



Next Places, Next Spaces

PROCEEDING BOOK

Forthcoming approaches in architectural and urban designing



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KEYNOTE SPEAKERS



Prof. Piotr Lorens - PhD, DSc.

Urban planner. Lecturer in urban design and development and - since 2007 - Head of the Department of Urban Design and Regional Planning at the Faculty of Architecture, Gdansk University of Technology. His university activities also include coordination of the research and EU Social Fund projects.

Based on these projects he was responsible for organization and coordination of the post-graduate studies and international conferences related to the issues of urban regeneration and management. Besides his academic career he is also actively involved in the activities of the International Society of City and Regional Planners (within 2011-2017 was holding the position of Vice President responsible for the Young Planning Professionals program) as well as of the Society of Polish Town Planners – TUP (at present – Chairman of the Advisory Board of the society, within years 2015-2018 – President of the Society).

Piotr Lorens graduated as architect from the Gdansk University of Technology, and also completed the post-graduate studies (as Fulbright Fellow) at Harvard University and Massachusetts Institute of Technology. Since then he is active as guest lecturer at numerous universities, mostly around Europe but also in Asia and Africa. He was also teaching as guest professor at two Russian universities. At the same time he is conducting his professional career with the focus on planning and management of the urban regeneration projects in Poland. Among others, he was involved in development of urban regeneration plans for numerous municipalities in Poland and also for many years was involved in planning for regeneration of the Young City in Gdansk - the large-scale urban project located on the site of former Gdansk shipyard.

His professional interests include urban planning and regeneration processes, with special focus on waterfront areas and public spaces.



Prof. Maurizio Carta - PhD,

Maurizio Carta is architect, PhD and full professor of urbanism and regional planning at the Department of Architecture of the University of Palermo. He's the Dean of the Polytechnic School of the University of Palermo. He is senior expert in strategic planning, urban design and local development, drawing up several urban, landscape and strategic plans in Italy.

In 2015 the International Biennial of Architecture in Buenos Aires, he was awarded the prize for "academic investigation". He is visiting professor or keynote speaker in several universities and institutions.

He is author of several publications, among the most recent: Reimagining Urbanism (Listlab, 2014), Re-cyclical Urbanism (with B. Lino and D. Ronsivalle, Listlab, 2016), The Fluid City Paradigm (with D. Ronsivalle, Springer, 2016), Augmented City (Listlab, 2017) Dynamics of Periphery (with J. Schroeder, Jovis, 2018).

Among the most recent experimental activities, the scientific coordination of the regional urban spatial Plan of Sicily, of the structural territorial Plans of the Provinces of Palermo and Agrigento and of the Strategic Plans of Palermo, of the Northern Barese Ofantino, by the Province of Catania and the municipalities of the Province of Syracuse, of the Partinicese, Corleonese and Sicani Landscape Plan, of the Port regulatory plan of Palermo, of the Plan for the Nature Park of the Lucan Apennines, of the General Town Plan of Poggioreale.

From 2008 to 2009 he is an expert of the President of the Province of Palermo for strategic territorial planning. From September 2009 to June 2011 he was Councilor for the Municipality of Palermo with delegations to the historic center, strategic plan and urban redevelopment of the coast. From 2018 part of the work group of the Sicily Region for the Regional Urban Law and for the guidelines for the Regional Territorial Plan.

For his research and publications he is invited to give lectures and conferences in numerous Italian and foreign universities and institutions, including Milan, Rome, Florence, Naples, Turin, Genoa, Venice, New York, London, Paris, Moscow, Dortmund, Hannover, Madrid, Barcelona, Prague, Buenos Aires, Beijing, Valencia, Tunis, Malta. Since 2016 he has started a scientific collaboration with the Leibniz University of Hannover as part of the DAAD program. From 2018 he is a member of the Scientific Committee of EUROPAN.

**Prof. Francesco Alberti - PhD**

Dr Francesco Alberti is Associate Professor of Urban Planning and Design at the Department of Architecture of the University of Florence, where he is currently the coordinator of the Laboratory of Landscape and Urban Design for the master's degree course in Urban and Regional Planning and in charge with the teachings of Urban Design for the Laboratory "Architecture and City" for the master's degree course in Architecture, Smart City Planning for the postgraduate programme "ABITA" (Bioecological Architecture and Technological Innovation for the Environment) and and Mobility Planning for the postgraduate programme in Landscape Architecture. In the same department, he is the scientific coordinator of the research unit "SUP&R" (Sustainable Urban Projects & Research) and of the related university spin-off "Urban LIFE" (Urban Liveability & Innovation for Everyone).

As a member of the Italian National Institute of Urban Planning (INU - Istituto Nazionale di Urbanistica) he joined the National Committees "Networks, Infrastructure and Innovation Policies" (2014-2016) and "Urban Accessibility for Everyone" (2016-). Since 2016 he is the President of the Regional division of INU in Tuscany.

His scientific interests in the fields of spatial planning and urban design refer to an approach aimed at giving cultural coherence and operational continuity among research, education and public policies concerning city and territory, with a special focus on two main areas:

- the relationship between urban planning, design and management in the perspective of sustainability and urban resilience;
- the interpretation of mobility systems as "public spaces", playing a major role in structuring contemporary cities.

On these topics he has written many essays, articles and books, joined national and international conferences, lectured in postgraduate programmes and master courses for professionals and public administrators, provided expert help in participatory processes, coordinated seminars and conducted researches on behalf of public institutions and private enterprises.

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A word from Editors

As we all see, we are experiencing a fast change in place making due to the new planning strategies and design tools, innovative building technologies and especially more and more consumerist driven ephