lettura e nella costruzione della città, componente alla quale viene attribuita l'espressione dell'immagine stessa della città: lo spazio pubblico raffigura lo spazio urbano per eccellenza, è la città, è lo spazio che ha un carattere costruttivo della forma e del senso di una città e ne permette la sua conoscenza.

Lo spazio pubblico della città antica | premoderna era caratterizzato dall'essere: spazio *da città*, *di tutti*, di essere *attraversato*; connotato da una forte *precisione architettonica*, prevalentemente *spazio esterno*, luogo nel quale la gente passa, si incontra o si scontra, ma che non esclude gli interni degli edifici che sono rappresentativi dell'intera comunità, e non solo di parti di essa, quali, a esempio, il palazzo comunale, la cattedrale ecc. (Canestrari, 1986). Quindi, uno spazio fortemente aggregante, luogo dello scambio, dell'incontro, della rappresentazione della comunità di cui faceva esso stesso parte; uno spazio *collettivo* disponibile a diversi usi, rituali, celebrativi e pratici (festa, mercato, processione ecc.); uno spazio costruito insieme allo spazio edificato, con il quale è intimamente interconnesso e mediato; uno spazio percepito e vissuto come esperienza corporale. Ma anche matrice della forma urbana: uno spazio costituito da un insieme gerarchizzato di luoghi sacri e profani, urbani e rurali, pubblici e privati.

Al contrario, lo spazio pubblico contemporaneo tende alla volubilità, «si frantuma e si riforma all'interno di spazi ad hoc socialmente riservati» con una «dilatazione progressiva e ingigantimento dello spazio privato a scapito dello spazio pubblico» (Bettin Lattes, 1997), che determina la perdita di gerarchia e continuità. Lo spazio liberamente accessibile al pubblico tende a dissolversi e a essere sostituito da spazi e luoghi ad accesso controllato e selettivi, così come molti spazi pubblici sono gradualmente ridotti a spazi tecnici (la strada ridotta a canale di traffico). Lo spazio pubblico tende sempre più a essere connotato e confuso solo per la sua natura (proprietà) pubblica, e non per la sua caratteristica di luogo di socialità mentre la *casa con giardino* tende ad assorbire sempre più una parte significativa della vita sociale, introiettando pratiche del tempo libero e dello stare insieme[2]: un soggettivismo che «ha proposto la dispersione senza regole, e persino l'abusivismo, come fondamento di una libertà in quanto pura assenza di impedimento, anziché come progetto, cioè come scelta» (Gregotti, 2004).

La constatazione della perdita della forma urbana e della bellezza della città, l'insoddisfazione per le soluzioni insediative dei nuovi quartieri – la delusione del mondo degli oggetti – hanno portato a una nuova attenzione per la qualità della città fisica, e a riconoscere l'importanza degli spazi aperti nella definizione della forma, struttura e articolazione dello spazio urbano e della qualità urbana.

Gli studi, le riflessioni e le esperienze, pur nella molteplicità e varietà di approcci, si sono spostati progressivamente dagli spazi edificati agli spazi aperti riconosciuti come elementi essenziali per strutturare forma e relazioni e per stabilire rapporti significativi con il contesto. Accanto alle regole per lo spazio costruito riemerge la necessità di interpretare lo spazio urbano nel suo complesso, di individuare un nuovo spazio collettivo e pubblico che reinterpreti anche quello precedente in una nuova continuità. Gli spazi aperti diventano il potenziale

2 «La casa isolata con giardino si è trasformata in un rifugio chiuso a difesa della privacy, luogo della ricomposizione dell'unità domestica, mentre la strada, possibile luogo d'incontro, al contrario, è diventata pericolosa, povera di materiali e quindi considerata sempre più invivibile, spazio straniante, spazio tecnico utilizzato quasi esclusivamente per attraversare il territorio. Così le case, sempre più ritirate dal margine stradale, chiuse fra le recinzioni, alludono soprattutto ad un grande desiderio di intimità e contemporaneamente alla possibilità di trasferire all'interno del lotto alcune importanti pratiche dello stare insieme» (Munarin, Tosi, 2001: 140).

'scheletro' del nuovo spazio urbano, lo strumento urbanistico duttile per riarticolare fra loro le diverse anime della città contemporanea: città compatta, periferia storica consolidata e città diffusa.

Bernardo Secchi riconobbe negli "spazi aperti" una funzione rilevante per la qualità urbana e per la sua strutturazione; spazi che possono svolgere un ruolo centrale per il loro valore d'uso, per la loro funzione ecologica e per la loro disponibilità a trasformarsi in elementi organizzativi e relazionali, attraverso la loro interconnessione, nel progetto urbano, ovvero in un *progetto di suolo*:

> […] al centro di ogni progetto urbanistico, di ogni piano, a qualsiasi scala, deve essere posto un "progetto di suolo"; è questo ciò che il piano urbanistico in prima istanza disegna […]; un "progetto di suolo" definisce in modi concreti e precisi, eventualmente classifica tipologicamente, i caratteri tecnici, funzionali e formali dello spazio aperto; ne definisce la variabilità, ne interpreta le relazioni con le attività e le funzioni che vi si svolgono o che possono svolgersi entro lo spazio edificato che vi si affaccia, integra i differenti spazi aperti e questi a quelli coperti: strade, piazze, giardini, orti, parchi, sagrati, slarghi, parcheggi, ma anche corti, androni, logge ecc.; li ordina in sequenze e percorsi, secondo sistemi di associazioni ed opposizioni significanti; definisce gli elementi che ne governano l'articolazione, organizza la mediazione tra l'uno e l'altro (Secchi, 1986: 13).

Lo spazio aperto può assumere, così, una funzione fondativa anche dello spazio collettivo, sostituendo in qualche modo il concetto di struttura, prendendone il posto, allargandone il significato da relazioni funzionali e gerarchiche a trama complessa e articolata che associa funzioni, ecologia, disegno del suolo, integrazione di spazi diversi. Lo spazio aperto diventa lo strumento e il paradigma per il progetto della "città incompiuta", per identificare e strutturare luoghi e parti urbane, per dare – o ritrovare – significati alla costruzione dello spazio pubblico; uno spazio pubblico inteso, e costruito, non attraverso una lista di funzioni ma come luogo dello stare, della natura, della storia e dell'arte, del camminare, del panorama, dei riti, del consumo e del tempo libero, caratteri sui quali si concentra l'interesse e l'apprezzamento dei cittadini (Colarossi, 1999).

5. Probabilmente «per lungo tempo non ci sarà un'idea di città, un'immagine conclusa di città» (Macchi Cassia, 1991: 31), ma proprio per questo è necessario tornare a riconoscere la *dimensione visibile* nello *spazio urbano*, a ritrovare gli *elementi* dello *spazio urbano*, dello spazio formato dalla disposizione, gli uni rispetto agli altri, di edifici o di altri oggetti urbani (dalle alberature ai muri di recinzione o di sostegno, dai porticati alle fontane o ai chioschi ecc.), ossia dello spazio non edificato della città, tanto di quello compreso tra due o più edifici o oggetti urbani che di quello che avvolge ogni singolo edificio o oggetto.

Gli interventi di trasformazione urbana – sotto diverse denominazioni e sigle –, che sempre più, per quantità e importanza, costituiscono l'attività principale delle azioni e delle politiche urbanistiche, pur agendo tutti nella dimensione del progetto urbano, non sempre esprimono | indicano | dichiarano esplicitamente quale modello spaziale vogliono perseguire, non hanno contenuti qualitativi specificatamente spaziali, non evidenziano a sufficienza le caratteristiche dello spazio urbano che vanno a trasformare, e quasi mai comunicano una *visione* della città che vanno a costruire. In altri termini, la configurazione spaziale è spesso considerata un output – piuttosto che un obiettivo e un requisito – del processo di trasformazione urbana. La verifica della qualità dei procedimenti (gli strumenti giuridico-amministrativi) e quella della qualità del processo (valutare, controllare e gestire i meccanismi della fattibilità) mettono, nelle esperienze italiane, in secondo piano la verifica (e la produzione di strumenti per il controllo) della qualità delle soluzioni fisico-spaziali (Mascarucci, 2005).

Negli ultimi anni, la predisposizione di progetti norma, di masterplan, di indirizzi e linee guida è sicuramente aumentata; ma essa ha ancora un carattere casuale e occasionale, spesso legata a specifici contesti e con pochi contenuti più propriamente di controllo spaziale e di definizione di regole spaziali, che hanno, a esempio, analoghi e ben più specifici

e diversificati prodotti anglosassoni.

Nel Regno Unito a seguito della pubblicazione del *Final Report Towards a new Renaissance* della commissione Rogers – formata nel 1998 allo scopo di individuare le cause del declino urbano e di indicare il modo per avere città sicure, vitali e belle – si sviluppò un ampio dibattito sui temi della qualità della progettazione che impegnò sia istituzioni statali e governative sia alcuni gruppi professionali in una comune riflessione sul disegno della città fisica e sulla necessità di un rinnovare gli strumenti specificamente rivolti a indirizzare i processi di riqualificazione e costruzione dello spazio urbano. Il Report postulava un preciso modello di spazio urbano da perseguire – la città compatta – quale condizione indispensabile per progettare quartieri urbani vitali, sicuri e belli da vivere. Nel *Final Report* si afferma: «We need a vision that will drive the urban renaissance. We believe that cities should be well designed, be more compact and connected, and support a range of diverse uses – allowing people to live, work and enjoy themselves at dose quarters – with a sustainable urban environment which is well integrated with public transport and adoptable to change» (Urban Task Force, 1999). Da allora le istruzioni prestazionali delle *guidelines* sono diventate sempre più indicazioni formali, abachi di soluzioni spaziali e dei caratteri di tutti i materiali urbani. Ne seguì una vasta produzione di strumenti di pianificazione e di indirizzo per promuovere un maggior livello di progettazione urbana e per supportare un percorso per una buona progettazione urbana che ha interessato tutti i livelli coinvolti. Ministeri, Contee, Municipalità elaborarono linee guide e strumenti di controllo della progettazione ai propri livelli e ai vari livelli della scala urbana.

6. L'attualità del progetto urbano deve far riscoprire al progetto la capacità di dare (ri-dare) forma a parti urbane (Macchi Cassia, 1991; Bohigas, 2002); deve far recuperare al progetto urbano anche la dimensione dell'*Urban Design* ovvero di *progettare la città senza progettare gli edifici* espresso da J. Barnett (1982). L'*Urban Design* si pone, quindi, tra ciò che, semplificando e artificiosamente separando, definiamo come Architettura e Urbanistica, che è proprio la dimensione del *Disegno Urbano* di essere progetto tra Architettura e Urbanistica, di definire regole che precedono quelle dell'architettura in senso stretto (Piroddi, 2009). In sostanza la dimensione adatta per affrontare il tema della – e progettare la – qualità urbana, per superare la rottura metodologica nella progettazione della città degli anni 30, fra architettura degli edifici e urbanistica (Solá-Morales, 1999).

La forma della città europea deve molto al disegno urbano. Molte importanti e riconosciute parti di città europee sono frutto di una grande attenzione al disegno urbano. E non solo riguardo alla città dall'Umanesimo fino all'800, ma a gran parte della città del primo 900[3].

In Italia, il *disegno urbano* è una tradizione disciplinare che continuamente ricompare e poi viene emarginata nella disciplina urbanistica. La cultura del *progetto | disegno urbano* ha radici profonde nella nostra tradizione disciplinare e nella nostra formazione di architetti[4]. Ed è il segno più evidente del fatto che la separazione tra Architettura e Urbanistica è un fatto recente, alquanto artificioso e portatore di debolezza disciplinare[5]. L'*Urban Design* e il *Disegno Urbano* sono diventati residuali nel dibattito italiano, una categoria e un approccio progettuale poco praticate dall'Architettura e marginale nell'Urbanistica.

L'*Urban Design* può sostenere un processo di rinnovamento disciplinare e di comprensione dei fatti urbani e di strumento per costruire una città migliore. Dalle pratiche e dalle esperienze di rinnovamento urbano, la cultura e la pratica urbanistica potrebbero avviare il proprio rinnovamento disciplinare, ritornando a prendersi cura anche del controllo e della progettazione dei materiali urbani. (Lynch, 1981; Manadipour, 1996; Carmona, Heath, Oc, Tiesdell 2003; Colarossi, Latini, 2007;).

L'urbanistica deve ritornare a prendersi cura di questa dimensione, a porre al centro della sua riflessione anche il controllo e la progettazione dei materiali urbani, la progettazione urbana di dettaglio (Rignanese, 2009). Abbiamo bisogno che l'urbanistica torni al centro

3 Di particolare interesse è tutta l'esperienza olandese che, a cominciare dall'Amsterdam di Berlage, è durata per tutto il XX secolo e continua ancora adesso senza alcuna interruzione. (Ibelings, 1999).

5 «[…] a partire dalla fine degli anni 70 […] la questione del disegno urbano viene radicalmente contestata nei principi e nei fatti» (Gregotti, 2013: 188).

degli interessi del cittadino: non più un'urbanistica per addetti, ma un'urbanistica capace di riconquistare un ruolo nella vita di tutti i giorni. Un'urbanistica che si occupi direttamente e chiaramente della forma della città e della qualità delle opere da realizzare.

Il rinnovamento urbano necessita di un fondamento metodologico che può avviarsi a partire da una ricostruzione delle regole dello spazio urbano e dal riconoscere la necessità di un ritorno a «una normalità edilizia, vero materiale che, insieme alla mescolanza sociale e funzionale, è il principale elemento di formazione del tessuto urbano […] materiale che è stato costitutivo della città europea fino al XIX secolo, guidato dagli spazi aperti delle piazze, degli allineamenti stradali, dai porticati, dalla mescolanza di funzioni produttive, commerciali, abitative, e punteggiata dagli episodi dei grandi monumenti, sorretti da un consenso pubblico sul modo di concepire le regole di ciascun elemento, […] il risultato, nei secoli passati, di una forma di cultura quasi come modo di essere di un inconscio collettivo considerato come stato naturale anche nel suo divenire» (Gregotti, 2013: 197).

Le pratiche e la riflessione sull'*Urban Design* contribuiscono fortemente a ritrovare regole dello spazio urbano più stabili, a recuperare la nozione, il concetto e i luoghi dello spazio pubblico, a comprendere il senso dell'abitare, termine troppo spesso appiattito su quello di residenza e non su quello di vivere un luogo e vivere in un luogo. Resta il fatto che bisogna operare dentro tessuti più o meno densi, e quindi ritrovare anche il senso dell'urbanistica nella città, la consapevolezza dell'urbanistica *come arte di costruire la città* (Sitte, 1889), molto spesso scambiato con l'obiettivo di abbellire la città, o dell'*arte di ricostruire la* città; apprendere a vedere l'architettura come *arte di completare le città* sostenendo la «composizione minore, il sapere sottile fatto dalle figure dell'aggiunta, delle trasformazioni, delle sostituzioni, delle inversioni. Un bricolage urbano nel quale la geometria ritroverà finalmente il posto che non avrebbe dovuto mai perdere: quello di un sapere indispensabile per l'articolazione delle contraddizioni e non più l'ordine sovrano agghindato con un'indipendenza formale» (Grumbach, 1984: 94).

Da sempre la città ha riutilizzato l'esistente, da sempre ha innescato pratiche di riuso e di riappropriazione degli spazi, attivando processi di risignificazione, da sempre è ricorsa al *bricolage* per costruire relazioni feconde, generare sinapsi fertili, produrre nuove economie e accelerare le innovazioni (Carta, 2015).

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Protezione, conservazione e valorizzazione del patrimonio costruito e della città storica. Il caso di Locorotondo (BA)

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Il centro antico di Locorotondo è un insediamento della Valle d'Itria dal forte carattere identitario, per la particolarità del luogo, l'unicità del rapporto con il paesaggio agrario in lieve pendio ridisegnato dai terrazzamenti delimitati da muretti a secco, la singolarità dell'assetto urbano, dei tipi edilizi, dei materiali impiegati, delle tecniche costruttive tradizionali adottate. L'immagine del centro antico sedimentata nella memoria collettiva è affidata alla coralità dell'edilizia minuta rappresentata da case a pseudo-schiera a più piani.

Queste, realizzate con lo stesso materiale del luogo impiegato nella costruzione dei muretti a secco, assumono una particolare connotazione per il trattamento superficiale con scialbo a base di latte di calce, e soprattutto per le cummerse, coperture a due falde con manto in chiancarelle posate in opera secondo corsi orizzontali sfalsati in arretramento seguendo il piano inclinato della falda. Mignani, sporti di gronda, apparati decorativi a corredo delle aperture, gli infissi tradizionali, ringhiere, ferrate, sono altrettanti elementi che concorrono a caratterizzare l'aspetto di Locorotondo che, per la sua singolarità, impone misure di salvaguardia.

È un insediamento solo apparentemente ben conservato, in realtà a rischio di progressivo degrado, soprattutto antropico, per l'inadeguatezza dell'edilizia di base a rispondere ai moderni standard abitativi e soggetto a interventi e riusi spesso impropri che rischiano di compromettere l'elevata qualità architettonica e ambientale dell'organismo urbano. Si pongono dunque delicati problemi di tutela e utilizzo che impongono una riflessione sulla necessità di un mirato recupero finalizzato ad una corretta fruizione attenta a preservare quei caratteri che fanno di Locorotondo un unicum irripetibile.

Introduzione

Si propone qui una riflessione sull'interrogativo circa la reale possibilità del recupero di piccoli centri storici cogliendo lo spunto offerto dal caso studio di Locorotondo in provincia di Bari.

La ricerca, finalizzata alla stesura di linee-guida per il recupero del centro antico, è stata avviata nell'ambito di un'esperienza didattica che ha permesso un rapporto sinergico fra diverse discipline con il coinvolgimento della Storia dell'Architettura, del Rilievo, dell'Analisi delle tipologie edilizie e della morfologia urbana, della Sociologia urbana e del territorio, dell'Urbanistica, del Restauro, della Progettazione.

L'itinerario conoscitivo intrapreso muove dalla consapevolezza che un centro storico, o meglio un "centro antico", secondo la definizione che ne ha dato Roberto Pane, rientra nel più ampio concetto di patrimonio storico e che il suo recupero non può prescindere da una visione strategica del proprio ruolo all'interno della città contemporanea e del più esteso sistema territoriale. Se è vero che non si può non riconoscere il carattere di unicità ad un centro antico, che è il nucleo originario, il luogo della stratificazione storica dai molteplici valori, materiali e immateriali, lo spazio pubblico per eccellenza, un punto di riferimento imprescindibile per l'elevata qualità architettonica e urbana, è incontestabile che si debbono recuperare le relazioni culturali, ma anche sociali ed economiche con l'intero organismo urbano e la struttura territoriale di gravitazione di cui la città storica è innegabilmente parte integrante.

D'altra parte il superamento della nozione di centro storico - con l'inclusione della struttura storica della città, del suo territorio e del paesaggio all'interno di un insieme interconnesso di sistemi territoriali di valore storico-culturale - è noto fin dalla sottoscrizione della "Carta di Gubbio '90" promossa dall'ANCSA, esito di un ripensamento e di un'attualizzazione del primo documento pubblicato nel 1960 e prima ancora dalla ratifica della Carta internazionale per la salvaguardia delle città storiche siglata a Washington nel 1987. S'inseriscono nel medesimo solco la Carta Europea del Paesaggio approvata nel 2000 e le Raccomandazioni Unesco su *Historic urban landscape* adottate nel 2011, che contribuiscono a promuovere un processo di sensibilizzazione ed una progressiva attenzione nei confronti del territorio storico, confermando la necessità di un quadro strategico più ampio che includa il centro antico all'interno della città contemporanea e del sistema territoriale.

La formulazione di linee di indirizzo, che implicano la messa a punto di regole orientate a salvaguardare e valorizzare il patrimonio costruito del centro antico, dovrà tener conto anche della necessità di istituire relazioni reciproche visibili fra questo e le più recenti espansioni residenziali, non trascurando i rapporti con l'organismo territoriale, fornendo indicazioni per la progettazione degli spazi aperti e la riqualificazione dello spazio pubblico, con una particolare attenzione ai margini, qui intesi come luoghi di bordo, di separazione fra la città antica e l'esterno, luoghi dimenticati da qualsiasi pensiero progettuale, ma luoghi potenziali per generare nuovi rapporti fra parti urbane separate, dove sperimentare integrazioni e nuove spazialità.

In relazione a quanto esposto, l'enunciazione dei criteri finalizzati alla conservazione e alla valorizzazione del centro antico, dovrà tenere conto di più approcci scalari che coinvolgono: la lettura architettonica attraverso l'approfondimento degli aspetti strutturali, costruttivi, formali; quella urbana che permette di indagare e valutare il rapporto con l'organismo urbano nel suo complesso ed in particolare con i suoi spazi aperti, lo spazio pubblico, i luoghi della mobilità e le attrezzature d'interesse collettivo; quella territoriale che prende atto dei legami intercorrenti con un contesto di più ampia estensione di cui il centro antico è parte costitutiva.

È indubbio che la conservazione e la valorizzazione di un organismo, sia esso architettonico, urbano, paesaggistico, dipendono fortemente dal grado di conoscenza raggiunto. Questo è tanto più alto quanto più è corretta la lettura dei caratteri distintivi del patrimonio storico insediativo oggetto di studio e attendibile la formulazione delle ipotesi del processo di formazione e trasformazione allo scopo di mettere in relazione permanenze e mutazioni che in un arco plurisecolare hanno variato il dato originario modificandolo continuamente fino a dar vita ad un vero e proprio palinsesto.

Documentare e descrivere il processo evolutivo di un centro antico, senza disgiungerlo dal più ampio contesto urbano e territoriale, in quanto la tutela e la valorizzazione

riguardano la città storica e il patrimonio insediativo diffuso, significa creare le premesse per la salvaguardia di un bene d'interesse collettivo a cui si riconosce il valore di patrimonio storico. Con ciò si risponde all'intima esigenza di conservare la testimonianza della memoria storica, individuale e collettiva, proprio per un meccanismo psicologico d'immedesimazione dell'antichità stratificata che è in ciascun individuo con quella del centro antico da cui la comunità trae la propria identità attribuendogli il valore di eredità storica e culturale. Allora, il nucleo primigenio diventa il luogo di elezione dove mettere a punto regole per interventi di manutenzione, restauro, recupero dei manufatti edilizi, ma anche criteri per la progettazione e la riqualificazione dello spazio pubblico, con possibilità di una loro applicazione anche alla città di più recente espansione e al patrimonio insediativo diffuso, confermando con ciò il ruolo strategico del centro antico alla scala urbana e territoriale.

Analisi dello stato di conservazione e proiezioni operative

Locorotondo è un insediamento della Valle d'Itria dal forte carattere identitario per l'unicità del rapporto con il paesaggio agrario segnato dai terrazzamenti delimitati da muretti in bozze calcaree montate a secco, la singolarità dell'organismo urbano, il persistere dei tipi edilizi con copertura a *cummersa*, il ricorso agli stessi materiali impiegati nell'edilizia rurale, il perdurare delle tecniche costruttive tradizionali.

L'esistenza del piccolo centro, il cui toponimo richiama la forma urbana tondeggiante assunta dal nucleo abitato più antico, è documentata fin dal XII secolo quando, a proposito di un possedimento del monastero benedettino di Santo Stefano a Monopoli, viene citato un «*locum qui dicitur Rotundus cum omnibus olivis, vineis, aquariis et pertinentiis suis et in eo ecclesiam Santi Georgii*».

La sua identità è affidata alla coralità dell'edilizia minuta rappresentata da case a pseudo-schiera a più piani con copertura a *cummersa* dislocate entro l'anello perimetrale dell'antica cinta urbana, nota localmente con l'espressione *U 'Curdunne*, ora non più visibile perché assorbita dall'edilizia residenziale che nel tempo ha saturato il cosiddetto *intervallum*. Le unità abitative, realizzate con la stessa pietra calcarea impiegata nella costruzione dei muretti a secco, assumono una particolare connotazione per il trattamento delle superfici con scialbo a base di calce, e soprattutto per le *cummerse*, cioè coperture a due falde su volte a botte a sesto parabolico, con manto in *chiancarelle* posate in opera secondo corsi orizzontali sfalsati in arretramento, seguendo il piano inclinato della falda. La pendenza dei tetti con un angolo compreso tra 48° e 55° permette il rapido deflusso dell'acqua piovana raccolta in canali di gronda realizzati con pietre *converse*, cioè concave, - da cui il termine *cummerse* - e convogliata per mezzo di discendenti inseriti nello spessore murario in cisterne sotterranee ora quasi tutte interrate.

È un insediamento solo apparentemente ben conservato, in realtà a rischio di progressivo degrado, sia per l'inadeguatezza dell'edilizia di base a rispondere ai moderni standard abitativi, sia perché soggetto a interventi e riusi spesso impropri che rischiano di compromettere l'elevata qualità architettonica e ambientale dell'organismo urbano. Di fatto, il centro antico di Locorotondo sta subendo un processo di progressivo isolamento dal resto della città e rischia di seguire l'inesorabile destino dei piccoli centri in abbandono. Gli innumerevoli segni dell'incuria e del degrado sono riconducibili al fenomeno dello spopolamento e dell'invecchiamento degli abitanti con la trasformazione del centro antico in luogo di residenza stagionale fruito da utenti diseducati alla cura del patrimonio storico insediativo e al senso del bene di interesse collettivo. Malgrado gli interventi edilizi siano conformi alle norme urbanistiche a garanzia del mantenimento di altezze, volumi, superfici utili, l'impiego disinvolto di materiali impropri e tecniche costruttive inadeguate determina la compromissione dei caratteri identitari del centro antico. La graduale sostituzione degli intonaci a base di calce con rivestimenti cementizi, degli infissi in legno con elementi in anticorodal, delle volte con solai in latero-cemento, dei manti di copertura in *chiancarelle* con rivestimenti incongrui e incompatibili ha innescato delle vere e proprie mutazioni del patrimonio costruito tradizionale di cui viene sminuito il valore storico-culturale. Questo accade in quanto nella maggior parte dei casi la progettazione degli interventi nei centri antichi è commissionata a professionisti impreparati in termini di conoscenza della cultura costruttiva locale e i lavori, affidati a maestranze inesperte che ignorano l'arte del costruire tradizionale, sono soggetti a semplice autorizzazione senza che sia prevista alcuna verifica.

Allora, l'evidente carenza del quadro normativo rispetto ad un'appropriata tutela del centro antico impone la redazione di un piano attraverso la stesura di linee di indirizzo confluenti in un codice di pratica da utilizzare come riferimento per governare le azioni finalizzate ad una conservazione attiva.

Con ciò si pongono delicati problemi di tutela, ma anche di utilizzo, che richiedono una riflessione sulla necessità di un mirato recupero, finalizzato ad una corretta fruizione attenta a preservare quei caratteri che fanno di Locorotondo un *unicum* irripetibile.

Le linee guida proiettate alla redazione di un piano di recupero che punti ad una valorizzazione delle qualità intrinseche e formali del nucleo antico suggeriscono interventi secondo la regola dell'arte nel rispetto di materiali e tecniche tradizionali per evitare che la sommatoria di operazioni anche modeste, intraprese senza regole, determini alterazioni arbitrarie del patrimonio storico insediativo.

Obiettivi

L'intenzione di formulare linee-guida per il recupero del centro antico mira a creare le premesse per un'appropriata conservazione, valorizzazione, fruizione, ma anche promozione del patrimonio architettonico tradizionale che viene concepito come risorsa per perseguire obiettivi di sviluppo territoriale.

Per raggiungere tale finalità si prevedono interventi di manutenzione, restauro e risanamento conservativo, riconoscendo come condizione di base l'indispensabilità di un'approfondita conoscenza del luogo e della cultura costruttiva che rappresenta il momento preliminare ad ogni azione conservativa.

Lo studio condotto senza mai perdere una visione d'insieme dell'organismo urbano, focalizza l'attenzione sugli aspetti tipologici, formali e costruttivi dei manufatti, non trascurando la problematica del riuso di edifici abbandonati o sottoposti a cambi incongrui di destinazione funzionale, nella consapevolezza che per innescare un processo virtuoso di conservazione, valorizzazione e consapevole fruizione del patrimonio storico insediativo sarà necessaria una politica di incentivi economici o detrazioni fiscali soprattutto a vantaggio delle fasce di popolazione economicamente più deboli.

L'ipotesi di recupero del centro antico se da un lato intende disciplinare gli interventi sugli edifici che compongono i singoli isolati, dall'altro prospetta un miglioramento del sistema degli spazi collettivi (vichi, slarghi, piazze) che potranno essere messi in relazione reciproca ricorrendo ad interventi strategici di arredo urbano e di ri-funzionalizzazione. Rientra in questa strategia la proposta di inediti percorsi di fruizione pubblica intesi come diramazioni di un itinerario di visita pedonale che contempla, in alcuni punti nodali del nucleo antico (in particolare laddove si individuano unità edilizie destinate alla fruizione pubblica), la risalita fino alla quota delle *cummerse*, dove poter apprezzare lo straordinario panorama dei tetti a *chiancarelle*. Si offre così alla collettività l'occasione di un osservatorio privilegiato che può diventare una delle principali attrattive di Locorotondo, ma anche luogo di controllo dell'attività edilizia sulle coperture che funzioni da deterrente nei confronti di interventi incongrui i quali potrebbero compromettere irreversibilmente i tratti distintivi delle *cummerse*, ora a rischio di conservazione.

La stesura delle linee guida, infine, è stata l'occasione per formulare indirizzi di metodo al fine di potenziare le aree di margine, cioè quelle aree residuali architettonicamente e urbanisticamente irrisolte comprese fra il centro antico e le immediate espansioni della città moderna, luoghi fortemente discontinui e frammentari ma con grandi potenzialità dal punto di vista progettuale.

Approccio metodologico

In fase preliminare è stata effettuata una lettura del tessuto edilizio, attraverso l'assemblaggio dei 'catastini', utile a cogliere il rapporto intercorrente fra percorso e unità abitative nel tentativo di ricostruire con l'ausilio di un'analisi storica e di un'indagine diretta, il processo di formazione e trasformazione dell'organismo urbano.

Da questo punto di vista il rilievo dell'architettura ha assunto un ruolo fondamentale ai fini della comprensione dei manufatti nei loro reciproci rapporti, consentendo di evidenziare con immediatezza l'articolazione spaziale, il rapporto con i percorsi, gli slarghi e le piazze,

oltre alle caratteristiche e particolarità costruttive, facendo leggere degli edifici le linee essenziali, i materiali, le apparecchiature murarie, il loro stato di conservazione.

Sono stati rilevati e restituiti graficamente, da un lato, i prospetti di ciascuno dei ventuno isolati che compongono il centro antico secondo una sequenza a sviluppo lineare continuo, dall'altro, le coperture e le pavimentazioni di percorsi, vichi, slarghi, piazze, cioè tutte quei componenti che partecipano alla definizione degli spazi di fruizione collettiva. Quindi, sono stati censiti i morfo-tipi e gli elementi architettonici che caratterizzano ciascuna unità edilizia, con particolare riguardo a *cummerse*, *mignani* (termine locale per indicare i profferli), logge, aperture, balconi, ringhiere, ferrate, infissi, pavimentazioni, riconducendo ogni elemento a precise categorie tipologiche. Per ogni categoria di cui si sono riconosciuti i tipi-base e le varianti è stata eseguita una schedatura, selezionando esempi significativi, scelti in quanto rappresentativi dei tratti caratteristici dell'edilizia tradizionale.

In ciascuna scheda ripartita in due sezioni, l'una descrittiva e l'altra propositiva, sono state riportate da un lato le informazioni sulla localizzazione, la geometria, i materiali, i caratteri costruttivi del componente architettonico indagato, lo stato di conservazione, le patologie riscontrate identificando eventuali azioni antropiche che possono aver compromesso la statica e/o l'estetica dell'edificio, dall'altro le indicazioni generali sulle operazioni ammissibili (rimozioni, integrazioni, sostituzioni), che sono state fatte confluire all'interno delle categorie d'intervento contemplate dalla normativa vigente (manutenzione ordinaria, straordinaria, restauro e risanamento conservativo), poi identificate con sigle alfa-numeriche e riportate sui prospetti di ciascun isolato.

Progetto pilota per il restauro degli isolati. L'isolato n. 3

In applicazione delle linee-guida, con il fine di testarne la validità, è stato selezionato l'isolato urbano contraddistinto con il n. 3, rappresentativo dal punto di vista della destinazione per la coesistenza di unità edilizie d'uso pubblico con unità abitative di proprietà privata, significativo dal punto di vista delle categorie tipologiche e delle patologie rilevate, ma anche strategico per la sua posizione di bordo rispetto al nucleo antico e dunque particolarmente indicato per riflettere sulle problematiche poste dalle aree di margine.

L'idea sottesa all'intervento previsto è quella di un progetto di restauro unitario e coerente, non competitivo né imitativo, rispettoso degli assetti tipologici, dei materiali, delle tecniche tradizionali, degli aspetti strutturali, delle vicende costruttive, degli aspetti figurativi, delle vocazioni funzionali delle unità edilizie sottoutilizzate o dismesse.

Posto all'estremità orientale del percorso matrice in prossimità della Porta Nuova, l'isolato è contiguo all'area esterna all'anello perimetrale del centro antico denominata Piazza Antonio Mitrano, luogo del mercato settimanale, ma anche area destinata a parcheggio. Si tratta di uno spazio complesso che ha tutte le potenzialità per essere trasformato in un luogo urbano di pregio, anche perché si colloca in un punto privilegiato di accesso alla città storica, nonostante sia in posizione diametralmente opposta a Porta Napoli, considerata l'ingresso principale al centro antico. La progettazione in quell'area di un spazio di qualità costituisce un punto di forza per l'isolato pilota, gli isolati limitrofi e l'area di margine citata, in quanto le operazioni previste puntano a restituire il giusto ruolo alla Porta urbana e al tempo stesso favorire la formazione di luoghi per la socialità.

Da questo punto di vista un'analisi sociologica ha evidenziato la necessità di spazi aggregativi per i giovani, tali da costituire una sicura attrattiva per il recupero del centro antico di Locorotondo. La solida tradizione musicale che caratterizza la valle d'Itria, dimostrata dalla presenza di conservatori, accademie, associazioni dedicate, fra l'altro confermata da *kermesse* di levatura internazionale come il "Festival della Valle d'Itria" a Martina Franca e il "Locus Festival" a Locorotondo, rappresenta un forte elemento di richiamo a scala territoriale. La mancanza di spazi adeguati, a fronte degli interessi e delle aspettative della comunità locale che mostra una particolare propensione per la cultura musicale, suggerisce il proposito di istituire a Locorotondo una scuola di alta formazione musicale, la cui sede secondo le proiezioni operative potrà essere accolta all'interno dell'isolato campione negli ambienti di uso collettivo. L'attività di formazione ben si coniuga con l'intrattenimento musicale che troverà nelle manifestazioni del "Locus Festival" un punto di convergenza. Si muove in questa direzione l'intento di riqualificare Piazza Antonio Mitrano la quale, per conformazione e posizione strategica rispetto al centro abitato, si configurerà come luogo

'evenenziale' e dunque anche d'intrattenimento musicale, con un conseguente deciso miglioramento della qualità della vita urbana.

Chiarite le ragioni della scelta, nello studio dell'isolato preso in esame trova conferma la validità dell'impostazione metodologica basata sulla successione 'conoscenza – interpretazione – progetto'. Infatti, la conoscenza basata sulla ricerca documentaria utile alla ricostruzione della storia dell'isolato ed essenziale per una lettura critica dei caratteri architettonici, tipologici e costruttivi si è confermata come momento propedeutico alla elaborazione del progetto di restauro. L'indagine, che ha coinvolto lo studio delle vicende storiche di Locorotondo, si è rivelata indispensabile anche in fase progettuale, in quanto strumento interpretativo e linea di indirizzo per la formulazione della proposta di intervento. Lo studio diretto condotto attraverso il rilievo, che ha consentito per le parti visibili una lettura stratigrafica degli elevati, è stato utile per ipotizzare le fasi di edificazione. L'analisi delle tessiture murarie, l'osservazione degli allineamenti e delle disomogeneità costruttive hanno permesso di ricostruire con un buon grado di attendibilità una storia costruttiva fatta di aggiunte, inglobamenti, rimaneggiamenti, sopraelevazioni.

Fonte iconografica principale di riferimento rimane il disegno redatto da Giovanni Rapicano nel 1579 che raffigura sul lato orientale del nucleo antico una torre accanto ad una porta urbana e unità abitative in sequenza con affaccio sul percorso principale. Osservando l'attuale assetto viario sono stati riconosciuti gli originari percorsi matrice (via Porta Nuova) e d'impianto (via La Passata) su cui si attesta il nucleo originario costituto da unità edilizie con regolarità di pianta e linearità sul percorso. Il susseguirsi di attività edilizie, con la saturazione del percorso principale ed il suo spostamento a Sud attraverso la traslazione dell'antica porta urbana diventata Porta Nuova, la parziale occlusione di via La Passata, piccoli ampliamenti e sopraelevazioni hanno portato alla configurazione attuale.

La formulazione delle ipotesi sulle principali fasi costruttive ha permesso di orientare le
1220 indicazioni progettuali basate sulla conservazione della materia antica e delle stratificazioni storiche ammettendo limitate rimozioni di aggiunte ritenute incongrue per forma, materiali e tecniche. Tutti gli interventi aggiuntivi dettati da esigenze di carattere funzionale - come nel caso della previsione della rete impiantistica - secondo il progetto saranno distinguibili, ma non dissonanti, improntati alla congruità formale, materiale, costruttiva, strutturale e distributiva.

Per quanto concerne i prospetti, analogamente a quanto previsto per tutti gli altri isolati, sono state mappate tutte le forme di degrado con particolare riguardo ai singoli componenti architettonici, ricondotti alle categorie tipologiche già ricordate, e proposti i relativi rimedi (fig. 1).

Gli interventi maggiormente incisivi all'interno dell'isolato riguardano una unità edilizia d'interesse collettivo di proprietà dell'Arcidiocesi di Brindisi-Ostuni, contigua al vico La Passata, che nel corso del tempo ha subito modifiche decisamente incongrue. In particolare, il progetto ipotizza la parziale liberazione del vico con la rimozione di una scalinata aggiunta in epoca relativamente recente e il ripristino di un collegamento interno all'unità edilizia in questione che prevede, oltre all'inserimento di un corpo scala a garanzia della distribuzione verticale, l'aggiunta di un ascensore per il superamento delle barriere architettoniche (fig. 2). Questa operazione renderà nuovamente accessibile il tratto del vico che s'innesta su via Porta Nuova e consentirà la riapertura in fondo al medesimo vico dell'accesso ad un ambiente di proprietà privata destinato ad attività ristorativa, posto ad una quota più bassa, tuttavia raggiungibile con l'aggiunta di una scala contenuta dal punto di vista dimensionale per superare l'attuale dislivello.

La proposta suggerisce per il livello superiore una nuova distribuzione interna, con la rimozione di tramezzature improprie e l'aggiunta di divisori concepiti nel rispetto dell'antica spazialità congeniale ad accogliere la citata scuola di alta formazione musicale.

Un intervento similare di ridistribuzione interna per una più coerente articolazione degli ambienti è previsto al livello ancora superiore dove, nel rispetto degli antichi sistemi voltati, si conferma la convivenza delle due destinazioni d'uso esistenti (la stazione radiofonica locale da un lato e l'oratorio dall'altro) garantendo a ciascuna un proprio margine di autonomia.

Data la prossimità dell'isolato alla porta urbana orientale e accolta l'ipotesi di attività d'interesse pubblico previste all'interno dell'unità edilizia in questione, la circostanza è favorevole per prevedere qui la prima tappa dell'ipotetico itinerario turistico di risalita alle *cummerse* che, nel caso specifico, potrà raggiungere la quota di + 18,50 m (fig. 3). Mirati lavori

di sistemazione del piano di calpestio delle terrazze garantiranno la fruibilità dell'affaccio panoramico in questo punto che potrà essere visitato e fruito in ogni sua parte in condizioni di sicurezza anche da persone diversamente abili.

Progetto pilota per la riqualificazione del margine. Piazza Antonio Mitrano

La selezione dell'isolato campione ha offerto la possibilità di riflettere anche su un'area ad esso contigua, irrisolta dal punto di vista urbanistico e architettonico, ed alla quale l'idea progettuale suggerisce una risposta sia alla scala architettonica che a quella urbana.

Posta su un terreno in pendenza, è un'area di risulta di forma grossomodo triangolare perimetrata da alberature, con il lato minore tangente all'anello perimetrale del centro antico posto ad una quota più alta e gli altri due lati convergenti sul punto più basso della piazza.

Si tratta di un'area in pendio priva di ogni valore urbano, distinta funzionalmente in due parti, l'una a monte adibita a parcheggio e a mercato settimanale, l'altra a valle destinata a verde urbano.

L'indirizzo progettuale che si propone, accogliendo le previsioni di programma che prescrivono per quella zona spazi collettivi di aggregazione e per lo spettacolo, suggerisce un luogo per la socialità altamente flessibile che potrà essere utilizzato come area mercatale, ma anche per eventi all'aperto.

L'intento è quello di promuovere un luogo di qualità che prevede un'area attrezzata sistemata a verde urbano in superficie con parcheggio pubblico interrato a servizio di residenti e turisti.

La progettazione dello spazio d'interesse collettivo, che sfrutta un dislivello complessivo di circa 8 m, si ispira ai sistemi terrazzati del paesaggio agrario di Locorotondo con particolare riguardo a quelli posti a ridosso del centro antico, al di sotto di via Nardelli. Dunque, da un lato si prospettano terrazzamenti delimitati da muretti a secco di contenimento, con rampe e scivoli per il superamento dei dislivelli, dall'altro si ipotizza una riorganizzazione dei viali alberati esistenti con un incremento del verde urbano ricorrendo a specie vegetali autoctone (fig. 4).

L'ipotesi di un parcheggio interrato in muratura tradizionale, che costituisce la struttura portante delle soprastanti terrazze, suggerisce un'organizzazione in moduli di tre campate, di cui quella centrale di smistamento e distribuzione, mentre quelle laterali destinate agli stalli delle autovetture.

La composizione nel suo complesso prevede una fascia distributiva sul lato Nord dove sono concentrate le rampe, gli scivoli di accesso alle terrazze, ma anche le scale di collegamento fra gli spazi in superficie e il parcheggio interrato.

L'elemento di maggiore criticità della piazza cui riservare un punto di attenzione è rappresentato da un edificio intelaiato in calcestruzzo armato ad un unico piano posto in prossimità dell'anello perimetrale, la cui immagine contrasta fortemente con l'ambiente costruito. Si tratta di una costruzione destinata originariamente a mercato coperto e collegata ad un edificio residenziale a due livelli, la cui proprietà è stata frammentata e divisa fra privati. La proposta di progetto suggerisce un intervento di riqualificazione attraverso un involucro diaframmato dell'edificio a due piani e il tamponamento del portico al piano terra dell'edificio ad un unico livello con copertura piana. Questa potrà diventare parte integrante del sistema dei terrazzamenti della piazza ricompresa nel progetto degli spazi aperti che riconnette episodi urbani separati attraverso una ricucitura fisico-visiva fra il centro antico e la città di più recente espansione.

Considerazioni conclusive

Il restauro da solo non potrà assicurare condizioni sufficienti per perseguire obiettivi di conservazione, riqualificazione e valorizzazione del centro antico se non rientra all'interno di una strategia complessa, concordata e coordinata ad una scala più ampia che includa la realtà urbana nel suo complesso e coinvolga più competenze disciplinari. Non si potrà non tener conto di un insieme coordinato di interventi, dalla conservazione, al recupero, alla valorizzazione in senso lato del patrimonio storico insediativo, allo scopo di aumentare la capacità attrattiva del centro antico, offrire un codice di pratica per interventi sia alla scala

architettonica che urbana, ottimizzare la qualità abitativa e degli spazi collettivi, incoraggiare accanto alla funzione residenziale il perdurare di più attività, culturali, commerciali, artigianali, incentivare forme di ospitalità diffusa attraverso il consapevole recupero delle abitazioni abbandonate.

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Figure 1. Linee-guida per il recupero del centro antico di Locorotondo (BA), isolato n. 3. Restituzione grafica di Caterina Anelli, Giorgio Bevilacqua, Annalisa Cascione, Serena Cellie, Roberta Quaranta, Antonio De Liddo, 2015.

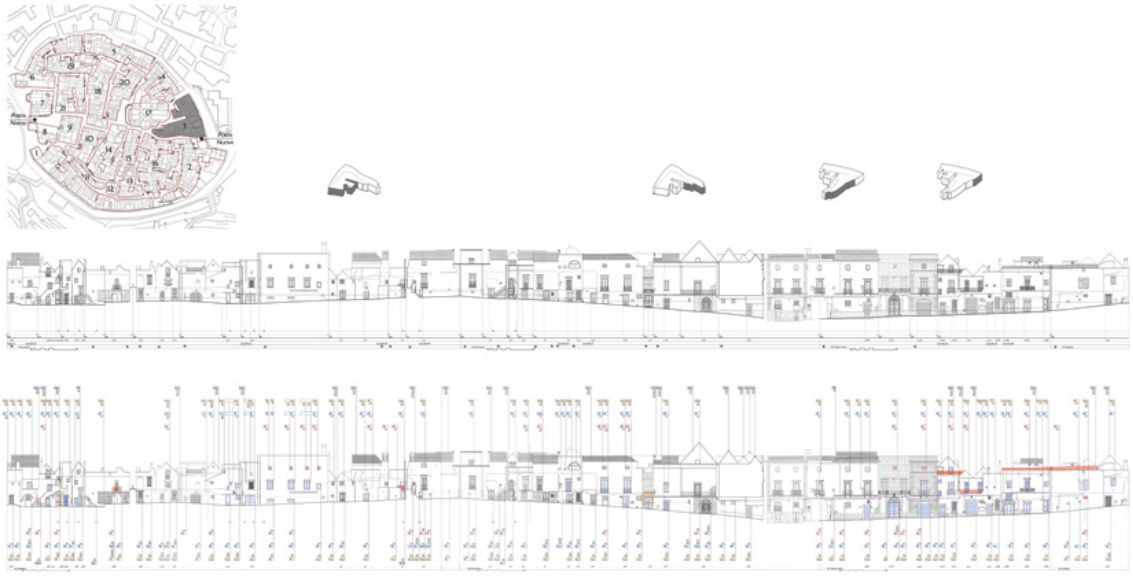


Figure 2. Rilievo e prefigurazione del progetto di restauro dell'isolato n. 3, sezione trasversale. Restituzione grafica di Caterina Anelli, Giorgio Bevilacqua, Annalisa Cascione, Serena Cellie, Roberta Quaranta, Antonio De Liddo, 2015.

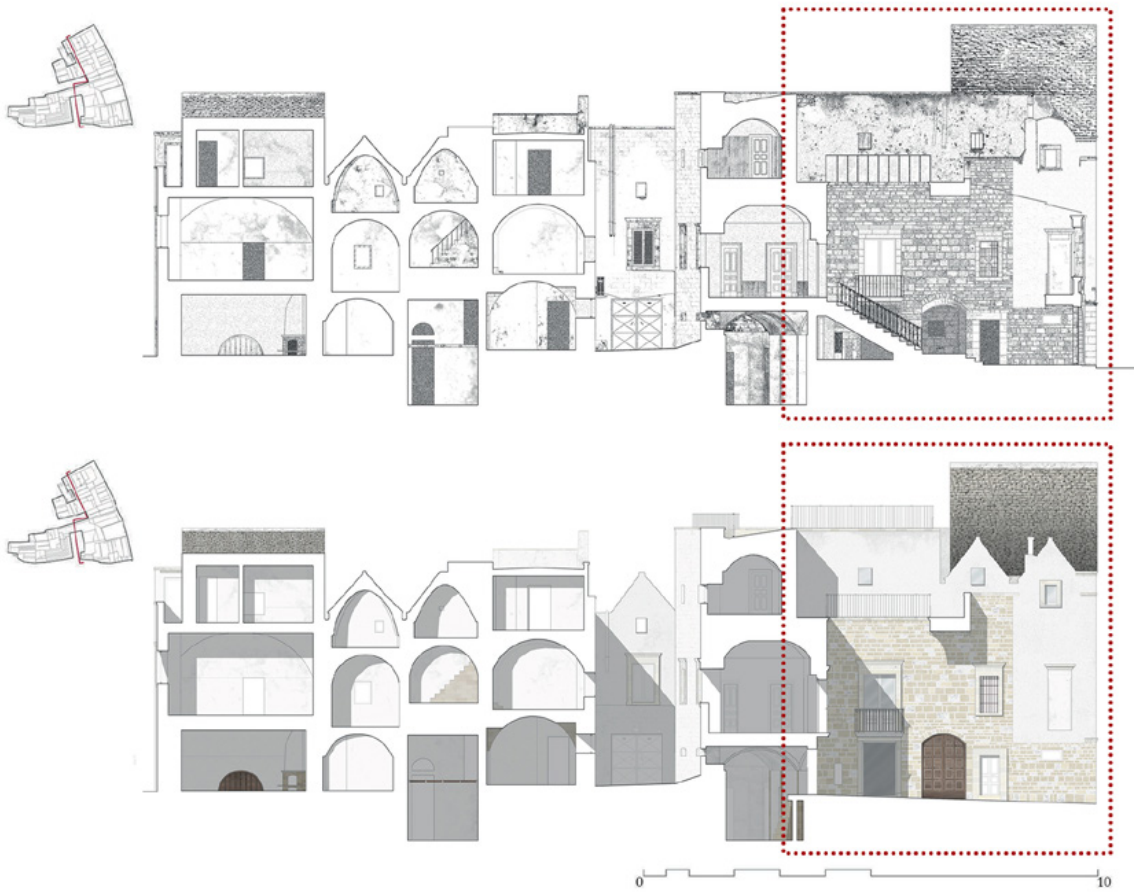


Figure 3. Progetto dello spazio pubblico, sintesi degli interventi fra cui l'itinerario di risalita alle cummerse. Restituzione grafica di Caterina Anelli, Giorgio Bevilacqua, Annalisa Cascione, Serena Cellie, Roberta Quaranta, Antonio De Liddo, 2015

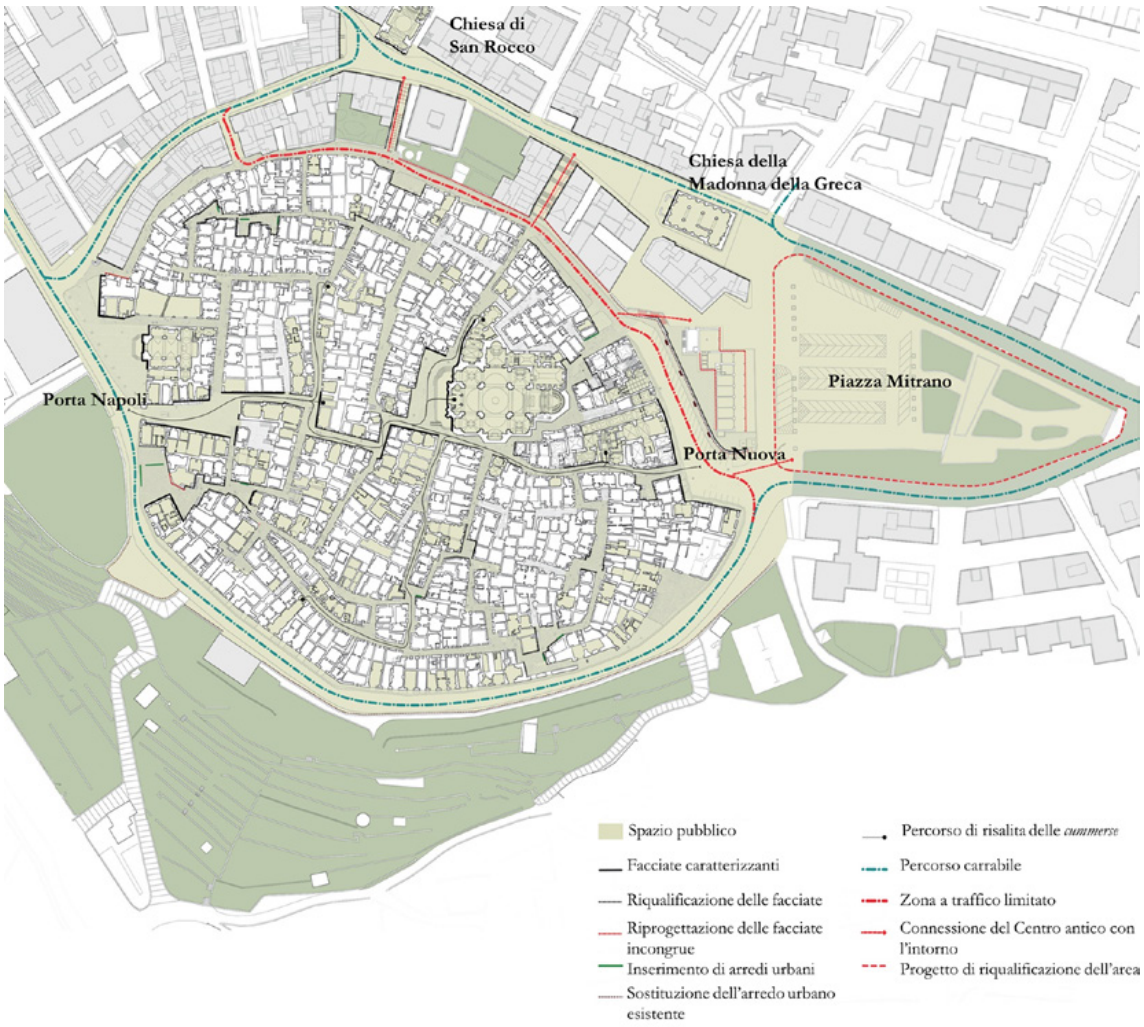
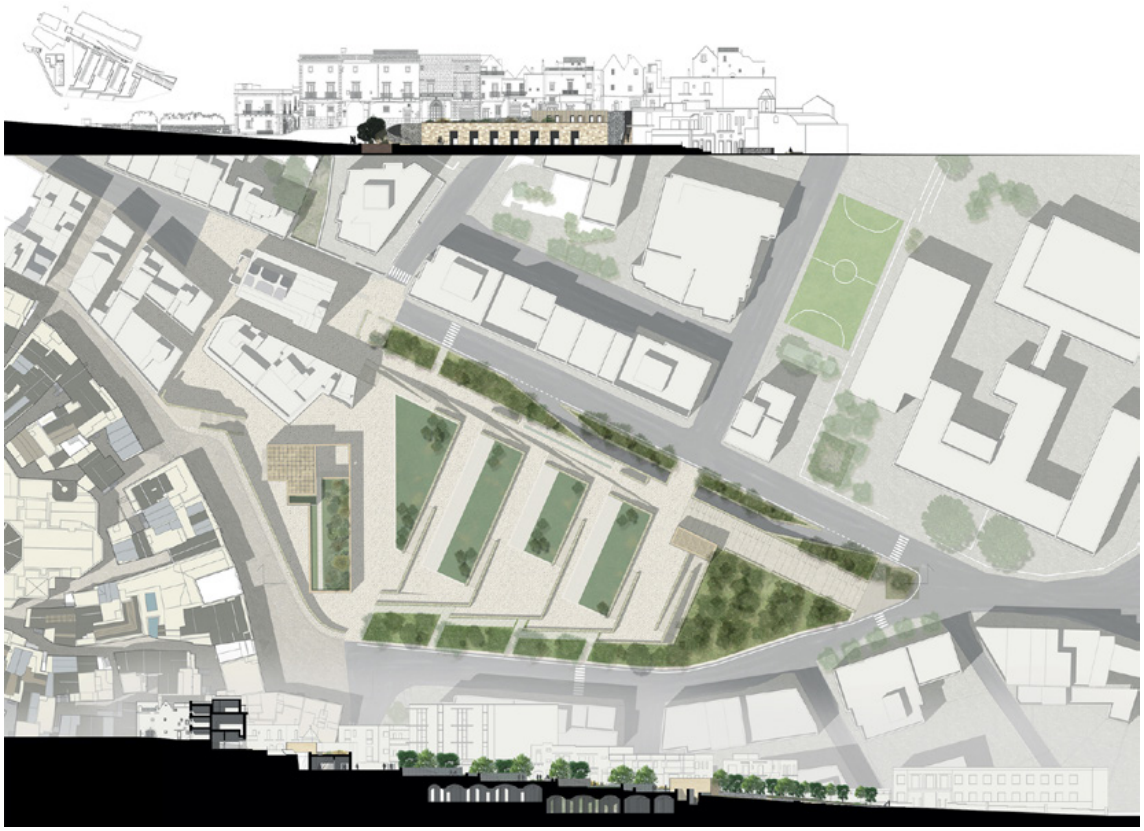


Figure 4. Progetto dell'area di margine contigua all'isolato n. 3. Restituzione grafica di Caterina Anelli, Giorgio Bevilacqua, Annalisa Cascione, Serena Cellie, Roberta Quaranta, Antonio De Liddo, 2015



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Architettura monumentale fascista a Taranto

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Lo studio propone i risultati della tesi di laurea "Architettura monumentale fascista a Taranto: l'opera di Cesare Bazzani", coordinata dal prof. G.P. Consoli nel Politecnico di Bari, concentrata sull'analisi dell'architettura, e del suo ruolo, nel ventennio fascista per la trasformazione della città di Taranto che, da "una città cresciuta su sé stessa per accumulo, uno strato sopra l'altro di civiltà…una città che non ha alternativa", muta in una città costituita da nuovi ed imponenti fronti sulla costa.

Ruolo fondamentale in questo processo di evoluzione è svolto dagli accademici arch. C. Bazzani e A. Brasini, i quali impressionarono, con i loro innesti architettonici, una città che voleva riappropriarsi di una sua antica maestosità per riemergere da un periodo di decadenza sociale e architettonico-spaziale.

Su questo principio si sviluppa il progetto del lungomare monumentale che genera un raccordo tra l'affaccio al mare dell'isola, il borgo di ottocentesco e la zona di espansione, definendo un fronte destinato a diventare l'asse direzionale e commerciale della città grazie alla costruzione di numerosi edifici speciali.

Questi edifici, in alcuni casi, "si inseriscono entro il lotto con una sagoma compositiva nuova, secondo i canoni 'novecentisti' che, cioè, non si chiude alla città ricalcando il perimetro del lotto, ma si articola e si sfrangia in una forma aperta e segmentata" come accade nel palazzo delle poste e telegrafi di Bazzani e nel palazzo del Governo di A. Brasini. In altri casi, come nell'edificio della Banca d'Italia e in quello dell'ex casa del Fascio, attuale sede degli uffici della Sezione staccata della Commissione Tributaria Regionale, saturano il lotto su cui sorgono assecondando in primis l'andamento del lungomare e poi della stessa area edificatoria, facendo sì che le facciate monumentali del costruito creino un rapporto con il mare tale da segnare in maniera decisiva l'immagine, l'identità e la riconoscibilità della città dei due mari.

Introduction

La ricerca sulle architetture di epoca fascista realizzate a Taranto dall'architetto Cesare Bazzani è stata elaborata durante il laboratorio di laurea coordinato dal prof. G. P. Consoli con gli studenti S. Lavolpicella, S. Masciopinto, L. Preziosa, S.S. Quatela, G. Vasquez, G. Volpe del corso di laurea in Architettura – Dipartimento DICAR del Politecnico di Bari.

Lo studio descrive come gli edifici specialistici progettati e realizzati dall'accademico d'Italia (Palazzo delle Poste, Casa del Fascio, facciata della Chiesa del Carmine e Banca d'Italia), hanno contribuito alla formazione del lungomare di Taranto che, proprio grazie ad essi, assume un ruolo determinante per l'immagine della città.

L'opera di Bazzani si presenta al pubblico come mediazione, facendo ingerenza di stili, materiali e linguaggi, tra il modus operandi di Piacentini, strettamente legato all' ufficialità del regime, e quello del Brasini, a tratti visionario e surreale[1].Proprio per questo motivo il suo operato si concentra maggiormente nelle province dell'Italia fascista, soprattutto nel centro (Forlì, Pescara, Terni, Viterbo e Macerata) e nei capoluoghi del sud (Napoli, Bari, Taranto, Foggia e Messina). A Taranto è attivo nella parte finale della sua carriera (dal 1933 ca. al 1942) progettando molteplici edifici specialistici, che attestano la volontà di crescita della città, per delinearne il nuovo volto. Si apprezza l'impegno costante del Bazzani, che si sviluppa sulla base di rimandi stilistici di memoria, di esperienza, di senso comune, di "regionalismo" e "clima" e che egli saprà trattare e far proprie. Non tutti gli edifici saranno costruiti, quelli progettati per la città vecchia ad esempio, avrebbero richiesto un maggior dispendio economico e tempi di realizzazione troppo dilatati non garantendo un'immediata riconoscibilità dell'operato del regime fascista; alcuni proposti per il lungomare della città nuova avrebbero sovraccaricato di edifici pubblici un asse urbano già denso.

Methodology

Lo studio condotto mette in evidenza in un primo momento gli aspetti storico formativi e le fasi evolutive della città, utilizzando come metodo di indagine quello della lettura del tessuto storico attraverso i segni e le stratificazioni che negli anni si sono sovrapposti. Di fondamentale importanza, inoltre, è risultata la ricerca condotta presso gli archivi storici, privati e nazionali, i quali hanno svolto il ruolo di supporto storico nella nostra ricerca, consentendoci di ricomporre gli avvicendamenti progettuali e costruttivi che l'architetto Cesare Bazzani ha dovuto affrontare nel proprio lavoro per la città di Taranto. Nei disegni conservati all'Archivio di Stato di Terni spicca l'attenzione per i particolari e le decorazioni che l'architetto adopera, questo tipo di approccio sarà ben lontano da quello che avrà nella città pugliese, dove dagli esordi floreali giungerà ai prologhi razionalisti, dall'abitazione privata, alle importanti dimensioni dell'edificio rappresentativo.

Questa prima fase di lettura fa da preambolo ad uno studio maggiormente concentrato sul ventennio fascista marcando l'evidente mutazione che il regime apporta alla città. Abbiamo dunque analizzato l'orditura dell'urbe con l'ausilio delle cartografie storiche confrontandole con il tessuto odierno e mettendo in evidenza i problemi inerenti la necessità di espansione della città.

Fino alla metà dell'Ottocento si può dire che la città di Taranto fosse cresciuta entro il perimetro dell'isola, tra le mura del centro antico, attraverso interventi di completamento edilizio e sopraelevazione che avevano progressivamente saturato le aree. Un primo sviluppo extramoenia ha interessato il borgo a partire dagli anni '20, dapprima attraverso l'espansione dell'edilizia residenziale riservata alla borghesia verso est, dal lato di Porta Lecce, in un secondo momento con un decentramento delle funzioni pubbliche, operazione che porterà alla formazione dell'attuale Lungomare Corso Vittorio Emanuele III.

Un secondo sviluppo della ricerca, verte sulla lettura morfo sintattica degli edifici in stretta relazione con la città, evidenziando come questi si conformano divenendo elementi caratterizzanti.

Un'attenta ricerca degli stilemi che l'architettura fascista ha negli anni reso fondamentali per la riconoscibilità dei propri edifici, simboli del potere centrale, ha messo in evidenza come Bazzani li declini all'interno del contesto tarantino con l'utilizzo di materiali lapidei, ordini

giganti, torri littorie, pareti curve e facciate monumentali. Bazzani, nell'utilizzo di materiali lapidei sembra seguire il pensiero di Piacentini quando scrive: "…una facciata in pietra è sempre più bella di una in cemento. Non possiamo costruire sempre in cemento armato per essere moderni a tutti i costi!"[2].

Le opere di Bazzani non risultano essere delle architetture periferiche al contesto ma lo segnano in maniera profonda, armonizzandosi con esso e divenendone parte essenziale, a tal punto che risulterebbe difficile immaginarle, così come sono, altrove.

Questa riflessione nasce dal fatto che molti storiografi ritengono i progetti del Bazzani delle architetture seriali, come fossero oggetti da piazzare qua e là indistintamente. Probabilmente proponeva più di una volta la stessa base progettuale, ma, declinandola a seconda del locus, diveniva punto di partenza per arricchire l'organismo architettonico e creare delle variazioni progettuali.

Forming process

L'attenzione dello studio svolto, si concentra sulle caratteristiche di linguaggio, sugli elementi di riconoscibilità a scala urbana, sull'articolazione volumetrica e sulle forme tipiche elementari degli organismi architettonici realizzati dall'architetto. Nella lettura si sono rilevati caratteri ricorrenti, ripetibili e costanti che possono essere: la torre, gli elementi classici, l'elemento curvo, e la corte nelle sue declinazioni.

La torre costituisce un espediente volumetrico reiterato nella Casa del Fascio, nel Palazzo delle Poste e nell' auspicato campanile progettato per la Chiesa del Carmine, presente nei primi progetti e mai realizzato.

Nel Palazzo delle Poste il profilo della torre che segna il prospetto laterale si accorda con le forme più severe del Palazzo del Governo progettato da Brasini, e anche se la costruzione del Bazzani è visibilmente più bassa la partizione delle aperture sottolinea la verticalità dell'elemento torre evitando che l'edificio venga schiacciato dal palazzo antistante.

Nella Casa del Fascio la torre littoria è caratterizzata da una vigorosa verticalità posizionata nell'angolo tra la facciata a est e quella a sud è chiusa e compatta diventa perno intorno al quale si snoda l'intero edificio, un elemento altissimo che segna la sua presenza sul territorio.

Per la Chiesa del Carmine l'architetto nei progetti precedenti il definitivo riprende l'idea di un campanile slanciato e longilineo, il quale non verrà mai realizzato, lasciando spazio ad un elemento, posto in alto e centralmente alla facciata di via D'Aquino, che svetta dagli schemi lineari della parte sottostante e si impone sulla facciata con una soluzione a vela, assimilando il prospetto laterale della chiesa alla facciata di un palazzo.

L'obiettivo della torre per Bazzani è quello di generare una conquista visiva dell'intorno urbano e di rivestire la funzione di punto focale della composizione, unendo in sé sia la qualità classica della simmetria sia quella dell'oggetto architettonico che nasce da un disegno in prospettiva.

Un secondo elemento riconoscibile nella produzione di Bazzani è la linea curva presente nella facciata principale della Casa del Fascio, nella terminazione del Palazzo delle Poste e nella prima versione del prospetto della Banca d'Italia.

Nel Palazzo delle Poste il volume curvo caratterizza la facciata nell'angolo a sud-est dell'edificio, rendendo leggibile la destinazione d'uso e specializzando la funzione del corpo stesso, cioè il telegrafo, gli elementi arcuati poi animano la struttura segnando ritmicamente la facciata.

Nella Casa del Fascio la parte curvilinea della facciata indirizza lo sguardo verso la piazza, mentre percorrendo la via in senso opposto, la visione dell'edificio è celata, non riuscendo a cogliere l'organismo nella sua interezza in cui sembra sempre assente una parte, non si avverte la facciata curvilinea e non si vede la torre, come a volersi nascondere in un primo momento svelandosi durante la passeggiata del lungomare. Il ritmo serrato delle aperture, intervallate da lesene, viene interrotto da un imponente 'arco trionfale' che costituisce una pausa nel partito seriale della facciata. In entrambi gli edifici già citati, nel palazzo della Banca d'Italia e nella Chiesa del Carmine, la presenza, rispettivamente di bucature centinate e aperture circolari avvalorano la tesi che la linea curva costituisca un elemento imprescindibile del palinsesto formale di Bazzani.

La linea curva governa l'articolazione volumetrica, la caratterizza e la rende riconoscibile nel contesto urbano, l'elemento può essere scelto a causa della conformazione del lotto o più probabilmente per scelta stilistica ma così come esplicano le direttive del Manifesto dell'Architettura futurista che proclama: " Le linee oblique e quelle ellittiche sono dinamiche, per la loro stessa natura hanno una potenza emotiva, mille volte superiore a quella delle perpendicolari e delle orizzontali, e che non vi può essere un'architettura dinamicamente integratrice all'infuori di essa"[3], si può quindi affermare che è un elemento riconoscibile di tutta la sua produzione architettonica.

Un altro elemento costante nelle architetture di Bazzani, guardando al panorama nazionale, è la presenza della corte nelle sue diverse declinazioni. Prendendo in esame il Palazzo delle Poste di Taranto, ad esempio, la corte risulta essere un espediente estremamente funzionale e volto esclusivamente a servire di luce gli spazi che la circondano; infatti, ipotizzandola seppur con riserva, come una sottrazione di volume, si potrebbe considerare rimosso soltanto l'entità a partire dal secondo livello, mantenendo ai piani inferiori una soluzione di continuità tra gli ambienti.

Di contro, esaminando l'edificio per la Banca d'Italia, i vuoti che caratterizzano le corti, si ricordi che ne sono presenti due di cui una coperta, sono espedienti che rendono nodali i suddetti vani, rendendosi così spazi accentranti di un edificio che, letto in questo senso, si sviluppa tutt'intorno.

Tratto distintivo degli edifici, costruiti da Bazzani in tutta Italia, è l'impiego di elementi che richiamano l'attenzione alla "tradizione", utilizzando un linguaggio legato ad un classicismo storico. Questo linguaggio è fortemente presente nella prima fase della sua produzione e diverrà sintesi nei progetti per Taranto. Il classicismo non è più semplice confronto con l'oggetto classico, e tantomeno sua riproposta letterale, ma diviene rarefazione delle leggi intrinseche dell'architettura, rispetto delle proporzioni, comprensione dello spirito classico, rinascita dell'ordine antico, con l'obiettivo di trasmettere l'ordine nuovo imposto dal fascismo che possiede un'armonia classica confrontandosi con il quotidiano ed esaltandone i valori eterni.[4] La potenza e l'imponenza dell'opera di Bazzani, quindi, è tutta marcata dall'utilizzo di elementi classici: il basamento, il muro a scarpa, l'ordine gigante, le modanature e la componente decorativa.

Il Palazzo delle Poste si presenta come un edificio a cortile centrale con bracci semplici strutturali e distributivi differentemente gerarchizzati dalla presenza di un vano prevalente a doppia altezza in corrispondenza del prospetto principale. Quest'ultimo è aggettante rispetto all'intero edifico enfatizzando il sistema trilitico scandito dalle paraste in combinazione con l'architrave.

La tripartizione orizzontale della facciata è caratterizzata dalla presenza del basamento (comprendente di podio) la cui quota marca lo spazio, a doppia altezza, dell'interno; lo sviluppo dell'elevato, con diverso trattamento superficiale e leggermente arretrato, è caratterizzato da bucature seriali con specchiature interne. A terminazione dell'edificio si pone il coronamento, scindibile idealmente in unificazione, che tiene insieme tutti i prospetti, e la conclusione.

La componente classica è preponderante ed è costituita da semicolonne di ordine gigante provviste di base e capitello che culminano con sei statue, rappresentanti attività strettamente legate all'economia di Taranto.

Il prospetto laterale, in stretto rapporto con il palazzo del Governo di A. Brasini, presenta l'elemento simbolico della torre, caratterizzata da una parete muraria continua chiudente e opaca. Questa parete presenta una forte scansione verticale, data dall'arretramento continuo, in direzione del portale, di una porzione di facciata che si sviluppa per circa tre quarti dell'altezza.

L'edificio della Banca d'Italia è un organismo con corte e vano nodale su cui affacciano vani seriali distintamente classificabili in doppio strutturale/triplo distributivi, doppio strutturale/doppio distributivi, semplice strutturale/semplice distributivo, disposti in maniera eterogenea.

In linea con l'edificio postale, la facciata principale aggetta rispetto al resto del fabbricato il quale è interamente tripartito in basamento, elevato e conclusione. Il basamento si limita al solo podio ed è scandito, nell'estremo superiore, dalla presenza dei plinti delle paraste. Nell'elevato si leggono invece differenti tipologie di bucature che suddividono in 3 livelli

l'edificio. Le bucature del piano terreno sono caratterizzate da elementi lavoranti per forma, mentre ai livelli superiori vengono incorniciate da piani progressivamente aggettanti. Nella Banca il ritmo della facciata è scandito da paraste di ordine gigante, in cui il capitello e la base, i quali fino ad ora erano accuratamente definiti negli altri edifici, ora sono estremamente semplificati ridotti a rigidi parallelepipedi. La presenza di aperture arcuate, il balcone d'onore centrale sormontato da un timpano, sono la firma dell'autore e la sintesi tra il Razionalismo e la Classicità di Cesare Bazzani.

La casa del fascio si presenta come un organismo a L con torre simbolica nell'intersezione dei bracci.

Il corpo sul fronte principale curvo, è doppio strutturale e distributivo con vano nodale a doppia altezza ipotattico. Mentre il secondo, è per una prima parte doppio strutturale e distributivo per la restante triplo strutturale e distributivo costituendo una relazione, tra i vani, paratattica di natura seriale.

Al centro dell'edificio c'è un vano nodale biassiale costituito dalla presenza di un teatro.

In questo espediente compositivo, si perde la classica tripartizione della facciata, per lasciar spazio ad uno sviluppo bipartito costituito dall'elevato e la conclusione. L'elevato presenta, al piano inferiore, elementi lavoranti per forma che scandiscono i nodi di discontinuità evidenziando i volumi a tutt'altezza dell'ingresso, mentre ai piani superiori, come negli altri edifici, gruppi di finestre incorniciate da piani progressivamente aggettanti. A completare la monumentalità dell'edificio, l'ordine gigante che inquadra i diversi piani di facciata.

La torre littoria, concludendo, si pone in angolo come elemento di riconoscimento a scala urbana.

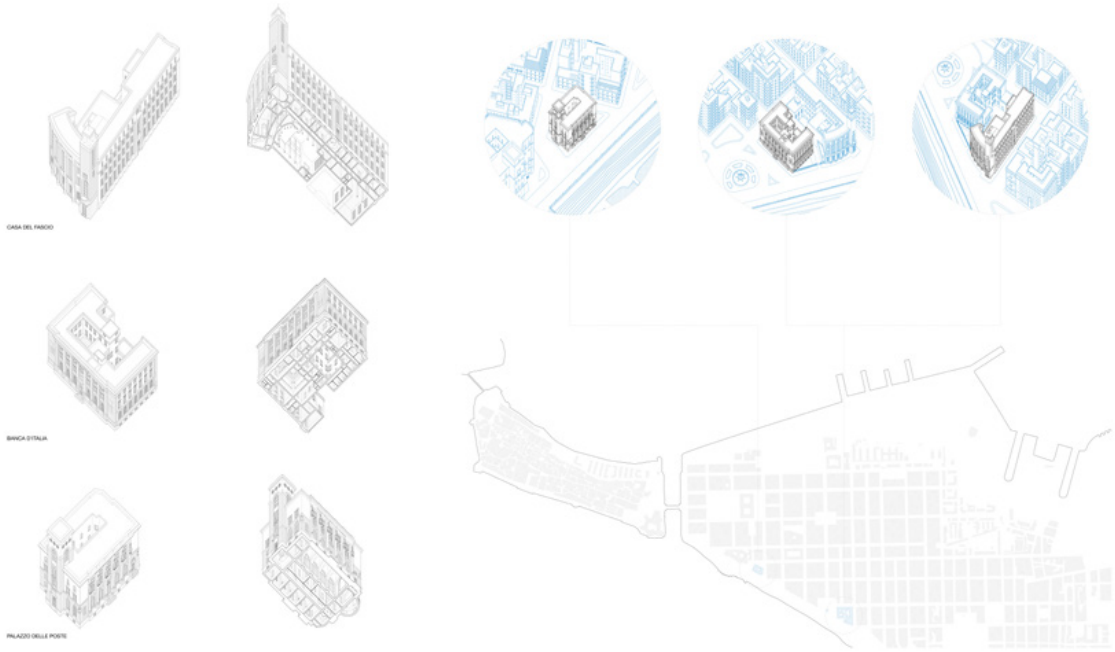
Per la Casa del Fascio la componente classica trova un punto d'incontro tra l'influenza razionalista, evidente negli ultimi progetti della sua carriera, e l'onnipresente tradizione, i volumi si combinano a materiali usuali ed antiche strutture, definendo il "ritmo strutturale degli antichi acquedotti romani"[5].

Conclusion

Dallo studio quindi si evince come gli edifici specialistici progettati e realizzati dall'accademico d'Italia abbiano contribuito alla formazione del lungomare di Taranto e di conseguenza alla sua immagine, che proprio grazie ad essi assume un ruolo determinante nel panorama architettonico del ventennio fascista.

Essendo stato attivo a Taranto nella parte finale della sua carriera, Cesare Bazzani, progettando molteplici edifici specialistici, lascia emergere nelle opere trattate, la sintesi del suo *modus operandi,* manifestando il suo modo di costruire e lo stile che di volta in volta si è modificato e adattato alla tipologia di edificio da realizzare.

Figure 1.



1232

Figure 2.

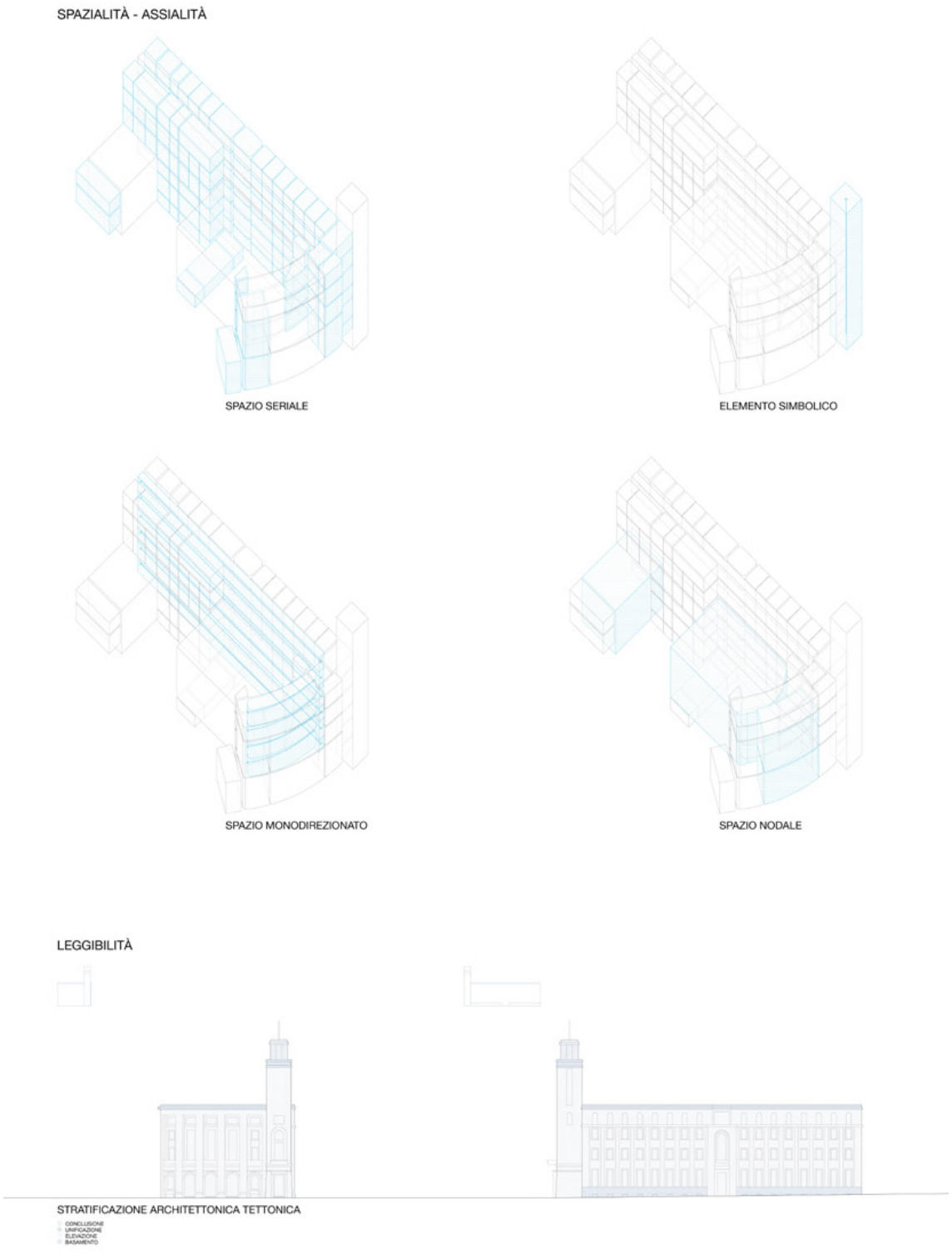

SPAZIALITÀ - ASSIALITÀ
SPAZIO SERIALE
ELEMENTO SIMBOLICO
SPAZIO MONODIREZIONATO
SPAZIO NODALE
LEGGIBILITÀ
STRATIFICAZIONE ARCHITETTONICA TETTONICA
CONCLUSIONE
UNIFICAZIONE
ELEVAZIONE
BASAMENTO

Figure 3.

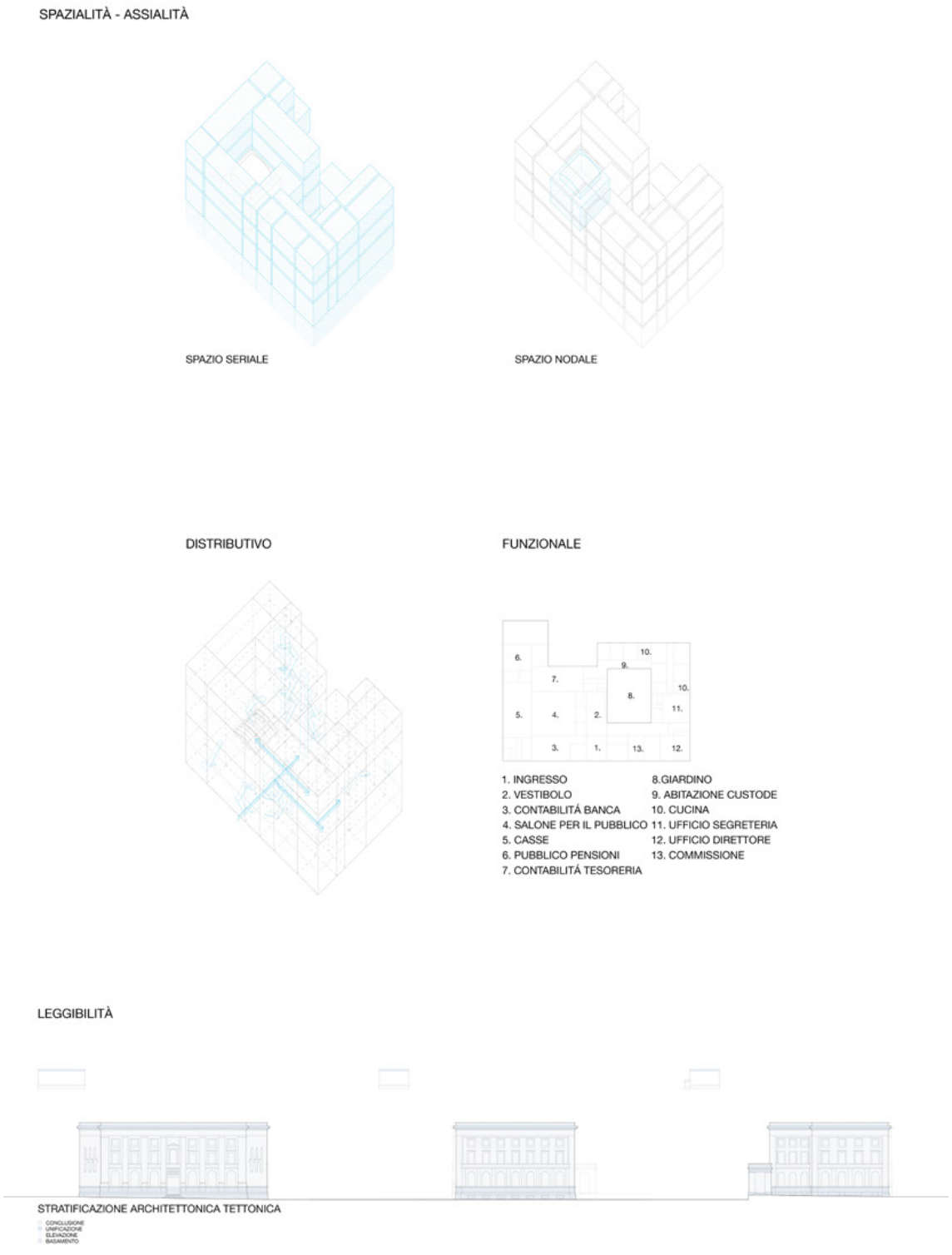
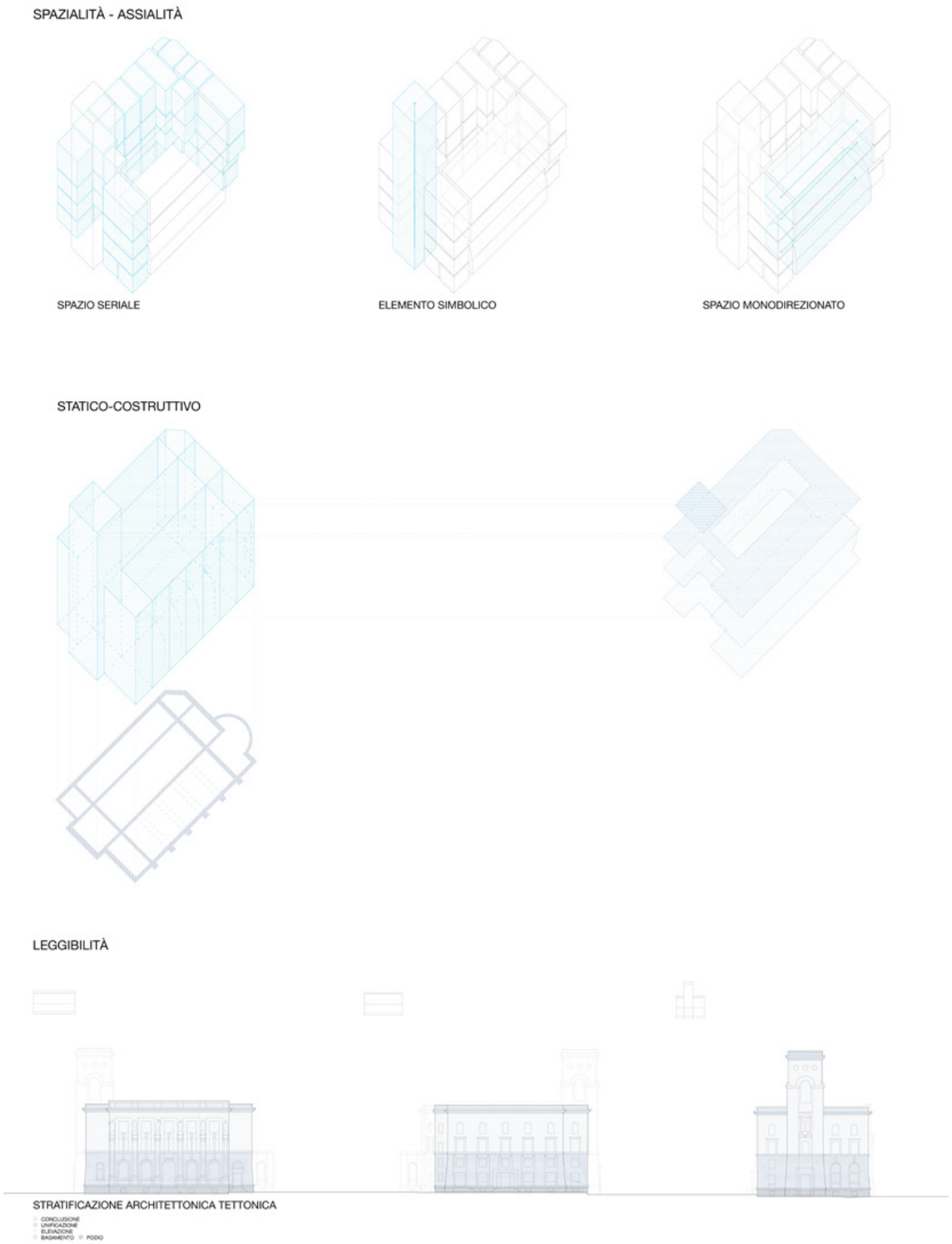

SPAZIALITÀ - ASSIALITÀ
SPAZIO SERIALE
SPAZIO NODALE
DISTRIBUTIVO
FUNZIONALE
1234
1. INGRESSO
2. VESTIBOLO
3. CONTABILITÁ BANCA
4. SALONE PER IL PUBBLICO
5. CASSE
6. PUBBLICO PENSIONI
7. CONTABILITÁ TESORERIA
8.GIARDINO
9. ABITAZIONE CUSTODE
10. CUCINA
11. UFFICIO SEGRETERIA
12. UFFICIO DIRETTORE
13. COMMISSIONE
LEGGIBILITÀ
STRATIFICAZIONE ARCHITETTONICA TETTONICA

Figure 4.


SPAZIALITÀ - ASSIALITÀ
SPAZIO SERIALE
ELEMENTO SIMBOLICO
SPAZIO MONODIREZIONATO
STATICO-COSTRUTTIVO
LEGGIBILITÀ
STRATIFICAZIONE ARCHITETTONICA TETTONICA

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Puerto Rico: tra Caribe e Sud America, prospettive di sviluppo del patrimonio infrastrutturale e produttivo in una gestione pianificata dell'emergenza post uragano

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Keywords: *Sugarcane mills, industrial archaeology, preservation, territorial settlements*

The paper investigates and documents the raise and the decay of Sugarcane Mills a productive territorial system, a settlement system, composed by architectural warehouse, harbors and railway infrastructures in Puerto Rico. The Sugarcane Mills characterized the identity, the history and the economy of the island for more than 100 years together with their architectural elements and the workers housing settlements (formal and informal). By 1940, there were 44 mills in operation in Puerto Rico. They were – and still are – dislocated along the coasts next to logistic harbor and in the inner agricultural land. They were served by dedicated railway tracks connecting the productive areas to the coastal line. In the 1940s, however, the mills began to weaken, due to various factors. Between 1951 and 1968, 17 mills ceased operations. At the end of the 1960s, the government tried to rescue the industry through a recovery program and in 1973 created the Sugar Corporation. Despite the fact that the government became the principal sugar producer in Puerto Rico, the mills, both privately and publicly funded, were shut down, one by one. In 2000, operations ceased at the last mills still functioning: Roig in Yabucoa and Coloso, which had operated for nearly 100 years in the municipality of Aguada. The Conservation Trust of Puerto Rico has already consider the problem of Sugar Mill preservation although the economic difficulties are relevant. The paper will provide evidence of other similar case studies discussing the problem of preservation in other countries were the economic and social situation is different, considering also the most recent post-hurricane disaster events.

Gentucca Canella

Una premessa per Puerto Rico

«Negli anni'60 del XX secolo, il tasso annuale di crescita del PIL portoricano era del 7,6%; l'isola convergeva con gli Stati Uniti d'America e i più ottimisti ed entusiasti parlavano di Puerto Rico come la "Quinta Tigre", paragonando la performance economica dell'isola a quella che contemporaneamente registravano alcuni Paesi dell'Asia Orientale. Nel giro di mezzo secolo, oggi Puerto Rico è spesso definita come la "Grecia dei Caraibi". Come è stato possibile? Per comprenderlo è necessario conoscere le cause storico-economiche dell'attuale crisi: mentre Paesi come Taiwan e Corea del Sud hanno potuto proteggere la crescita di un proprio settore industriale, Puerto Rico – non essendo politicamente sovrana – non ha potuto fare altrettanto, rimanendo in balia delle scelte del governo statunitense e del suo capitale»[1].

Queste riflessioni, tratte da *Neoliberismo e colonialità a Puerto Rico* di Andria Pili e, in particolare, il legame esistente tra l'attuale situazione politica portoricana – territorio soggetto ai pieni poteri del Congresso statunitense ma allo stesso tempo "non incorporato" e quindi senza diritto di voto –, e la mancata crescita produttiva e industriale degli ultimi sessant'anni, hanno rappresentato per la nostra ricerca un punto di partenza non secondario nell'affrontare i temi di progetto del workshop *Puerto Rico Re_Start*, promosso dalla University of Florida e dalla University of Puerto Rico, a San Juan, nel marzo 2018.

Si tratta di un percorso quasi controcorrente rispetto ad un consueto atteggiamento che tende, in particolare in questi ultimi anni, a riconoscere al progetto di architettura essenzialmente un ruolo di "*ricucitura post disastro*", affrontando lo stato dell'emergenza ambientale in un'alternanza quasi indistinta tra scala microurbanistica e scala territoriale. I risultati di questo modo di procedere, se da un lato si riferiscono quasi esclusivamente a una dimensione residenziale del costruito – dalla variazione tipologica unifamiliare fino al dettaglio tecnologico per una prioritaria efficienza termica, acustica, energetica –, dall'altra parte mettono in campo strategie in un certo senso poco definite che dalla scala territoriale il più delle volte si riducono a programmi "partecipati" e condivisi dalla sola utenza finale.

Crediamo, al contrario, che un ragionamento a largo raggio, capace di coinvolgere l'isola portoricana (auspicabilmente in un futuro regime di indipendenza nazionale), in un rapporto di nuove relazioni culturali, commerciali e di scambio con gli altri stati del bacino Caraibico, e con quelli del vicino sud America (in particolare con Colombia, Venezuela e Messico), possa garantire, nel breve e lungo termine, rilevanti opportunità di sviluppo anche economico. Marco Canesi, professore di urbanistica alla Scuola di Architettura Civile del Politecnico di Milano, nei suoi recenti studi[2]sul ruolo chiave dei Paesi del Centro America e dei Caraibi nei futuri assetti produttivi mondiali, ha posto per primo importanti fondamenti in tal senso: «La configurazione geografica del subcontinente centroamericano e caraibico è contraddistinta da caratteri molto speciali: a sudovest, il tratto di territorio istmico che unisce il Nord America con il Sud America, a nordest, a ventaglio, le isole Antille e in mezzo, circondato dalle coste, il mare dei Caraibi. Tale assetto, molto simile a quello del Mediterraneo, offre una rilevante opportunità: il mare anziché essere una barriera fra Paesi rivieraschi, potrebbe essere il baricentro delle loro nuove relazioni economiche e sociali. In altri termini, il fronte delle coste caraibiche e il fronte opposto, quello delle coste centroamericane, avrebbero la possibilità di essere fra loro ben collegati purché vi fosse un adeguato sistema dei trasporti marittimi, ferroviari e aerei, con una intermodalità molto organizzata, in grado di minimizzare i costi e i tempi che le rotture di carico sempre implicano»[3].

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1 Andria. Pili, *Neoliberismo e colonialità a Puerto Rico*, in «Contropiano», 30 luglio 2017 (http://contropiano.org/documenti/2017/07/30/neoliberismo-colonialita-puerto-rico-094352).

2 [2]Marco Canesi, *Egemonismo del capitale e autodeterminazione dei popoli. Una proposta per il Centro America e i Caraibi*, Franco Angeli, Milano, 2015; Marco Canesi, *Una nuova transazione al socialismo. Il ruolo chiave di Cuba e del Centro America*, Franco Angeli, Milano, 2018.

3 [3] Marco Canesi, *Egemonismo del capitale e autodeterminazione dei popoli. Una proposta per il Centro America e i Caraibi*, Franco Angeli, Milano, 2015, p. 201.

Questa posizione – che rivendica per i contesti territoriali strutturati e meno strutturati di paesi dichiaratamente al Sud del mondo (e non solo per posizione geografica) l'appartenenza ad un «Mediterraneo allargato» –, trova riconoscibilità e argomentazione anche attraverso gli importanti contributi di ricerca e didattica promossi per fasi successive, dai primi anni duemila, dalla Scuola di Architettura Civile del Politecnico di Milano e successivamente, dal 2010 ad oggi, incrementati nelle esperienze di laboratorio e tesi di laurea magistrale anche in sinergia con il Dipartimento di Architettura e Design del Politecnico di Torino.

Una prima fase della ricerca applicata – coordinata da Guido Canella, con Marco Canesi e Enrico Bordogna –, ha teso a valutare in termini di benefici e costi e di compatibilità insediativa e ambientale il fenomeno dell'immigrazione dall'area mediterranea attraverso occasioni di formazione e occupazione temporanea (alternativa agli attuali centri di accoglienza), in grado di favorire l'assimilazione qualificata di forza-lavoro nelle nazioni europee di destinazione ed, eventualmente, il ritorno ai contesti di origine, promuovendo così più adeguate suscettibilità di integrazione culturale e economica e, in prospettiva, di una vera cooperazione tra i paesi rivieraschi per la costruzione di un'area integrata del Mediterraneo.

Una seconda fase della proposta – coordinata da Enrico Bordogna, Marco Canesi, Gentucca Canella e Elvio Manganaro –, ha visto la costruzione di una serie di progetti e tesi di laurea fondati sull'idea che nella nuova geografia delle rotte marittime mondiali affermatasi all'inizio del Duemila (le cosiddette *rotte pendulum*, che da Oriente attraverso il canale di Suez passano per il Mediterraneo per andare nei porti del Nordeuropa o proseguire per New York), i porti del Sud, il Mezzogiorno d'Italia e le regioni del nord Africa, in virtù della loro posizione baricentrica, potessero drenare almeno una quota parte del traffico transitante nel Mediterraneo.

Il nuovo sistema portuale meridionale (con capofila i porti di Taranto, Gioia Tauro e Crotone in sinergia con quelli di Genova e Trieste), attrezzando i relativi "retroporti" con strutture per logistica, attività produttive, ricerca e formazione, potrebbe tuttora incrementare nuove strategiche lavorazioni e nuove filiere produttive. Inoltre la riconfigurazione del sistema del trasporto ferroviario e l'assetto degli insediamenti, garantirebbe alla nuova offerta produttiva adeguata accessibilità.

Un approfondimento determinante ha riguardato i caratteri peculiari che riveste la questione energetica nella particolare realtà insediativa meridionale e dei territori di costa del Nord Africa e dell'Africa orientale –, non tanto per le differenti opzioni tra le diverse fonti rinnovabili, quanto per le relazioni e le ricadute strategiche che tali scelte sono destinate a indurre nelle politiche di sviluppo economico e territoriale e nelle stesse opzioni architettonico-progettuali (nelle quali, alla costruzione di centrali solari termodinamiche in zone desertiche, corrispondano interventi di fondazione per attività di ricerca, formazione, vita associata), in un disegno di cooperazione tra paesi della fascia del sole e paesi della fascia della tecnologia.

Per concludere queste brevi note, possiamo quindi affermare che se la politica degli interventi nel nostro Meridione sembra aver rinunciato a una strategia unitaria, è oltremodo auspicabile che in un immediato futuro il progetto di architettura, anche su un terreno più strettamente compositivo, torni ad assumere, in contesti forse non ancora contaminati dalla corsa all'Occidente, un ruolo decisivo nella trasformazione degli assetti insediativi contribuendo alla costruzione di una comune civiltà espressiva finalizzata a un nuovo sviluppo dei Paesi a Sud del mondo.

Così se in più occasioni[4] si è cercato di evidenziare l'opportunità di stabilire feconde comparazioni, per analogia e differenza, tra soluzioni già sperimentate in positivo da culture

4 Gentucca Canella, *Verso un altro Mediterraneo. Architettura come strategia per il Sud del mondo*, Nexo, 2016 e *Architettura di retroguardia e laboratorio d'oltremare. Per una Scuola nazionale di architettura all'Asmara*, Clup, 2006; Enrico Bordogna, Gentucca Canella, *Progetti di sviluppo comunitario in un'ipotesi macrourbanistica per il Sud Italia e l'area del Mediterraneo*, in: *Comunità /Architettura - Community/Architecture*, E. Prandi (a cura di), Festival Architettura Edizioni, 2010.

"altre", periferiche, mediterranee, d'oltremare, allo stesso modo sembra quanto mai efficace, per la situazione portoricana, il riferimento alla roosveltiana "Tennessee Valley Autority (TVA)" dei primi anni Trenta del Novecento, esperimento "democratico" di pianificazione dei suoli e controllo ambientale dell'emergenza, ma anche straordinario esempio – attraverso la fondazione di un sistema coordinato di centrali elettriche e di dighe (stazioni di promozione del progresso tecnologico, centri di cultura e nuclei temporanei di decentramento insediativo), di una spettacolarizzazione ingegneristica della stessa infrastruttura.

Nello specifico, per l'isola di Puerto Rico, il sistema produttivo, oggi in grave dissesto, potrebbe trovare una sua riconfigurazione anche attraverso la ricostruzione e l'incremento del sistema delle infrastrutture, recuperando in primo luogo il tracciato del preesistente anello ferroviario che collegava storicamente le aree agricole e l'industria manifatturiera con le città dell'interno e i porti sulla costa.

In questo nuovo quadro il porto di Ponce, sulla costa sudorientale dell'isola, adeguatamente potenziato per le merci diverrebbe uno dei terminali della quarta tratta del grande anello infrastrutturale (acqua-ferro) previsto, per il Centro America e i Caraibi, nella proposta di Marco Canesi del 2015: «[…] *infine, una quarta tratta su acqua tra il Venezuela e Cuba, ovvero da Caracas a Santiago di Cuba, passando da Ponce e da Santo Domingo, rispettivamente sulla costa sudorientale del Porto Rico e della Repubblica Dominicana*»[5].

In questa riorganizzazione territoriale, una azione di coerente ridestinazione, non solo conservativa, degli antichi mulini per la produzione e lavorazione della canna da zucchero in qualità di capisaldi-stazioni dell'intero nuovo circuito di collegamento, potrebbe contribuire a preservarne il valore produttivo e la memoria figurativa, consentendo una significativa riconoscibilità dell'edificio pubblico anche nella ricostruzione dell'emergenza.

Puerto Rico 2017: dal mancato aggiornamento infrastrutturale programmato all'"Anemia Urbana"

Questo saggio raccoglie alcune osservazioni elaborate a partire dal workshop *Puerto Rico Re_Start* svoltosi a San Juan nel marzo 2018, promosso dalla University of Florida[6] e dalla University of Puerto Rico. L'iniziativa, condotta secondo il procedimento di un International Project+Research Workshop, ha avviato una ricerca internazionale – coinvolgendo studiosi italiani, spagnoli, statunitensi, africani – sui gravi disastri ambientali, infrastrutturali e materiali occorsi sull'isola di Puerto Rico a seguito di due eccezionali catastrofi ambientali, in particolare degli uragani Irma e Maria (2017). Gli importanti danni economici causati sull'isola hanno amplificato la situazione economica esistente che negli ultimi anni non era risultata particolarmente stabile: più di metà della popolazione vive di sussidi statali e, da più di qualche decennio, Puerto Rico non è più sede di un comparto industriale significativamente trainante, come lo era stato nella prima metà del secolo scorso, fatta eccezione per l'industria farmaceutica ed il turismo, nonostante la competizione, soprattutto per quest'ultimo, con le ben più forti isole dell'arcipelago caraibico. Così come con altre località del sud degli Stati Uniti d'America di cui, dal 2012, dopo un referendum popolare, Puerto Rico è diventato il 51esimo stato. Il reddito medio annuo è di 21 mila dollari, per una popolazione di circa 360.000 abitanti che occupa 190 mila abitazioni, di cui 147 mila stabilmente e 40 mila saltuariamente. I disastrosi uragani hanno reso necessari i soccorsi per gli abitanti insediati nelle aree collinari più interne coperte da una fitta vegetazione tropicale (Cordillera Central) e per quelli insediati lungo le aree costiere, danneggiate da allagamenti ed inondamenti, causati tanto dall'impatto diretto dell'uragano quanto dall'innalzamento del livello dei canali d'acqua nei tratti più interni generato dalla pressione dell'inondazione. Il ripristino parziale di molte abitazioni, dei servizi e delle infrastrutture collettive primarie ha richiesto circa cinque mesi. Nel quadro del programma del workshop *Puerto Rico Restart* le

5 Marco Canesi, *Egemonismo del capitale e autodeterminazione dei popoli. Una proposta per il Centro America e i Caraibi*, Franco Angeli, Milano, 2015, p. 202.

6 Center for Hydrogenerated Urbanism, University of Florida, directed by Martha Kohen and Nancy Clark. http://puertoricorestart.org

due autrici del presente saggio hanno coordinato uno dei cinque gruppi di lavoro predisposti dagli organizzatori, in particolare il Laboratorio "Untapped economic development opportunities" che, nell'arco di tempo di una settimana, come è consuetudine per questo tipo di sperimentazioni sul campo, avrebbe dovuto sviluppare alcune idee di massima a partire dai sopralluoghi svolti e dalle sollecitazioni teoriche, concettuali e tecniche apprese attraverso le relazioni tenute al convegno parallelo al workshop da esperti, politici e tecnici locali, oltre che dall'approfondimento della letteratura già disponibile.

Il primo passo è stato, quindi, cercare di approfondire lo stato dell'arte sulle infrastrutture e sui sistemi di trasporto attraverso colloqui con i docenti della University of Florida e della University of Puerto Rico, la consultazione di documenti e pubblicazioni reperibili nella biblioteca locale e presso l'Archivio di Stato, dove il gruppo di lavoro è stato accolto generosamente. Fondamentale, inoltre, è stata la ricerca cartografica[7] prevalentemente dedotta dai siti web ufficiali degli uffici tecnici comunali di San Juan, opportunamente segnalata dagli studenti di Puerto Rico, altrimenti difficilmente raggiungibile. Tra l'altro, è stato determinante raccogliere dati attraverso colloqui organizzati dalle istituzioni ospitanti sulle linee di sviluppo più o meno recenti definite dalla municipalità e sulle politiche attuate e non attuate negli ultimi decenni, che hanno segnato il volto e il destino dell'isola. Un'interessante scoperta è stato il *Regional plan for the San Juan metropolitan area* [fig.1a] redatto dall'Oficina del Gobernador Junta de Pianification con la consulenza di Eduardo Barañano – urbanista noto per i suoi contributi sulla ricostruzione di Londra –, pubblicato nel 1956, al quale ha fatto seguito il *San Juan City Edges Plan* del 1975 [fig.1b] promosso sempre dalla Junta de Planificacion, che comprendeva uno studio per il trasporto ciclabile e uno per la realizzazione di un sistema di giardini e dunque a favore della pedonalizzazione di alcuni percorsi [fig.1c]. Questi piani e programmi, o, comunque, le intenzioni politiche, economiche, sociali che sottendono il loro schema generale, sono in parte confluiti nel *Plan Metropolinano de Transportacion San Juan 2030* redatto nel 2004 [fig.1d] con gli opportuni aggiornamenti. Parallelamente alla pianificazione comunale, nel corso dell'ultimo mezzo secolo, sono stati redatti una serie di Action Plan da studi internazionali di progettazione e da architetti locali – la classe dirigente dell'isola, per tradizione, studia e stabilisce importanti connessioni professionali con il mondo professionale ed accademico degli USA –, su commissione di imprenditori locali e stranieri, finalizzati allo sviluppo turistico dell'isola. Questi progetti, per quanto è stato possibile osservare, evidenziano una parziale attenzione alle tradizioni insediative locali e alla possibilità di trovare una risposta adeguata alla domanda abitativa ed insediativa contemporanea che tenga conto della complessità della coesistenza dei modelli culturali ed insediativi ispanici ed americani. Sebbene sembrerebbe che l'abitudine agli standard urbani americani sia diventata una condizione irrinunciabile per la maggior parte dei portoricani. Nel corso del workshop, dopo una rapida indagine sono emerse delle profonde discontinuità fra la realizzazione delle infrastrutture storiche e quelle recenti ed alcune gravi disfunzioni sull'assetto ed il funzionamento di quelle attuali. A questi problemi ha fatto seguito, dagli anni Sessanta in poi, l'incontrollata realizzazione, su quasi tutta l'isola, di tessuti insediativi per nulla compatti ed a bassa densità, che richiedono l'uso dell'automobile, determinando l'affermazione di un modello abitativo di cui i Portoricani sembrano non riuscire più a fare a meno. "Uber" è divenuto il mezzo di trasporto di assoluto successo sull'isola: c'è anche chi decide di non possedere l'automobile, poiché riesce a coprire il costo dei propri trasporti utilizzando Uber e le auto in affitto, per un costo totale dei propri spostamenti familiari di circa 2000 euro all'anno.

Terminata la fase coloniale spagnola con la guerra Ispano-Americana del 1898, si realizzarono sull'isola i primi sistemi di trasporto su ferro, completati entro gli anni Venti del ventesimo secolo. Infatti da allora, quando iniziò la fase di "americanizzazione" – essendo diventa una "U.S. possession" – fino a metà degli anni Cinquanta, l'isola divenne una sede strategica per la marina militare statunitense e per la produzione di canna da zucchero, con una breve ripresa all'inizio degli anni Novanta. L'anello ferroviario riportato nella mappa del 1924 [fig.2a], conservata presso la Library of Congress, documenta, pertanto, la presenza di un sistema infrastrutturale su ferro che costeggiava dall'interno tutta l'isola lungo l'intero perimetro ad una distanza dalla costa di circa metà miglio. Nella zona settentrionale, verso

7 Plan de Usos de Terrenos, http://jp.pr.gov/Planes/Plan-de-Usos-de-Terrenos

San Juan, dall'anello che corre lungo tutta l'isola, si staccava un ramo di binari che connette l'insediamento storico di Santurce all'insediamento coloniale dell'Isla Grande ed al resto dell'isola. La vicenda della dismissione dell'industria della canna da zucchero di Puerto Rico, secondo alcuni studiosi, è quasi del tutto causata dalle *policy* introdotte dal governo locale e americano. Un interessante studio intitolato *What Ever Happened to the Puerto Rican Sugar Manufacturing Industry*?[8], proposto dalla Federal Reserve Bank of Minneapolis Research Department Staff Report 477, del 2012, tenta di spiegare il fallimento di quella che tra gli anni Quaranta e Sessanta era considerata internazionalmente un'industria record, soprattutto per la capacità produttiva, – il picco di maggiore produzione è stato raggiunto nel 1952. Le foto storiche di quegli anni, infatti, mostrano San Juan come una cittadina coloniale vivace e dal tessuto urbano compatto [fig.2b]. L'industria della canna da zucchero della Louisiana, secondo alcuni studiosi, è la più confrontabile a quella di Puerto Rico per la capacità produttiva, ma richiedeva costi di gestione maggiori. Da alcuni studi emerge che a Puerto Rico, fra gli anni Quaranta e Sessanta, non fu introdotto alcun tipo di meccanizzazione nel processo produttivo, diversamente da quanto è avvenuto per le aziende della Louisiana. Un ulteriore significativo elemento per il decadimento è dato dalla dimensione delle "farm"– estese circa 40 a 25 acri – e dal sistema di organizzazione produttivo: «With its farms shrinking, the land productivity record of the Puerto Rican industry was dismal from the mid-1930s to the mid-1960s. In the mid-1930s, land productivity in Puerto Rico was roughly 2.25 times greater than in Louisiana. By the mid-1960s, it was less than 1.5 times greater. Relative to Louisiana, then, Puerto Rican land productivity fell by nearly a third over the period. [...] A small bit of the industry continued to produce after the mid-1960s, but this was as a result of government subsidy. It finally nationalized the industry in 1973[9]. [...] In 1974, the U.S. sugar cartel ended. There were no longer quotas on domestic production, though quotas on foreign producers remained. Hence, domestic producers, including those in Puerto Rico, are not limited in what they can produce and sell on the mainland. In principle, the Puerto Rican sugar industry can come back at any time. It was a very productive place to manufacture sugar before the 1930s (relative to, say, Louisiana, which has a big industry today), so why not today? Presumably, any potential investors expect the same treatment the industry received in the 1940s, described below, and stay away»[10].

A partire dagli anni Sessanta, quindi, lo sviluppo infrastrutturale realizzato con fondi pubblici ha avuto tempi lenti e risultati insufficienti. Un caso emblematico è sopraelevata "San Juan Tren Urbano", che ricalca il tracciato "ad uncino" [fig. 2c] del vecchio tratto della linea ferroviaria che cento anni fa arrivava fino a Santurce, – quando la popolazione di San Juan e le aree abitate erano almeno quattro volte inferiori per estensione e popolosità rispetto a quelle attuali [fig. 2d] – ha avuto una gestazione lunghissima: la prima proposta è del 1967, ma non diviene ufficiale fino al 1989; l'approvazione dei fondi avviene nel 1993; la realizzazione inizia nonostante i deficit del budget; l'inaugurazione del tratto incompleto avviene nel 2004[11]. In particolare, il San Juan Tren Urbano, che viaggia in due sensi di marcia, è scarsamente connesso alle parti più popolose del tessuto urbano e dunque al resto della rete ferroviaria dell'isola. Soprattutto, il treno non è connesso con Ponce, il porto più importante, localizzato a sud. Dunque il San Juan Tren Urbano ha rappresentato un investimento molto importante, seppure sovra dimensionato e, certamente, sottoutilizzato.

Come sostengono gli abitanti locali, Puerto Rico, nel tempo, è sostanzialmente diventato "un enorme parcheggio". Questa affermazione sintetizza efficacemente ciò che è accaduto dal 1956 ad oggi: le *policy* locali e nazionali hanno favorito l'acquisto delle auto private – secondo quanto è accaduto nel resto degli USA, si pensi agli interventi coordinati e promossi da Robert Moses (1888-1981) nello stato di New York che hanno determinato la realizzazione di *highway* e di quartieri suburbani – e non hanno sostenuto interventi di infrastrutturazione

8 Benjamin Bridgman, Bureau of Economic Analysis Michael Maio University of Minnesota and Federal Reserve Bank of Minneapolis James A. Schmitz, Jr. Federal Reserve Bank of Minneapolis Arilton Teixeira FUCAPE, Brazil; Federal Reserve Bank of Minneapolis Research Department, *What Ever Happened to the Puerto Rican Sugar Manufacturing Industry,* Staff Report 477, December 2012. https://www.minneapolisfed.org/research/sr/sr477.pdf

9 . Ibidem, p. 3.

10 . Ibidem

11 . Metropolitana di San Juan, Puerto Rico; http://mapa-metro.com/it/puerto-rico/san-juan/san-juan-tren-urbano-mappa.htm

pubblica.

Va precisato, inoltre, che l'anello ferroviario parallelo alla linea di costa di Puerto Rico, lunga circa 580 km, è connesso a decine di piccoli porti ed ex stazioni di carico corrispondenti ad altrettanti (circa quindici) mulini per la lavorazione della canna da zucchero. Non tutti i mulini sono architetture di particolare qualità, ma sono manufatti che, complessivamente, immersi nel paesaggio rigoglioso che le avvolge, manifestano il potenziale di soggetti estetici[12], rafforzando le posizioni di una lunga tradizione di studi accademici che attribuisce alle "rovine" un valore "estetico". Oppure, ancora, ampliando il quadro dei riferimenti, il complesso dei mulini per la produzione della canna da zucchero [fig.2e] – vedi le aree in giallo [fig. 4 c-d] – sono un significativo caso di studio a scala territoriale nel quadro della più nobile tradizione americana del paesaggismo fondata da John Brinckerhoff Jackson, il quale interpretava le rovine come parte di un ciclo di autorigenerazione "Ruins provide the incentive for *restoration*, and for a *return* to origins. There has to be an interim of death or rejection before there can be renewal and reform"[13].

Infatti, rispetto al tema progettuale assegnatoci dagli organizzatori del workshop era ben chiaro fin da subito quale potesse essere il passaggio – nel caso specifico della linea ferroviaria dismessa ed ai resti dei mulini per la produzione della canna da zucchero – fra *death* (fine-morte) e *rejection* (scarto). Si trattava di riflettere ad un'idea di "renewal" e di "reform", di rinnovamento e di trasformazione, che rispondesse alla domanda posta dal Laboratorio *Untapped economic development opportunities,* avendo fra gli obiettivi principali la sostenibilità economica degli interventi. Ed essendo ben consapevoli del destino di moltissimi casi di linee infrastrutturali realizzate in epoca coloniale e abbandonate, ad esempio, in Etiopia ed in Sudan – chi scrive ha avuto modo di approfondire questi temi –, oggi difficilmente riattivabili se non con investimenti economici ingenti e forse per un assetto territoriale e politico profondamente diverso da quello del passato. Ciò riguarda anche il caso di Puerto Rico, a meno di importanti decisioni gestite a livello centrale. Quale futuro sostenibile, dunque, si può preconizzare per un sistema infrastrutturale e produttivo in abbandono come quello della linea nazionale ferroviaria di Puerto Rico degli anni Venti? La cui estensione (circa 400 km) supera in lunghezza quasi tre volte l'estensione della Ruhr Valley tedesca (ex regione mineraria), che si estende lungo il Reno per circa 100 km – sebbene più estesa in superficie e più densamente popolata e che è divenuto un caso di studio rilevante dai primi anni Novanta. Quello lungo la Ruhr è considerato un programma di successo, ed è considerato da molti osservatori un significativo esempio di ristrutturazione territoriale, forse difficilmente replicabile, prodotto tipico della concezione culturale urbana post-moderna e della determinazione politica e culturale di chi lo ha ideato e realizzato. Quindi, rispetto al caso Ruhr, sembrerebbe che l'approccio tradizionale proposto nella ricerca *Puerto Rican Sugar Mill restoration. Restoration of the Steam Powered Sugar Mill at the Hacienda La Esperanza*[14] per i mulini abbandonati di Puerto Rico, sia un tipo di intervento per lo più confrontabile con quello delle decine di musei frequentati da migliaia di persone l'anno in centri abitati da milioni di persone, e quindi poco sostenibile (soprattutto economicamente). E, dunque, poco credibile. Nel caso di Puerto Rico emergono i limiti economici e politici dell'operazione in atto: *renewal after death.* La lezione presentata durante il workshop da Edwin Melandez, Director of the Center for Puerto Rican Studies all'Hunter College, ha riferito molto chiaramente di una "devasted economy" dal momento che "GNP is expected to shrink by 11,2 percent; $90 billion in damages $21 billion in insurance claims; 100,000 homes damaged; 80% percent of corps destroyed". Inoltre, l'economista portoricano evidenzia il problema dell'esodo e dello spopolamento dell'isola "over 135,000 outmigration six months after the storm; potential loss of up to 470,355 residents of 14% of pop. by 2019" e riporta le proiezioni Lyman Stone che prevedono una riduzione della popolazione, dopo cinque anni

12 Vedi *il lavoro di accademici come* Erika Naginski nel seminario tenuto ad Harvard dal titolo *The Ruin Aesthetic: Episodes in the History of Architectural Idea*.

13 John Brinckerhoff Jackson, *The Necessity for Ruins: And Other Topics*, University of Massachussets, (ed. 1980).

14 Puerto Rican Sugar Mill restoration. Restoration of the Steam Powered Sugar Mill at the Hacienda La Esperanza. Report submitted to the faculty of Worcester Polytechnic Institute 2013. https://web.wpi.edu/Pubs/E-project/Available/E-project-121713-121628/unrestricted/Puerto_Rican_Mill_Restoration.pdf

dall'uragano Maria, del 19.4% dunque di circa 587,943 abitanti. In sostanza, dopo gli uragani Irma e Maria, il 40 % dei portoricani è emigrato negli stati uniti d'America, prevalentemente in Florida, Texas, New York, Chicago. Le azioni che il governo federale ha incluso nella propria agenda riguardano: "address the issue of informal housing, provide long-term medic aid funding, remove regulatory burnedns for cargo, full extension of EITC and CTC".

Queste informazioni confermano numericamente la metafora utilizzata da Lucio Barbera[15] nell'intervento di chiusura del workshop *Puerto Rico Re_Start* (2018): l'isola di Puerto Rico è un insediamento affetto da "Anemia Urbana"[16]. Per rigenerare il quale, aggiungiamo dopo questo breve approfondimento, non può soltanto essere necessario riattivare l'"apparato scheletrico", continuando con la metafora fisiologica. Finita l'epoca delle piantagioni di canna da zucchero (localizzati lungo le coste) e di quelle di caffè (piantato sulle colline), Puerto Rico ha attraversato una fase di discreto successo con l'industria del farmaco e delle biotecnologie (circa l'8% della produzione degli USA), soprattutto con il contributo degli incentivi statali. Ma il mancato e programmato aggiornamento infrastrutturale moderno ha contribuito a segnare fortemente il destino di quest'isola, e la qualità di vita che degli abitanti, che sono cittadini americani, ma non votano per l'elezione del presidente degli Stati Uniti d'America.

È singolare osservare che un'altra isola dell'arcipelago Caraibico, Jamaica – confrontabile con Puerto Rico per storia e dimensioni –, oggi, abbia un sistema infrastrutturale pubblico aggiornato, efficiente, impostato sulla traccia "storica" dei trasporti su ferro che attraversano l'isola lungo una sorta di "spina infrastrutturale". Lungo lo stesso percorso, circa un secolo fa, la rete di trasporti collegava i porti e le città principali, sia alle piantagioni della canna da zucchero che alle miniere di bauxite, localizzate nella parte interna dell'isola [fig.3 a-b]. Osservando la mappa mondiale che indica le località storicamente interessate alla coltivazione della canna da zucchero, risultano evidenti molti luoghi importanti, la cui attività produttiva odierna è ancora attiva (Brasile, Africa Occidentale e sub Sahariana, Sud Africa e Australia), le cui industrie sono diventate più importanti con la graduale decadenza del sistema di produzione caraibico [fig. 2c]. L'attuale sistema infrastrutturale di Brisbane, ad esempio nel Queensland, segue quasi interamente lo schema dell'insediamento infrastrutturale storico [fig.4 a-b].

Occorre, inoltre, segnalare il caso di Singapore un'ex isola coloniale dal perimetro di quasi 170 km2, considerata oggi uno dei casi esemplari dal punto di vista della mobilità sostenibile, sede di investimenti e della finanza internazionale: è difficile stabilire paralleli fra il nostro caso di studio e Singapore, soprattutto perché diversi osservatori sostengono che il futuro dell'economia mondiale si svolgerà e si è già spostato nello Strait of Malacca. Ma questo confronto, forse, conferma il destino incerto dell'isola di Puerto Rico.

Tornando nei Caraibi, possiamo evidenziare che anche sull'isola di Cuba le infrastrutture sono disposte nella parte centrale dell'isola, e la percorrono assecondandone la morfologia, stretta e lunga, e seguono l'andamento dei vecchi binari. Tra l'altro, Cuba sembrerebbe avere risolto in modo virtuoso l'approvvigionamento energetico trasformando in energia la biomassa fornita dalla canna da zucchero e producendo, quindi, l'86% dell'energia da fonte rinnovabile prodotta su tutta l'isola.[17]

Il futuro di Puerto Rico appare, dunque, assai incerto, e non soltanto per il rischio ecologico degli uragani e per il mancato decollo delle attività produttive e degli investimenti che hanno tentato di sostituire il caso economico di maggior successo, cioè la produzione di canna da zucchero, fra i primi anni Venti e gli anni Sessanta. La nostra proposta inizia segnalando l'indispensabile necessità, non immediata da attuare, di integrare gli attuali sistemi di infrastrutturazione locale e quelli che percorrono l'intera isola: essi, insieme, necessiterebbero

15 Lucio Barbera, chairholder dell UNESCO Chair in Sustainable Urban Quality and Urban Culture, notably in Africa che han preso parte con docenti e studenti italiani al workshop Puerto Rico Re_Start.

16 Vedi Lucio Barbera's Twitt #urbananemia: "human settlement physically and functionally appears to be still in a good state but the demographic, social, economic and cultural resources are in a continuous silent decrease. The first symptoms of URBAN ANEMIA is the necrosis of marginal settlements" Unesco; https://twitter.com/hashtag/urbananemia?src=hash

17 Canna da zucchero: a Cuba produce l'86% dell'energia green; http://www.rinnovabili.it/energia/biomassa/canna-da-zucchero-cuba-rinnovabili-654/

di un radicale ripensamento a supporto di insediamenti sempre meno abitati [fig.4 c-d][18].

Ulteriori testi, rapporti e siti consultati

César, J. A. (2006). *Puerto Rico in the American Century: A History Since 1898*, University of North Carolina Press.
Castillo, C. (2007). *Proposal for the Conceptual Design of the Steam Generation System for Hacienda La Esperanza at Manatí, Puerto Rico: Alpha Engineering Group*.
Jo Thomas, Puerto Rico's Agricultural Woes Reflect Dangers of Rapid Growth, New York Times, 17 febbraio, 1981; https://www.nytimes.com/1981/02/17/us/puerto-rico-s-agricultural-woes-reflect-dangers-of-rapid-growth.html.
Puerto Rican Sugar Mill restoration. Restoration of the Steam Powered Sugar Mill at the Hacienda La Esperanza. Report submitted to the faculty of Worcester Polytechnic Institute 2013.

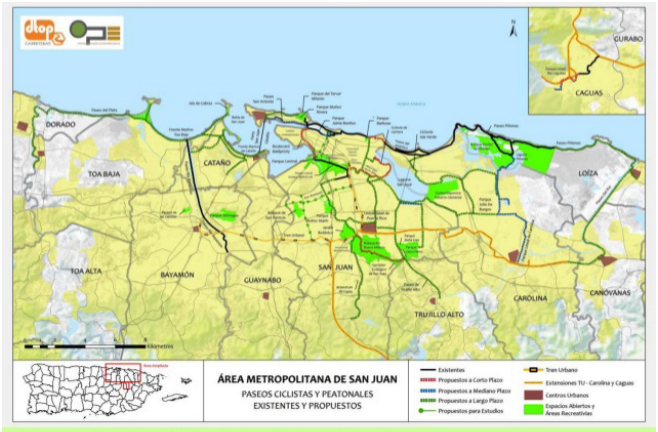
18 Elaborazioni dalla Tesi di Laurea di Claudia Miconi e Rosa La Brocca, 2018-2019.

Figure 1a, 1b, 1c, 1d

1246

1975 San Juan Bicycle Transportation Study
Departamento de Transportación y Obras Públicas
Preparado por Etienne Dusart
Plan a 10 años para la construcción de ciclovías en el Área Metropolitana de San Juan

1991 Jardín de Puerto Rico
Fideicomiso de Parques Nacionales
Parque Lineal para conectar los principales parques del Municipio de San Juan



2004 Plan Metropolitano de Transportación San Juan 2030
Propone una Red de Paseos Peatonales y Ciclistas o Parques Lineales para conectar los recursos naturales, bosques y espacios abiertos adyacentes a los cuerpos de agua y el Litoral Atlántico, así como las áreas recreativas y culturales con los centros urbanos.

Figure 2a, 2b, 2c, 2d, 2e

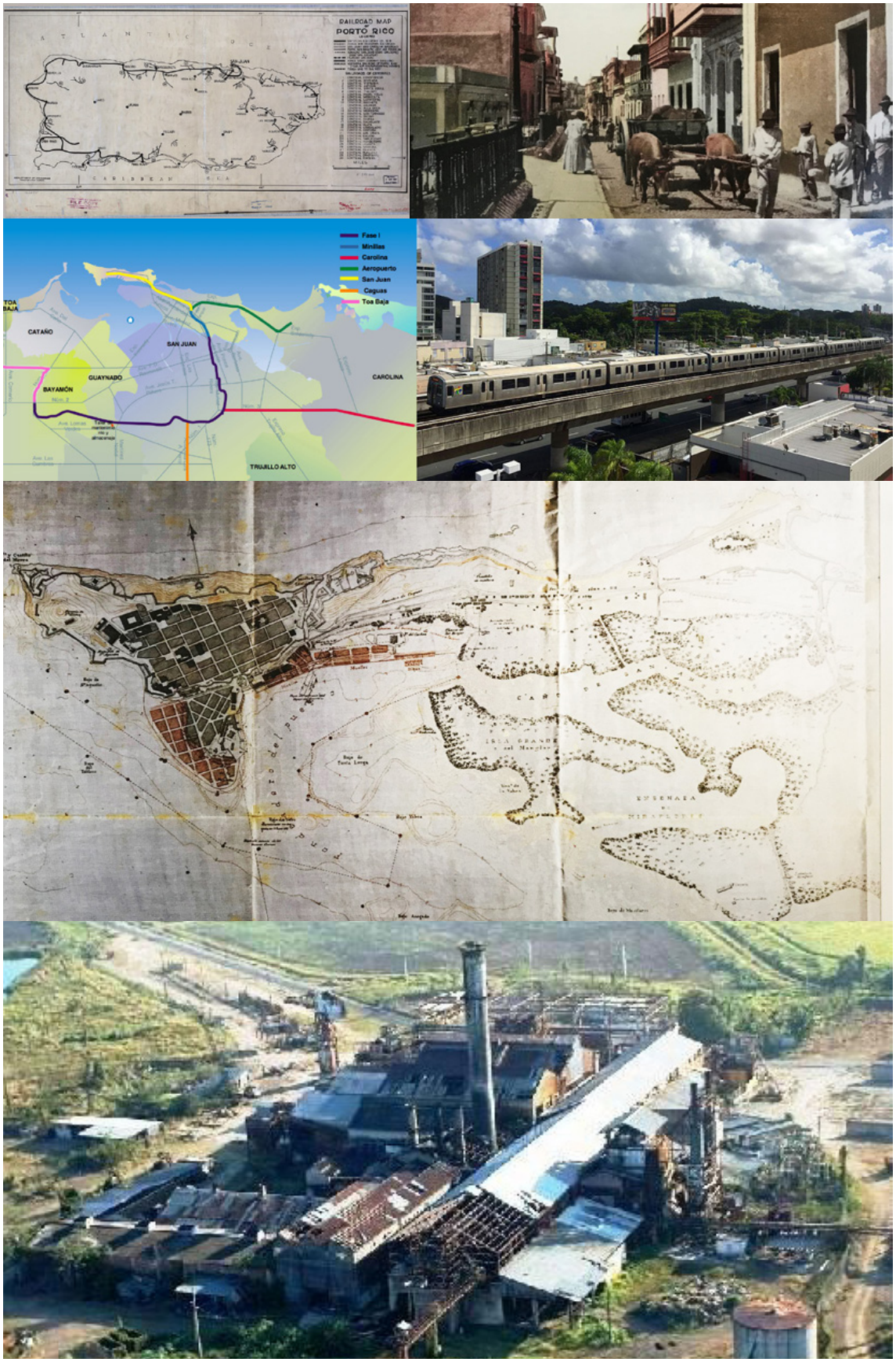


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Figure 3a-b, 3c

1248

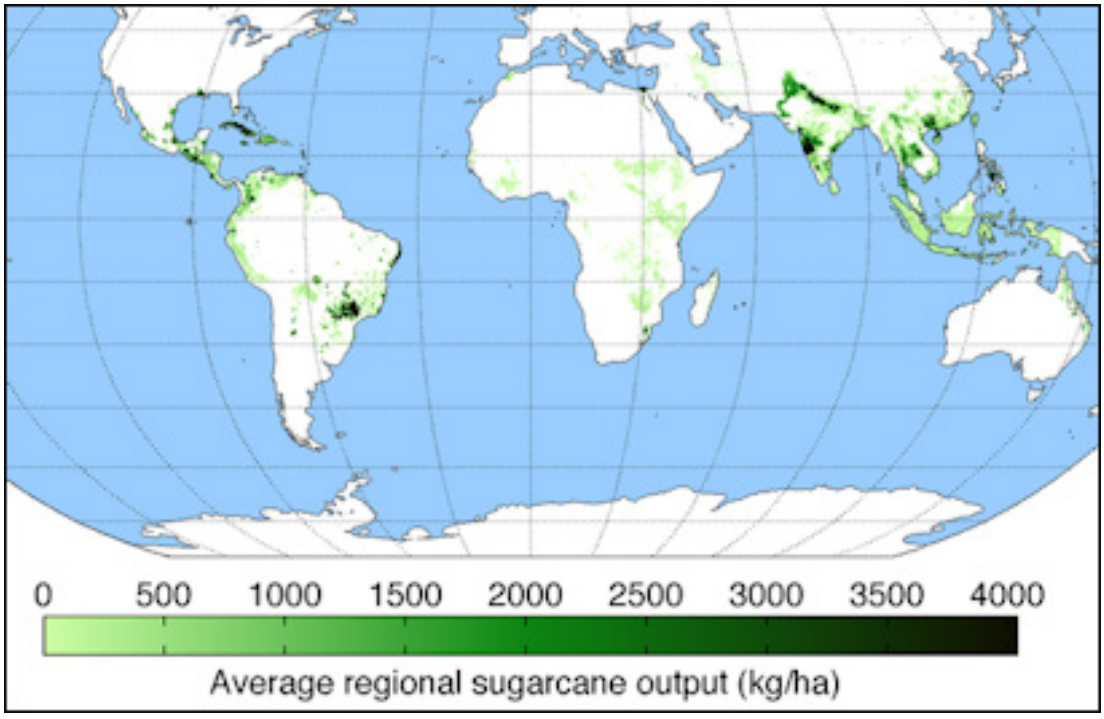
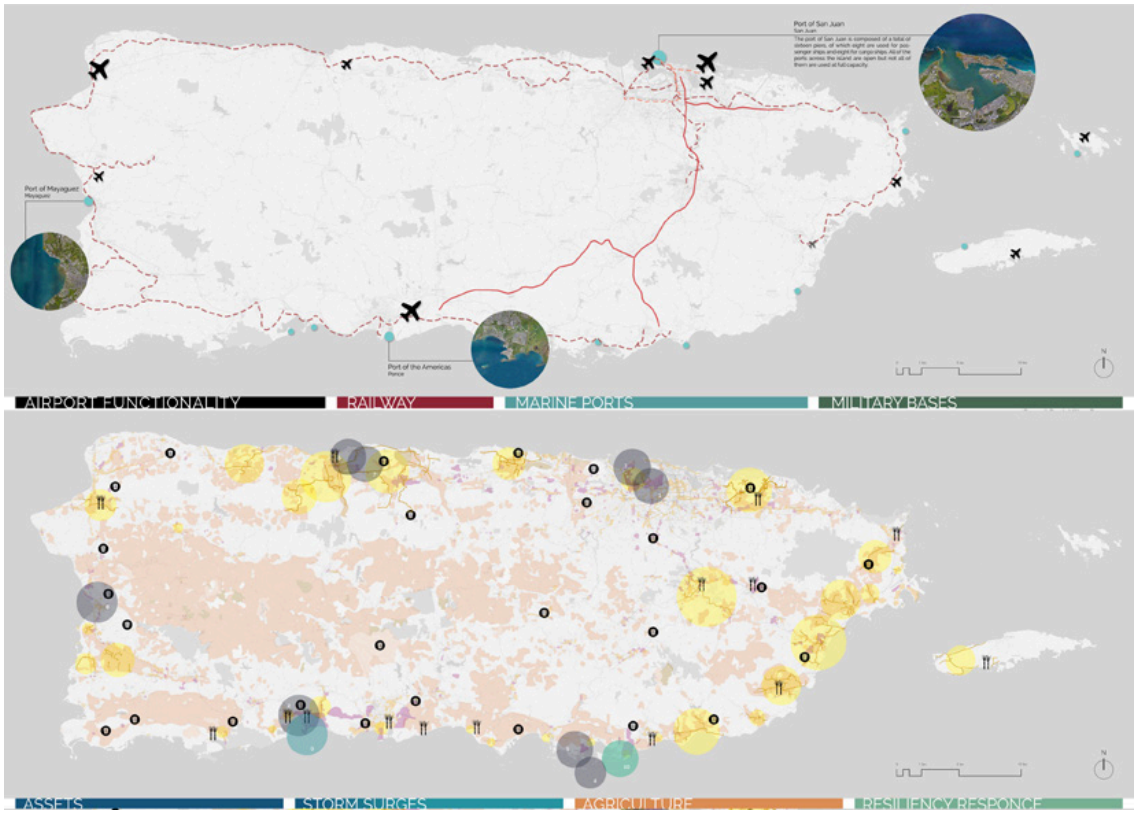


Figure 4a-b, 4c-d

1249



1250

Appunti per una lettura geometrico formale e tipologica della costruzione millenaria dei Sassi di Matera

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Keywords: *Matera, scavo, lamione, proporzioni auree, unità di vicinato*

La stratificazione millenaria del tipo a "lamione" nella città Patrimonio, offre una lettura geometrico-formale interna alle abitazioni che si rapporta, in pianta e in alzato, al rettangolo aureo e alle proporzioni armoniche. Nell'impianto urbano tra scavo e costruzione, si evidenziano possibili interpretazioni spaziali di geometrie che convergono, come le dita nel palmo della mano, nello spazio semi pubblico delle "unità di vicinato" e delle "camere urbane".

Le composizioni spaziali di questi manufatti in parti urbane costruite, rappresentano palinsesti di principi dell'esperienza umana dell'arte di edificare che collabora con la terra, con la forma, i materiali, l'orientamento.

L'uso sapiente del "tufo" e del tipo a "botte" con cui coprono semplici ambienti rettangolari sono in elevato geometrie di stratificazione, coperture complesse di giaciture e sovrapposizioni, di scorrimenti e rotazioni. L'accostamento di queste abitazioni alla forma del luogo esprime caratteri stabili che si fondano su regole costruttive maturate dalle pratiche e dagli avanzamenti continui, precisazioni tecniche di variazioni nella storia.

Le opportunità ambientali in continua collaborazione con le dimensioni delle abitazioni trovano nel tipo composizioni spaziali che rappresentano un quadro per una lettura insolita radicata e sostenibile.

Le parti urbane dei "vicinati" definiscono un paesaggio caratterizzato da prospettive inconsuete che accompagnano alla scoperta domestica delle "camere urbane". Le osservazioni degli spazi pubblici ricompongono forme dove i terrazzi sono il tetto delle altre case e queste poi sono strade e slarghi, "profferli" e attraversamenti.

L'analogia ad un grande organismo vivente, caratteri interni e geometrie di crescita, permette di forzare interpretazioni nella direzione evoluzionistica di questa opera umana: questo materiale organico si presenta come la città millenaria che conserva sapientemente una integrazione e simbiosi tra forme e tipi e modi di abitare.

Le architetture di scavo e di sottrazione sono un laboratorio per la ricerca di una idea di città densa di opportunità critiche che reinterpretiamo come principi per il progetto contemporaneo.

"E poiché la casa, il luogo fisico ove l'umanità dimora, è dell'umanità segno essenziale, la coerenza di queste abitazioni pietrose attraverso i millenni testimonia una incredibile continuità di essenza del cammino dell'uomo. Oggi le case voltate sono ancora al loro posto, prolungando sugli stretti ripiani della gravina lo spazio scavato della pietra. La loro essenza di casa riappare dietro la semplicità del loro impianto, gli spazi che esse circoscrivono, i "vicinati", suggeriscono una socialità evoluta, lo stesso sovrapporsi e l'appoggiarsi l'una all'altra dimostrano una solidarietà che l'uomo moderno farebbe bene a recuperare."

(Antonino Giuffrè, Caterina Carocci, Codice di pratica per la sicurezza e la conservazione dei Sassi di Matera, Edizioni la Bautta, Matera 1997. pag.21-22)

Come in ogni altro campo disciplinare, il problema della conoscenza in architettura, non si esaurisce nella semplice presa d'atto di dati percettivi o nella loro elaborazione a livello storico o attraverso strumentazioni se pur avanzate di misurazioni. Qualsiasi forma di conoscenza si rapporta sempre ad una struttura di pensiero teorica, che si articola nei contributi della storia e dell'osservazione profonda della realtà attraverso il pensiero scientifico e tecnico. Queste pratiche relazionali strettamente interconnesse tra loro possono disvelare conoscenza e far affiorare il rapporto con la realtà fisica dell'edificazione, dei luoghi costruiti, del paesaggio complesso della città antica di Matera.

Questo processo di conoscenza non sempre può garantire la verità di un pensiero critico univoco, privo di contraddizioni, ma risulta certamente necessario per garantire un presupposto di scientificità, di trasmissibilità, come la valutazione "comparativa" attraverso la "descrizione" e la "classificazione" che nel tempo ho svolto in rilievi e misurazioni su un numero alto di abitazioni ed ipogei nei Sassi di Matera e in altre città della Basilicata.

La conoscenza, se pur parziale, che il disegno offre in questi appunti, tenta di stabilire in che modo il costruito-scavato dell'arte di edificare si possa rapportare all'abitare come forma stabile dell'essere al mondo in un rapporto geometrico-formale e tipo-morfologico con la natura del luogo, la cultura e la tecnica, la società e l'economia delle risorse naturali.

La stratificazione millenaria del tipo "lamione" nella città Patrimonio, offre una lettura geometrico-formale interna alle abitazioni che si rapporta, in pianta e in alzato, al rettangolo aureo ed alle proporzioni armoniche. Nell'impianto urbano tra scavo e costruzione, si evidenziano possibili interpretazioni spaziali di geometrie che convergono, come le dita nel palmo della mano, nello spazio semi pubblico delle "unità di vicinato" e delle "camere urbane".

Le composizioni spaziali di questi manufatti in parti urbane definite, rappresentano palinsesti di principi dell'esperienza umana dell'arte di edificare che collabora con la terra, con la forma, i materiali, l'orientamento, la luce e l'acqua.

L'uso sapiente del "tufo", calcarenite di diversa granulometria, e del tipo a "botte" con cui gli uomini coprono semplici ambienti rettangolari sono geometrie di stratificazione, coperture complesse di giaciture e sovrapposizioni, di scorrimenti e rotazioni di generatrici di volta di un pensiero razionale.

L'accostamento di queste abitazioni alla forma del luogo esprime caratteri stabili che si fondano su regole costruttive maturate dalle pratiche e dagli avanzamenti continui di precisazioni tecniche con numerosissime variazioni. Così le condizioni ambientali, in continua collaborazione con le dimensioni delle abitazioni, trovano nel tipo lamione originali composizioni spaziali che rappresentano un nuovo quadro per una lettura insolita radicata e sostenibile.

"Il lamione, con la sua struttura ad ambiente unico dalle spesse pareti portanti sui lati lunghi che reggono la pesante volta e con l'unica illuminazione nell'apertura di accesso, ha una configurazione interna del tutto simile a quella di una grotta. (…) La tipologia del lamione, assemblata in vario modo, permette di realizzare case, i palazzi e imponenti complessi architettonici. Alcune strutture di vicinato si chiudono completamente e danno origine ad una casa a corte, che con il tempo si afferma come tipo abitativo autonomo."

(Pietro Laureano, Giardini di pietra. I Sassi di Matera e la civiltà mediterranea, Bollati Boringhieri, Torino 1993. pag. 114 e 118)

Le parti urbane dei "vicinati" definiscono un paesaggio caratterizzato da prospettive inconsuete che accompagnano alla scoperta domestica dello spazio pubblico delle

"camere urbane". Le osservazioni degli spazi pubblici ricompongono forme architettoniche dove i terrazzi sono il tetto delle altre case e queste poi sono strade e slarghi, "profferli" e attraversamenti.

L'analogia ad un grande organismo vivente, con caratteri interni e geometrie di crescita, permette di forzare interpretazioni nella direzione evoluzionistica di questa opera umana: questo materiale organico si presenta come la città millenaria che conserva sapientemente una integrazione tra forme e tipi e modi di abitare.

Questo comporre elementi semplici di abitazioni costruite a ridosso della gravina e delle sue grotte, la volta a botte celata dai fronti a timpani scalettati, rappresentano aggregazioni urbane razionali ed armoniche non soltanto all'intero di ciascun ambiente ma anche tra loro.

Le facciate costituite da semplici geometrie ci pongono di fronte ad una questione formale simile a quella della pianta e della sezione e questo comporsi, di case private con uniformi timpani scalettati ha prodotto una qualità "unica" dello spazio domestico verso lo spazio pubblico dell'unità di vicinato.

La questione allora è domandarsi se queste geometrie semplici sottese a questo Patrimonio dell'Umanità sono così profondamente connaturate al procedere delle cose nel tempo tanto da essere l'origine dell'armonia che governa un modello del mondo fin da Pitagora e Platone? Il cuore delle proporzioni e delle armonie che lega questi luoghi è proprio la stabilità e la permanenza della forma del tipo costruito e voltato a botte detto lamione?

Una attenta generalizzazione dei risultati applicati su un numero grande di esempi di piante rilevate descriverebbe la forma degli ambienti costruiti, prolungamenti degli ipogei, come una successione di semicilindri appoggiati su due pareti portanti che sono in pianta ed in alzato proporzioni del quadrato, la diagonale del quadrato, il rettangolo aureo. La stabilità della dimensione della larghezza delle abitazioni è tra i quattro ed i cinque metri e profonde tra i sei ed i nove, ci porta facilmente a comprendere i rapporti geometrici degli ambienti e del principio di generazione con i mutamenti a volte impercettibili di varianti dimensionali legate alle maestranze, al materiale cavato ed alle tecniche affinate nei secoli.

Le odierne interpretazioni dell'Architettura dei Sassi di Matera non sottolineano questo aspetto profondo interno alla forma, al tipo ed alla geometria sottesa dell'abitare in questo luogo, ma legano ad una sorta di "magia ancestrale" che unisce il tutto ad una "architettura senza architetti" che noi respingiamo coscientemente inquadrando le opere dell'uomo sempre soggette ad una sorta di pensiero progettuale, razionale ed estetico voluto e guidato dalla ragione e dall'esperienza della fatica del costruire.

Queste architetture di scavo e costruzione sono un laboratorio di ricerca sempre disponibile e che reinterpretiamo ancora come principi per il progetto contemporaneo.

Ad un primo sguardo sembra difficile riconoscere geometrie ed un ordine razionale nel tessuto denso dei Sassi. Lo spazio semipubblico, proprio del vicinato, fino alla più piccola unità abitativa, la cellula base, è proporzionato secondo gerarchie e dimensioni, desunte dall'esperienza della pratica costruttiva. La scelta dimensionale deriva dall'adozione della migliore soluzione sulla base dei caratteri costruttivi e delle capacità tecnologiche. La complessità delle stratificazioni, la composizione spaziale di questi manufatti in particolarissime parti urbane costruite, rappresentano un palinsesto di principi, forse non scritti, cristallizzati dall'esperienza umana dell'arte di edificare che collabora con la terra, con la forma e i materiali del luogo, con l'orientamento nello spazio e nel tempo anche delle stagioni. L'accostamento dei materiali con le proprietà intrinseche e la forma del luogo esprime come i caratteri semplici delle abitazioni innescano una qualità compositiva unica che si fonda su regole geometriche e costruttive maturate dagli avanzamenti continui di precisazioni tecniche nel corso della storia di questa città.

Le parti urbane dei vicinati e delle camere urbane poi, si presentano come un paesaggio geometrico caratterizzato da prospettive inconsuete che si ricompongono in geometrie sconosciute dove i terrazzi sono il tetto dell'altro che sconfinano con strade e slarghi, profferli e attraversamenti. La forma di queste parti urbane si apre a ventaglio, ricalca la forma delle dita di una mano che, a partire dal palmo, si sviluppano a raggiera.

L'unità abitativa è originata dalla costruzione di una struttura architettonica in continuità

con lo spazio scavato dei Sassi. Le proporzioni tra larghezza, lunghezza e altezza si mantengono costanti ed un'analisi più approfondita permette di riconoscere anche geometrie classiche. L'analisi stratificata e consolidata nei millenni del tipo lamione, offre una lettura geometrico formale interna, che si rapporta, in pianta e in alzato, al rettangolo aureo. Applicare il rettangolo aureo alla pianta non è una forzatura accademica, ma permette di precisare ipotesi per riconoscere i principi costruttivi di base, che seppure non avevano trovato nei secoli una codificazione trattatistica, erano già insiti nelle scelte costruttive degli abitanti e descritte puntigliosamente nel *Codice di pratica*. L'ambiente principale è caratterizzato da uno sviluppo prevalentemente in profondità, con un affaccio su strada di dimensioni relativamente ridotte, rispecchia nella gran parte dei casi le proporzioni codificate dalle geometrie interne: lo spazio è proporzionato anche in alzato e nella sezione. L'uso sapiente dei conci di tufo e del tipo costruttivo a botte copre semplici spazi rettangolari i cui rapporti geometrici sono nella gran parte dei casi quelli del rettangolo aureo e delle proporzioni armoniche. La singola unità viene aggregata in lunghezza ed in elevato, dando origine alle diverse declinazioni dell'unità abitativa. Le proporzioni dimensionali si mantengono costanti con un lato di circa 5 metri con pari altezza e diverse profondità.

Dal mondo dello scavo degli spazi ipogei a quello esterno costruito, dal semplice tipo insediato a parti urbane complesse con geometrie spaziali diversamente orientate, questo materiale organico si presenta come la città millenaria che conserva sapientemente una integrazione incredibile tra forme e modi di abitare la Terra con una adesione al luogo in modo assolutamente unico e raro.

Ciò che noi intuiamo essere sotteso alla percezione dell'architettura di queste costruzioni è pur sempre una qualche formalizzazione geometrica ed è indispensabile questa elaborazione per definirne un orizzonte di senso, ipotizzarne le condizioni di esistenza nella realtà con i suoi caratteri significativi nonché come sistema di relazioni. L'architettura costituisce una prima forma di rapporto tra il modo d'esistenza di questa realtà e quello del pensiero, tra la pratica della costruzione e quello del progetto come esperienza di disegno dello spazio guidato da geometrie nascoste.

Queste architetture dei Sassi per la loro stessa natura sembrano sfuggire ad ogni riduzione o descrizione di un pensiero razionale. Questi appunti sono le riflessioni critiche svolte in una "profondità" che soltanto una pratica continua delle frequentazioni "immersive" in questi spazi può dare, in queste opere dell'arte di costruire.

Questo insieme di informazioni tratte da innumerevoli disegni di rilievo, misurazioni e documentazioni, descrizioni grafiche e restituzioni, sezioni stratigrafiche dei luoghi urbani e delle morfologie dei siti, certamente non può garantire la "verità" del pensiero geometrico sotteso e questo richiede una formalizzazione, una codificazione, una sperimentazione grafico-critica più ampia. Per questo occorre fissare per così dire "dal di fuori" un carattere che si è storicamente definito costituendo come esito una elaborazione costruttiva e concettuale continua, stratificata in un continuo di piccolissime variazioni del tipo a lamione. Qualche formalizzazione geometrica di ciò che noi intuiamo essere l'architettura dei Sassi è indispensabile per proseguire un ragionamento, una elaborazione, per definire un orizzonte di senso, o almeno per ipotizzarne le condizioni di esistenza, individuandone e delimitandone i caratteri significativi come sistema di intuizioni.

Questa città complessa, fatta di stratificazioni millenarie, si pone nel suo insieme come una sorta di unità organica fatta di scavo e di edifici costruiti comprensibile anche sul piano di geometrie presenti nella nostra coscienza e conoscenza della realtà. Essa appare in una qualche forma descrivibile e valutabile soprattutto per la dimensione semplice dell'unità abitativa minima con cui nei secoli si è affinata nel tipo edilizio e nella morfologia delle composizioni spaziali.

Ed è attraverso una lettura contemporanea di parti di questo "corpo organico" che possiamo azzardare una definizione geometrico-formale di questa città dei Sassi.

Questo principio di avvicinamento potrebbe costituire una prima forma di rapporto tra il modo d'esistenza di questa realtà e quello del pensiero razionale che ha guidato nei secoli quel porsi del progetto come unica vera forma di controllo e di crescita. Certamente, credo di poter affermare che questa meravigliosa opera umana, concretamente costruita, non può essere assogettata ad un giudizio approssimativo di essere una "architettura senza

architetti", detta "troglodita".

In modo interno, autoriflessivo, introverso, avvicinarsi ad una possibile definizione è una azione rischiosa ad un tempo coraggiosa, una proposizione con la quale il pensiero interroga l'insieme materiale delle opere e quello potenziale dei progetti nascosti all'esperienza diretta, alla visione superficiale che lascia aperte tante questioni e domande. Abbiamo presentato e discusso pubblicamente questa ipotesi al *Metapontion 2018 (Pitagora: filosofia, arte e scienza. Armonia tra uomo, Natura e Tecnologia. Festival Internazionale della Magna Grecia)* per conferme e ulteriori approfondimenti e criteri di giudizio, per la la comprensione di questa opera d'arte che è Patrimonio dell'Umanità. Questa lettura della struttura costitutiva della città appare del tutto legittima e addirittura inequivocabile se dal punto di vista teorico e da quello critico e didattico si appoggia a molte affermazioni scientifiche proposte da Giuffrè e Carocci nel *Codice di pratica*:

"A partire dalle singole osservazioni si cominciò a generalizzare: si capì il rapporto tra la casa ed il pendìo, il rapporto tra la volta e il muro, tra la facciata e le pareti laterali. Si scoprì la regola con cui il muratore disponeva le pietre nell'erigere le pareti lapidee e come su di esse impostava la copertura curva. Si capì perché ogni nuova cellula veniva posta lì dove adesso la si vede e non altrove. Per quanto la struttura della casa sia semplice, essa contiene lati imprevedibili." (Op.cit. pag.23)

Questa architettura di pietra esiste nella forma dell'unicità tipo-morfologica conferita nella storia dagli uomini e riconosciuta fenomenologicamente tramite l'azione di edificare. L'uso ed i modi di esistenza dei rapporti tra natura e cultura, tra materiali e tecniche, tra lo spazio delle forme dell'abitare ed i caratteri del luogo, tra il valore della memoria e le condizioni di un progetto collettivo, dall'unità di vicinato alle camere urbane, è la vera ipotesi di lettura geometrico-formale delle case dei Sassi. Case elementari ben definite, riconoscibili e ripetute nel tessuto razionale ed organico dei pendii, costituiscono poi gli edifici complessi e pubblici dello spazio collettivo decisamente lontane dal considerarle abitazioni così dette "spontanee". La somiglianza tra le case e la discendenza da un tipo ideale, esisteva già al momento della costruzione, del suo progetto, perché l'attività edilizia faceva riferimento ad una visione progettuale elaborata dalla collettività, dalle sue maestranze dotate di pratiche antiche e di esperienze che appartenevano alla cultura locale ma anche a quelle di una più ampia che legava la città di Matera alla cultura del Mediterraneo.

"Dal Medioevo all'Età moderna abbondano le descrizioni piene di ammirazione di questo organismo urbano complesso, che attraverso l'assemblaggio dei tipi di base realizza un'architettura della pietra, dell'acqua e del clima. Nel 1595 il cronista Eustachio Verricelli descrive la città come dotata di un'aria salubre e abitata da uomini ingegnosi." (Pietro Laureano, Op. Cit. pag.152)

L'architettura, tramite le scelte e gli strumenti che sono specifici, ha compiuto sul piano del pensiero progettuale rapporti di corrispondenza tra l'abitare, il tipo e la forma le cui modalità di esistenza sono analizzabili e danno luogo ad una conoscenza trasmissibile per la didattica e la scienza.

Il risiedere e l'abitare, oltre a definire uno stato, un modo d'essere, implicano una capacità ed una azione costruttiva dotata di ragione ed è per questo motivo la coincidenza fra l'abitare ed il saper costruire come sapiente necessità, nel suo assetto fisico, nei suoi caratteri, perché realizza l'idea di abitare e rende quindi possibile definirlo culturalmente edificandolo, usandolo.

La struttura geometrica sottesa a questi manufatti è certamente forte e l'immagine che ne deriva dimostra ampiamente una esperienza costruttiva che rimane interna al pensiero scientifico non scisso dalla forma e dal rapporto insediativo che il genere umano ha istituito con questo luogo.

L'architettura come punto di vista geometrico, come noi vogliamo qui provvisoriamente intendere, si legittima nella misura in cui dispone di un fondamento teorico, di una consolidata tradizione storica, di un verificabile sistema di regole che ne costituiscono il campo d'azione.

Nella sua formulazione più semplice e schematica, il concetto di logica geometrica, di matrice sottesa è sostanzialmente legato a quello di verità razionale, alla dimostrazione del carattere necessario di determinati rapporti, alla possibilità di produrre e verificare una serie di proposizioni. La logica di questa ipotesi di interpretazione geometrico-formale

e tipologica dei Sassi è una tecnica di indagine per conseguire valori di certezze, verità interne all'architettura, ed è anche l'unico modo di esistenza di un campo di validazione della forma architettonica che nei secoli questo straordinario paesaggio urbano ha assunto.

Figure 1. *Aerofotogrammetria dei Sassi di Matera con evidenza l'ambito del Museo Demoetnoantropologico*, L'abitato dei SASSI, tra geometrie, materiali, tecniche e armonia con la terra. Ad un primo sguardo sembra difficile riconoscere geometrie e ordine razionale nel tessuto denso dei Sassi, originato dalla capacità costruttiva dell'uomo; **2.** La complessità delle stratificazioni e l'esperienza umana dell'arte di edificare collaborano da sempre con la morfologia, con la forma e i materiali del luogo. La disposizione degli ambienti in una parte del Museodemoetnoantropologico (DEA). Questo materiale organico si presenta fino ad oggi come la città che conserva in modo sapiente una integrazione incredibile tra forme e modi di abitare la Terra.

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Figure 3. *Le geometrie, i moduli, gli assi e le direttrici sono elementi caratteristici che strutturano anche lo spazio urbano. Interpretazioni spaziali di geometrie che convergono come le dita nel palmo della mano, nello spazio semi pubblico delle "unità di vicinato" e "camere urbane";* **4.** Matera Basilicata, Italy 1951 by Henri Cartier-Bresson Questo paesaggio è caratterizzato da geometrie e prospettive inconsuete che si ricompongono in forme sconosciute dove i terrazzi sono il tetto dell'altro che sconfinano con strade e slarghi, profferli e attraversamenti. L'equilibrio delle forme architettoniche, il loro armonioso rapporto con lo spazio pubblico donano all'ambiente, pur variamente articolato, una mirabile unità e una bellezza composta e meditata; **5.** A partire dallo spazio aperto, semipubblico, proprio dell'unità di vicinato si compongono poi scavi e ipogei come costruzioni e come prolungamento degli stessi il tipo a lamione. Esempi di parti urbane rilevate

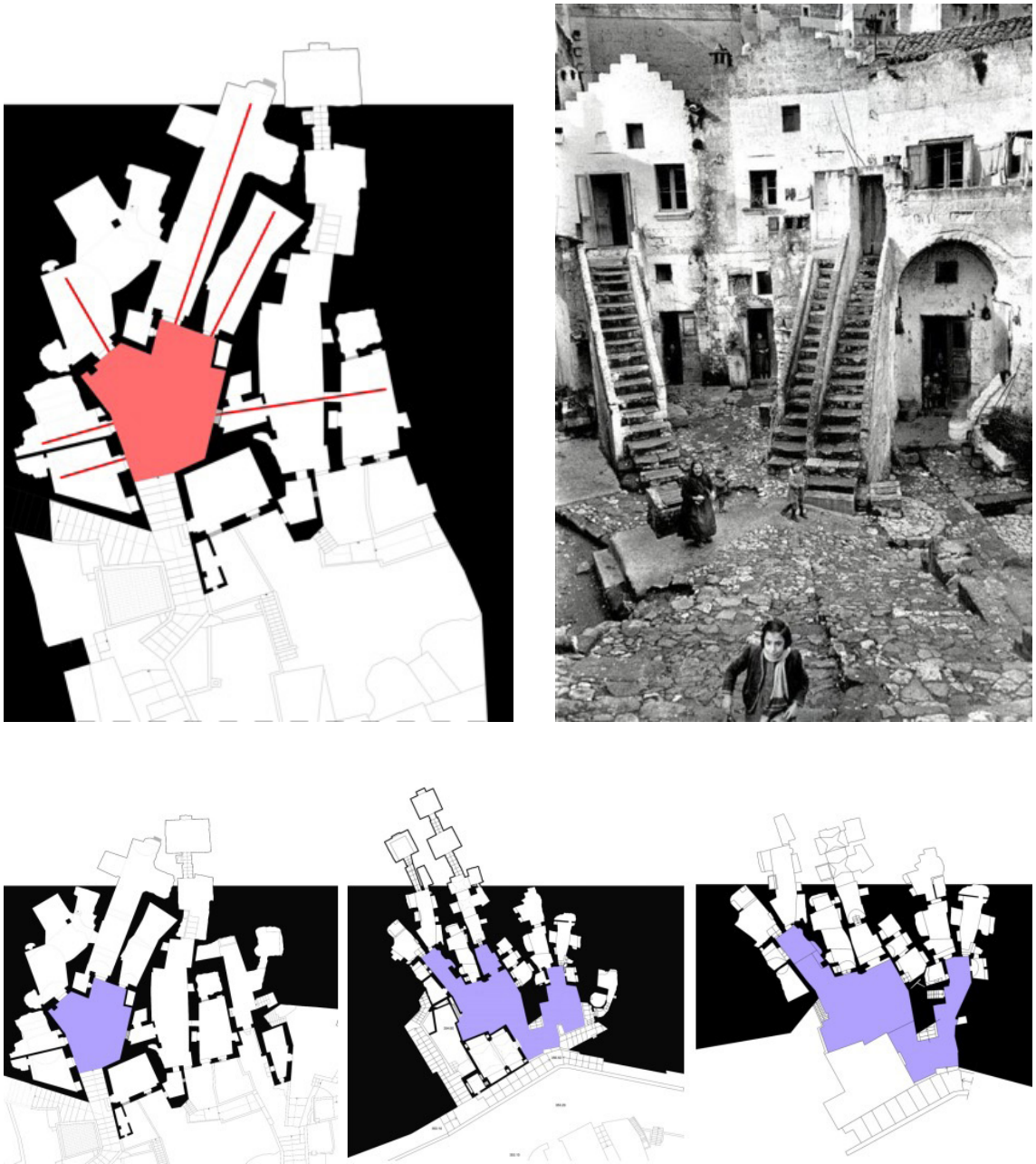

Figure 6. LA CELLULA ELEMENTARE del tipo a LAMIONE. la più piccola unità abitativa, la cellula base, è misurata e proporzionata secondo gerarchie e dimensioni desunte dall'esperienza della pratica costruttiva.
Ipotesi di lettura geometrico-formale interna in rapporto alla pianta, in alzato in sezione con la sovrascrittura di un rettangolo aureo. Alcuni esempi indagati.

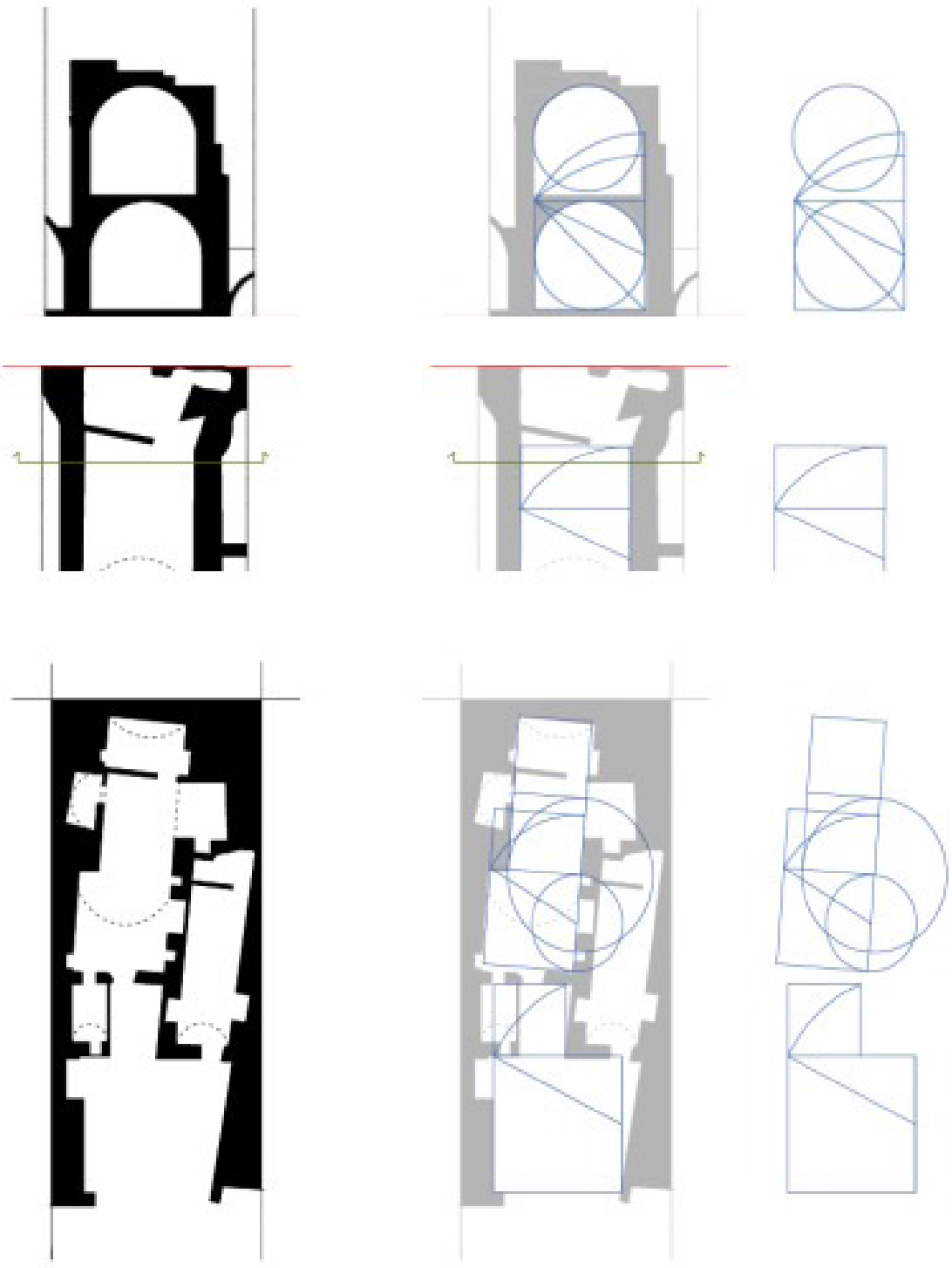

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Figure 7. *Esempio di casa a un livello_tipo a grotta e tipo ambiente costruito a ridosso della grotta;* **8.** *Rilievi di abitazione ad un livello tipo a lamione costruita a ridosso e prolungamento dell'ipogeo.*

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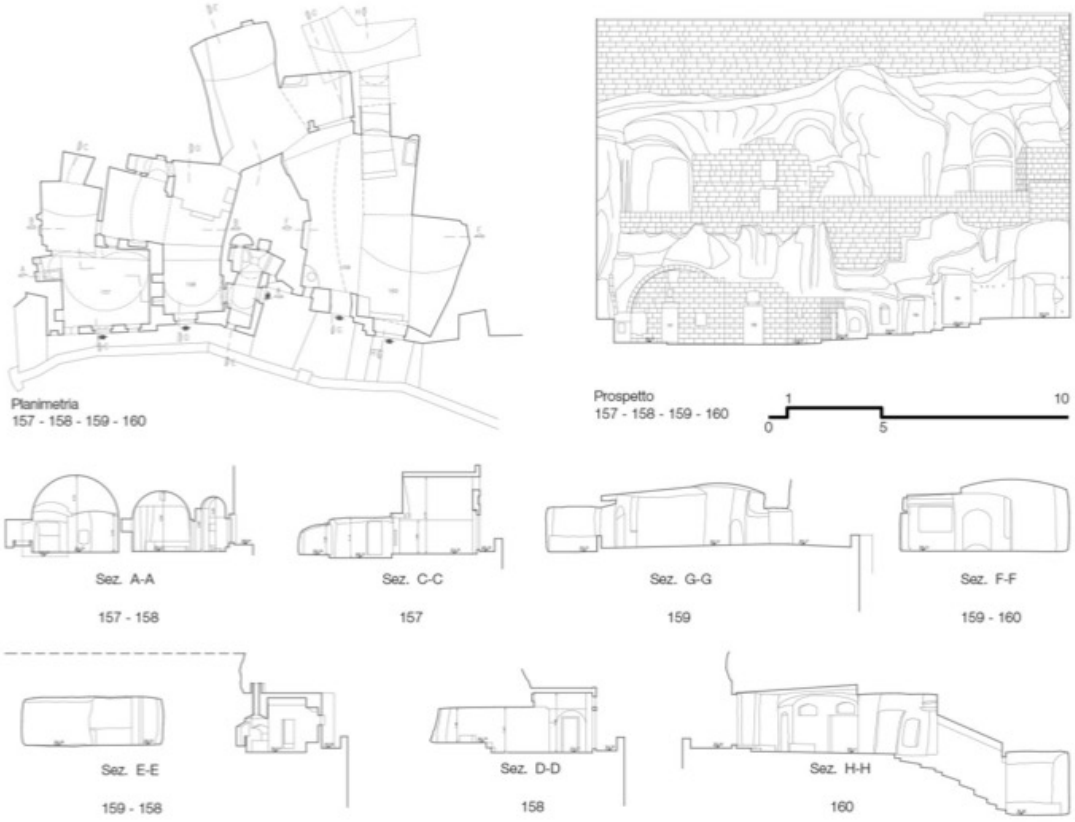

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Infrastrutture e città diffusa. Riuso dell'ex base Nato di Comiso

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L'ex base militare Nato di Comiso è situata al centro del bacino che gravita intorno i comuni di Comiso, Vittoria, Chiaramonte Gulfi e Ragusa; uninfrastruttura abbandonata dal 1994 che costituisce unenorme vuoto allinterno di un territorio metropolitano diffuso, caratterizzato, oltre che dagli agglomerati urbani, anche dalla presenza di terreni agricoli, serre, masserie, e poi tante piccole abitazioni, depositi, capannoni, rivendite di auto, di mobili, negozi allingrosso, supermercati, bar.

Episodi differenti o ripetuti che configurano complessivamente un sistema che, nel tempo, si è auto-organizzato attraverso lazione diretta dei privati cittadini. Un sistema discontinuo, ma comunque imperniato economicamente tanto sulla coltivazione florovivaistica e ortofrutticola, quanto sulla piccola impresa artigianale. Un impianto dove, lo stesso aeroporto, che occupa solo una piccola parte dellex base militare, stenta a integrarsi non riuscendo a produrre servizi adeguati alle potenzialità produttive della zona.

Ciò detto, senza alludere alla velleità di rimettere tutto in funzione, il nostro contributo prende spunto da una ricerca in corso sulla riattivazione delle ex basi militari e da alcune occasioni di progetto che hanno avuto lo scopo di sondare come ricollegare questa infrastruttura al suo territorio; interventi rigenerativi studiati per essere più coerenti con la forma, le esigenze, lidentità, e le trasformazioni in atto nel territorio circostante. Interventi che aggiungono poco, al più sottraggono, spostano, sostituiscono, riorganizzano e ove possibile riciclano la materia trovata: operazioni concettuali, il cui risultato finale potrebbe significare linizio di un nuovo immaginario collettivo, reale, da cui ripartire per riabitare questi luoghi.

Premessa

Kevin Lynch, riferendosi al più ampio fenomeno delle infrastrutture in abbandono, affermò che, negli Stati Uniti, le aree militari in procinto di essere dismesse si estendevano su una superficie più o meno grande quanto il Portogallo (Lynch, 1972). Tuttavia, se, nel 1972, il problema posto dall'abbandono delle ex-basi militari e dei relativi aeroporti, si poteva ancora focalizzare nel recupero dei manufatti esistenti all'interno della superficie recintata, oggi, inglobati nel sistema della città diffusa, il destino di queste aree è strettamente collegato sia al grado di permeabilità che esse riescono a istituire rispetto la micro e la grande scala, sia all'interesse che, di conseguenza, esse possono ancora suscitare per la ricomposizione dei territori urbani nella loro geografia.

Il ragionamento che di seguito intendiamo sviluppare si articolerà in alcuni passaggi teoretici e una esemplificazione dei principi metodologici messi a punto e indagati in alcuni progetti per valutare le varie possibilità applicative. Sul piano del metodo, operando una investigazione che muoverà dal generale al particolare, ci si soffermerà sul tema della 'città diffusa' e le ricadute che lo studio di queste aree hanno prodotto sul progetto urbano e in particolare sul rapporto con il 'vuoto'; sul tema delle nuove centralità e loro permeabilità in relazione al recupero degli aeroporti connessi alle ex-basi militari come opportunità di sviluppo territoriale, e sul caso dell'ex base militare Nato di Comiso - situata al centro del bacino che gravita intorno i comuni di Comiso, Vittoria, Chiaramonte Gulfi e Ragusa - in cui abbiamo potuto sperimentare alcune delle questioni sopracitate.

L'obiettivo generale sarà, pertanto, quello di dimostrare come all'interno di una problematica tanto vasta e complessa, l'integrazione tra poli infrastrutturali e contesti urbani consolidati può costituire un veicolo per lo sviluppo di questi nuovi territori; e come vi siano alcuni tematismi ricorrenti che in modi diversi e complementari, affrontano sul piano teorico e operativo il rapporto tra la città diffusa e i contesti urbani consolidati.

Città diffusa. Un nuovo confronto con 'il vuoto'.

Verso la fine degli anni '60, nuovi scenari economici, infrastrutturali e sociali, favorirono consistenti espansioni del territorio urbano. Si costruirono nuovi quartieri, infrastrutture e nuovi servizi che, complessivamente, determinarono la perdita definitiva dei confini urbani e, di conseguenza, l'abolizione di quello che finora era sempre stato ritenuto un dato strutturale ed antropologico decisivo nel rapporto dell'uomo col suo habitat: la separazione/ contrapposizione tra città e campagna.

In Italia, dagli anni '90 in poi, il senso di queste trasformazioni fu identificato prima con il nome di 'città diffusa' - a voler indicare un'ampia porzione del territorio urbanizzato, caratterizzata da una sostanziosa dotazione di servizi, ancorché sparsi nel territorio, usati dalla popolazione insediata come se fosse una città – e, in un secondo momento con quello di 'arcipelaghi metropolitani' a voler sottolineare la qualità metropolitana del territorio ed il suo articolarsi in diversi centri (Indovina 2009). Infatti, mentre il dibattito culturale era ancora imperniato sul destino dei centri storici, alcuni studiosi iniziarono a indagare come le città si stavano dilatando, oltre la periferia consolidata, tra i terreni agricoli in abbandono, a formare tessuti discontinui ed espansi in grandi aree territoriali. L'interesse generale ricadde, soprattutto, sugli insediamenti suburbani a bassa densità, ovvero luoghi dove non la 'società' ma i 'singoli cittadini', emancipandosi dai vincoli di attrazione esercitati dalla città compatta, avevano determinato l'organizzazione degli spazi: per cui, non erano più le mura, non era più il disegno preordinato che definiva l'esperienza insediativa di quei cittadini ma, più semplicemente, era il sistema di convenienze reciproche che segmentava l'esperienza quotidiana di chi vi abitava (Indovina, 2009). Ma non solo - tra gli spazi residuali, tra le infrastrutture, tra i nuovi poli della cultura e dei servizi, tra le piccole case, nelle aree abbandonate - il 'vuoto' fu considerato un importante peculiarità in quanto non costituiva più uno 'sfondo' rispetto al 'pieno' ma assumeva, in queste nuove circostanze, una specifica funzionalità: riportava 'il tutto' ad una condizione paesaggistica, tale che un qualunque edificio, un deposito, un centro sportivo o altro, non poteva essere più visto o pensato come un oggetto a sé stante, ma interconnesso alle trame e agli strati del suo contesto.

Da queste premesse, il disegno degli spazi aperti rientrò stabilmente nel dibattito sulla città contemporanea, e presto si cominciarono anche a strutturare due concezioni antagoniste che, da punti vista opposti, tentavano di rispondere ad una medesima domanda: lo sviluppo futuro di queste aree si esplicherà in continuità o in discontinuità rispetto la forma urbana che abbiamo ereditato? Così, mentre alcuni, come Vittorio Gregotti e Bernardo Secchi, impegnati anche sul fronte della 'città storica', guardavano alla 'città diffusa' dal 'centro' della città consolidata e auspicavano la sua modificazione a partire dalla quella esistente; altri, come Rem Koolhaas e Thomas Sieverts - concettualmente indifferenti al costruito esistente che non valutavano più come un 'fattore' stabile e controllabile nel tempo - osservando all'interno dei *terrain vague*, dei *non luoghi* e dei 'paesaggi dello scarto', alludevano all'idea di una 'città inversa', prefigurata a partire tanto dalle idee maturate dalle Avanguardie storiche e dai Maestri del Moderno, quanto dalla riscoperta della 'vita quotidiana' nel lavoro di Henri Lefebvre, Michel de Certeau e Guy Debord.

A partire dal terzo millennio, l'inasprirsi di alcuni fenomeni planetari hanno frenato la crescita delle città, e hanno imposto come condizione prioritaria il tema della riorganizzazione di tutti gl'interventi di nuova urbanizzazione, non pianificati e non relazionati con il territorio, e di tutti quei manufatti incompleti o che nel frattempo erano stati abbandonati, come ad esempio le ex aree militari e i piccoli aeroporti annessi.

Permeabilità territoriale e permeabilità delle ex aree militari.

L'aeroporto di Asiago, ex aeroporto militare ed oggi struttura più alta in quota d'Europa, è un aeroporto civile aperto al traffico turistico che sorge in un luogo dal panorama suggestivo a cui fanno sfondo le Dolomiti. La città di Asiago è una rinomata località che offre attrezzature per lo svago e lo sport, si pensi allo stadio di ghiaccio Odegar o all'osservatorio astronomico di cime Echar. La proposta del masterplan è quella di attrezzare l'aeroporto affinché diventi un polo di attrazione turistica integrato a dei servizi disseminati nel territorio circostante. Il progetto prevede nella zona a nord della pista un elemento lineare che oltre ad ospitare hangar, uffici e servizi, serva da terrazza belvedere e la dilatazione del perimetro di pertinenza dell'aeroporto fino alle pendici dei monti così da creare un filtro tra aeroporto e territorio circostante ospitando nuove funzioni quali attrezzature sportive e piste ciclabili che connettono l'area con il centro della città di Asiago (Lancerin, 2008).

L'aeroporto civile Gino Allegri di Padova, nato come aeroporto militare, è aperto al traffico commerciale dal 1987. Sorge nel tessuto urbano della città ed è utilizzato da un bacino di utenza talmente ampio da essere stato incluso nella categoria dei 'city airport'. Oltre ai voli di linea, l'aeroporto ha sviluppato ulteriori tipologie di uso come voli sanitari e d'emergenza, voli privati sportivi. Il sedime aeroportuale si divide in tre aree: una dedicate alla logistica dell'aeronautica militare, una gestita dalla società SAVE (che comprende l'aeroporto doganale internazionale, la torre di controllo con uffici, due hangar dotati di piazzale e ingresso autonomo) e un'area dismessa di proprietà dell'esercito. Il perimetro aeroportuale è delimitato su tre lati da infrastrutture viaria e naturali, la ferrovia, la statale e il fiume Isonzo. Il tessuto edilizio che circonda l'aeroporto è caratterizzato da una disordinata presenza di impianti sportivi sicuramente derivante dalla mancata realizzazione della "Cittadella dello sport del Basso Isonzo" che avrebbe costituito una connessione tra l'aeroporto e la città e dove oggi è prevista la costruzione di un Museo dello sport e una biblioteca dello sport. Il Masterplan proposto vuole ricucire la frattura tra il centro urbano e la zona aeroportuale attraverso la 'ridefinizione del suo perimetro', dando così vita ad un 'parco lineare che diviene filtro tra le due parti' e che, al contempo, tenta di stabilire una connessione con la zona di espansione sud della città attraverso l'edificazione di nuove strutture e funzioni, nonché ad un probabile spostamento più consono delle piste (Perugini, 2008).

Mentre un tempo il concetto di 'confine' indicava inequivocabilmente una linea, un muro, un filo spinato che aveva il compito di proteggere, distinguere e stabilire il perimetro di una proprietà, oggi questa condizione appare ribaltata: infatti, se fino al 1500 si è studiato come ispessire il muro di cinta di una fortezza per renderlo anche visivamente inaccessibile, progressivamente, quello stesso muro si è dissolto fino a scomparire e le aree militari, tecnologicamente più avanzate, oggi, vengono sempre più spesso interrate o comunque

nascoste alla vista altrui.

Abbiamo riportato gli esempi dei piccoli aeroporti di Padova e Asiago perché come abbiamo visto in questi due progetti quanto il tema della permeabilità è centrale nell'ipotesi di riconversione di queste aree al fine di potere istaurare il maggior numero di relazioni con il territorio circostante: relazioni rispetto il tessuto urbano che si addensa attorno, e relazioni rispetto il territorio ad una scala molto più grande quale quella regionale.

La recinzione che ancora perimetra molte aree militari ha rappresentato e continua a rappresentare chiaramente un freno allo sviluppo urbano e alla loro riconversione per usi civili. Negli anni passati, negli Stati Uniti, come in Europa - per assecondare l'elevata richiesta di nuove residenze, servizi e aree verdi - questo problema, è stato risolto dismettendo le strutture preesistenti: per cui a Fort Mcpherson in Georgia, come a Warrington in Inghilterra o a Friburgo in Germania, centinaia di ettari sono stati riconvertiti, a parco urbano con usi industriali, commerciali e residenziali.

Fin ora, anche i processi di ri-uso delle strutture aeroportuali dismesse hanno conseguito i medesimi approcci che abbiamo visto realizzare, più in generale, per le aree military, e quindi concordi con quanto scrive Sara Favargiotti, questi possono essere raccontati attraverso casi emblematici, suddivisi in due gruppi:

1. Da aeroporti dismessi all'espansione urbana + parchi (Stapleton, Denver, CO; Munchen Riem, Germania)
2. Da aeroporti dismessi a parchi urbani (Tempelhof, Berlino, Germania, Crissy Field, San Francisco)

Lo sviluppo di un piccolo aeroporto è un'occasione per creare nuovi servizi che non per forza devono essere inerenti alla sua funzione d'origine, ma che possono generare interesse e svolgere al contempo un'azione di tutela e valorizzazione di luoghi in stato di obsolescenza, diventando così alternativa di mobilità, strutture urbane di addensamento, dispositivi di paesaggio. In Italia si sta ricominciando a dare importanza al miglioramento delle infrastrutture, cercando di attribuire loro una nuova funzione per evitarne l'abbandono o un uso improprio. Fino ad oggi, gran parte di essi, sono stati realizzati basandosi su esigenze locali soprattutto di natura economica, sperando in un rilancio del turismo e della produttività locale. Tutto ciò, non solo non deve impedire alle amministrazioni di investire in questa presenza aeroportuale ma al contempo deve dar loro la possibilità di sfruttare il luogo in cui sorgono per rinvigorire l'economia locale, magari creando un nuovo centro di interesse che possa dare più possibilità di sviluppo grazie a un'integrazione delle funzioni. In una modernità come quella in cui viviamo, dove non vi è più l'esigenza di grandi dimensioni per assolvere al compito di un miglioramento della vita, il piccolo aeroporto dovrebbe essere preservato in quanto tale, sfruttandone le opportunità fornite dalle ridotte dimensioni ed esigenze per poter amplificare e sviluppare le relazioni tra il suolo aeroportuale e quello urbano in cui sorge.

Secondo Alberto Ferlenga è necessario "resistere alla trasformazione nel senso della bigness ambita dalle autorità locali è anche, dal punto di vista dell'architettura, resistere alla tendenza di trasformare questi spazi in centri commerciali, come avviene ormai per tutti i grandi nodi di passaggio e mobilità. Significa opporre ad un modello ormai consolidato e diffuso un progetto alternativo che si confronta con questi spazi come a dei potenziali parchi innestati nel territorio, parchi in cui, il volo è una delle attività possibili, ma non esclusiva; parchi, in cui la tradizionale distinzione aeroportuale tra land side e air side viene sfruttata per allargare l'orizzonte del land side verso lo spazio urbano attraverso la costruzione di un margine che non sa più solo di spessore di un muro o di una rete, ma che abbia la consistenza e l'articolazione di un manufatto che definisce, sottolinea ed evidenzia il suo essere parte del territorio. Un margine che non sia più solo un limite invalicabile ma comprenda e si definisca attraverso l'inclusione di elementi fisici e costruiti presenti sul territorio o contenuti in piani o progetti"(Ferlenga, 2008).

Più recentemente, i piccoli aeroporti europei stanno diventando sede di un grosso numero di imprese e attività, in quanto una combinazione di efficienti infrastrutture di trasporto, elevata sicurezza e importanti infrastrutture di comunicazione rende l'aerea aeroportuale estremamente attrattiva per un'ampia varietà di imprese. Ogni aeroporto cerca di coltivare una propria vocazione specifica, come centri economici, turistici, industriali o tecnologici. Gli

spazi aeroportuali acquisiscono, di fatto, un ruolo da protagonisti nello spazio metropolitano e si convertono in centralità che attraggono attività economiche differenti che generano una crescita strategica delle città: la centralità delle città e delle aree urbane può essere pertanto determinata dall'operatività dei piccoli aeroporti.

Lo scenario di un aeroporto/parco, propone di attribuire a questa infrastruttura un valore aggiunto in quanto generatore di interessi sociali ed economici. Essendo importante la relazione con il territorio in cui sorge un'area aeroportuale, diventa di fondamentale importanza considerarne la sua accessibilità demolendo quel margine che lo caratterizza e che lo rende un luogo chiuso in sé stesso. Diventa fondamentale non solo individuare le infrastrutture di trasporto con cui il piccolo aeroporto è connesso, (e le distanze per raggiungerlo), ma dare anche un senso all'accesso che vada oltre il mero collegamento funzionale e sia un'occasione per strutturare ciò che appare incoerente e può diventare luogo di costruzione di relazioni fertili.

Il caso dell'ex base militare di Comiso. Alcuni progetti.

Prima di diventare una base missilistica per la NATO, l'area militare di Comiso fu un campo di fortuna e poi, durante la seconda guerra mondiale, un avamposto strategico per consolidare la difesa militare aerea da eventuali incursioni nemiche. Nonostante i pericoli e le probabili tragedie a cui si andava incontro, la realizzazione di quell'aeroporto fu ben accolta in quanto veniva controbilanciata dalla promessa di futuri e proficui guadagni. Quindi, espropriando senza troppi indugi, un'area di 146 ettari - coltivata a vigneti, oliveto e alberi di carrubo – si costruì la nuova infrastruttura. Tuttavia, dopo la guerra, lo sviluppo promesso non si verificò e per circa trent'anni, salvo qualche breve interruzione in cui aveva iniziato a funzionare anche come aerostazione civile, l'aeroporto è rimasto inutilizzato. Nel 1981, in relazione ad una nuova promessa di futuri e proficui guadagni il Consiglio dei Ministri decise di localizzare la base NATO per collocarvi, strategicamente, un centinaio di testate nucleari. Rapidamente si ampliò la pista – che oggi è una delle più grandi in Sicilia - e soprattutto si costruirono ulteriori hangar, capannoni, rifugi e numerosi alloggi per i militari che avrebbero dovuto prestare temporaneamente servizio in questa base. I lavori durarono alcuni anni: giusto in tempo per fare arrivare i missili e al contempo vedere siglato, nel 1985, un accordo di pace tra Stati Uniti e Russia in cui si stabiliva il loro smantellamento.

Entrandovi dentro, tutto appare intatto, cristallizzato, come il giorno in cui ha cessato di funzionare. Di fatto, si percepisce che è un luogo non più abitato non perché non s'incontra nessuno ma perché la Natura, prima relegata nelle aiuole accuratamente disegnate, oggi straripa da esse, si diffonde, poco alla volta, ovunque trovando ampio spazio per crescere. In un angolo, indicata dai cartelli ma nettamente nascosto da un insieme di edifici che fornivano servizi all'apparato militare, c'è la nuova aerostazione intitolata a Pio La Torre. Un piccolo aeroporto per voli low-cost, costruito nel 2004, che nonostante i buoni propositi stenta a produrre i benefici previsti per lo sviluppo turistico ed economico del territorio circostante. Infatti, sebbene sia situata al centro del bacino che gravita intorno i comuni di Comiso, Vittoria, Chiaramonte Gulfi e Ragusa, oggi, appare ancora molto distante, o per essere più precisi, sembra ancora esclusa dalla realtà e quindi dalla vita che si svolge all'interno del comparto che la circonda. Attorno i suoi confini si estende un territorio 'diffuso' caratterizzato, oltre che dagli agglomerati urbani e da una corona di piccoli rilievi collinari, anche dalla presenza di terreni agricoli, serre, masserie, e poi tante piccole abitazioni, depositi, capannoni, rivendite di auto, di mobili, negozi all'ingrosso, supermercati, bar. Episodi differenti o ripetuti che configurano complessivamente un sistema che, nel tempo, si è auto-organizzato attraverso l'azione diretta dei privati cittadini.

Un sistema discontinuo, ma comunque imperniato economicamente tanto sulla coltivazione florovivaistica e ortofrutticola, quanto sulla piccola impresa artigianale. Un sistema in cui, lo stesso aeroporto stenta a integrarsi, non favorendo a sufficienza con servizi adeguati le potenzialità produttive della zona.

Ciò detto, considerata la realtà fisica, politica, sociale ed economica del territorio, la complessità delle problematiche poste in essere, attraverso l'occasione di alcune tesi elaborate dagli studenti dell'Università degli Studi di Enna "Kore", abbiamo sperimentato tre

strategie di intervento che pensiamo possono essere conseguiti anche in altri contesti affini.

La prima strategia, sviluppata nella tesi di Vincenzo Dipasquale (fig 1), partendo dal problema di come recuperare l'enorme quantitativo di manufatti presenti, propone di riadattare alcuni di questi edifici e palazzine residenziali sia per realizzare una scuola di volo, sia per fornire gli alloggi agli studenti.

La seconda, a cura di Ilenia Modica (fig 2), sviluppa la proposta di realizzare un'area cargo con annesso mercato e area fieristica. Si tratta di un intervento più consistente rispetto quello precedente, ma come nel caso dell'aeroporto di Stoccolma-Skavsta, pensiamo che anche qui potrebbe influenzare positivamente l'economia locale, quella provinciale, e dei territori di Agrigento, Gela, Enna e Caltanissetta.

Infine, l'ultima strategia, definita nella tesi di Alessandra Floridia (fig 3), studia il modo di rendere permeabile l'area, proponendo degli interventi che possano migliorarne la qualità del suo spazio facendo leva sui principi di temporaneità, economicità, riciclo dei materiali ed eco-sostenibilità. Nel progetto, è stata ipotizzata, quindi, la realizzazione di un centro sperimentale e di assistenza agricola nella zona antistante l'aeroporto (per il quale sono stati definiti dei servizi e un nuovo ingresso), concentrandosi sul carattere ambivalente di questo nuovo luogo che è, contemporaneamente, uno spazio pubblico e luogo di attività di ricerca e ricreative. Grazie ai materiali reperiti dalle demolizioni delle preesistenze, è nata l'idea di una 'collina brulla', come quelle nel territorio circostante, al cui interno si sviluppa uno spazio pubblico scandito da porticati, secret gardens, orti dove svolgere attività ludiche e ricreative, oltre a dei padiglioni dove praticare attività di ricerca e formazione. Inoltre, la demolizione selettiva potrebbe consentire il riciclo di alcuni materiali, impiegati nel nuovo progetto e l'apertura del margine dell'area verso il territorio esterno, accompagnato dalla predisposizione di una pista ciclabile, di orti, frutteti e pale eoliche.

Fatta eccezione per il cargo, si tratta di interventi che aggiungono poco, al più sottraggono, spostano, sostituiscono, riorganizzano e ove possibile riciclano la materia trovata: sono soprattutto delle operazioni concettuali, il cui risultato finale potrebbe significare l'inizio di un nuovo immaginario collettivo, reale, da cui ripartire per riabitare questi luoghi.

Quindi in conclusione, mentre la ricerca annuncia l'avvento e la possibile diffusione di nuove tecnologie di volo che necessitano di uno spazio di atterraggio molto ridotto rispetto alle attuali piste, alla luce di quanto detto e sperimentato è possibile immaginare che il riuso dei piccoli aeroporti potrà costituire, una strategia in grado di moltiplicare i nodi dell'accessibilità e definire una nuova geografia dei luoghi centrali, catalizzatori di processi?

Figure 1. Tesi di Laurea in Composizione Architettonica e Urbana *sul riuso di un'area militare dismessa all'interno dell'aeroporto di Comiso* di Vincenzo Dipasquale.

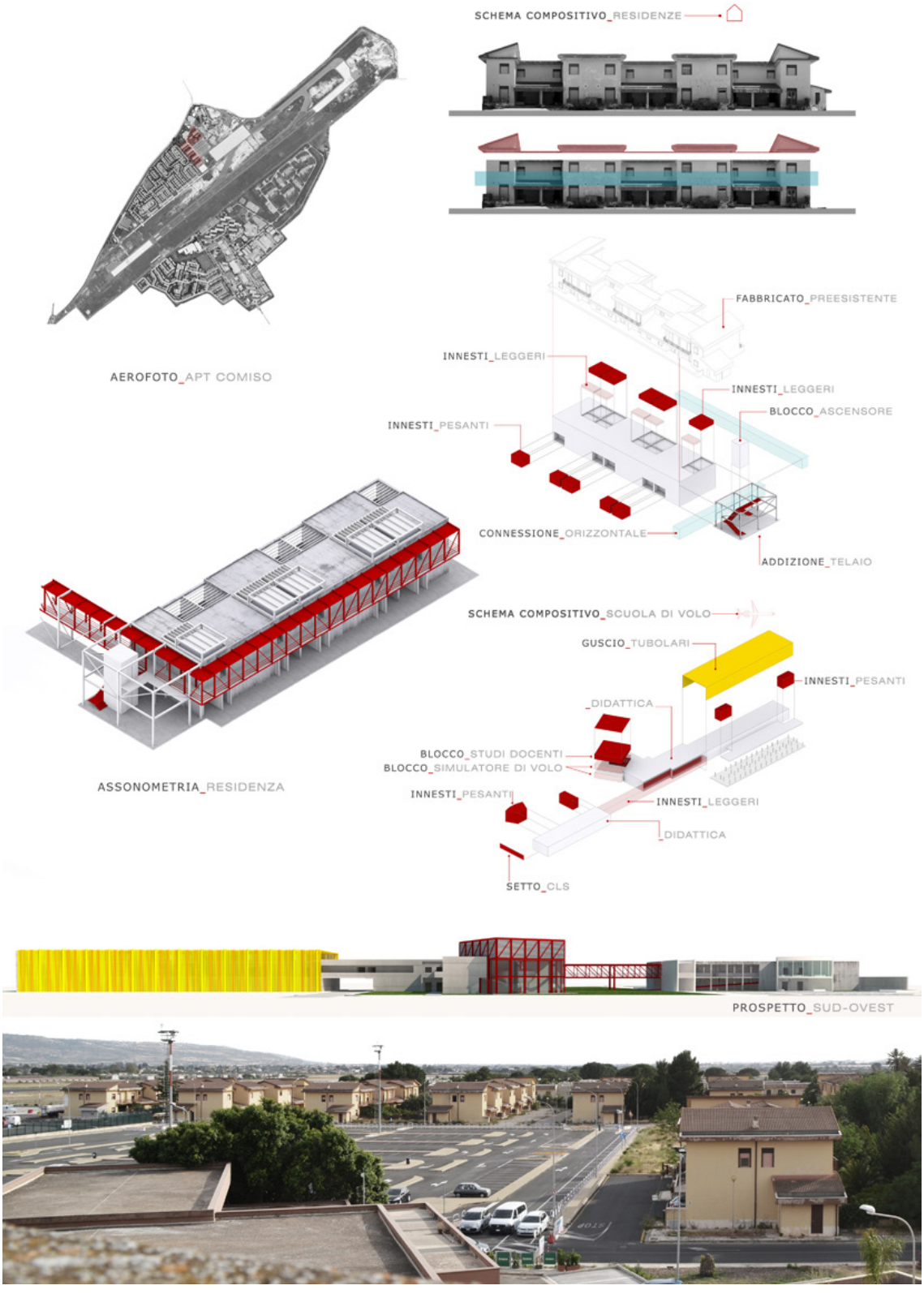


Figure 2. Tesi di Laurea in Composizione Architettonica e Urbana *sul progetto di un'area cargo all'interno dell'ex base militare di Comiso* di Ilenia Modica.

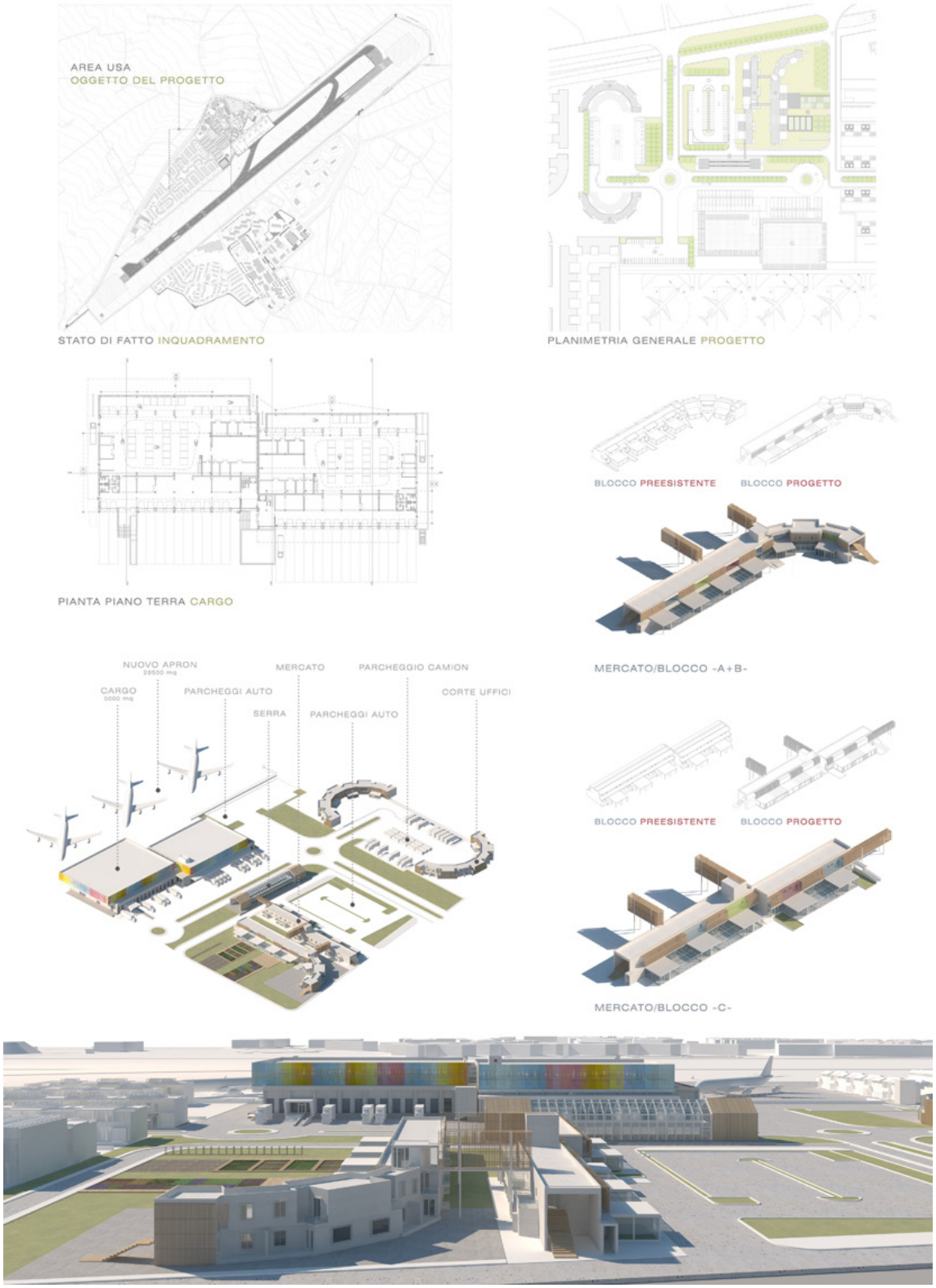
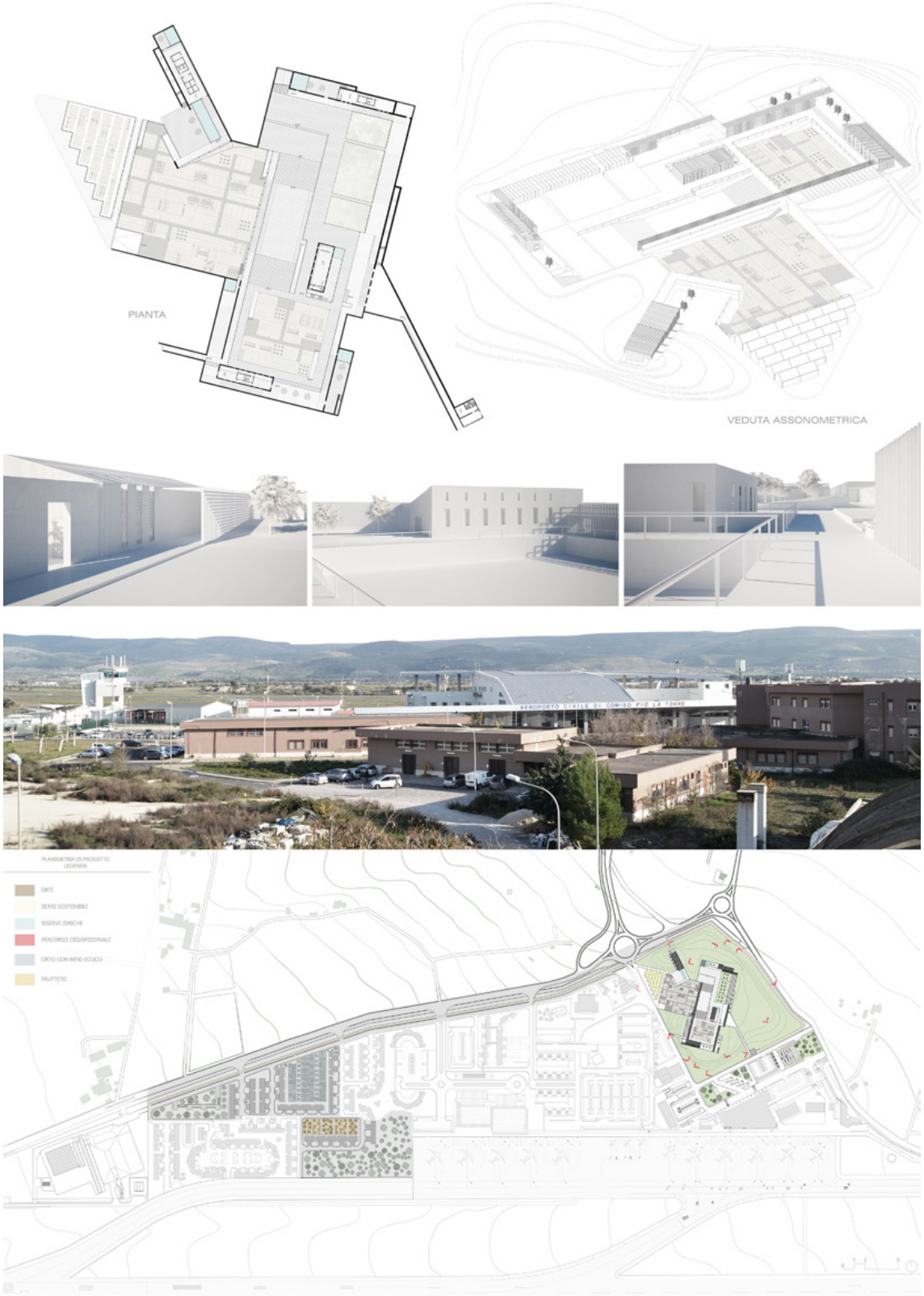


Figure 3. Tesi di Laurea in Composizione Architettonica e Urbana *sul progetto di un Centro sperimentale e di assistenza agricola all'interno dell'ex base militare di Comiso* di Alessandra Floridia.



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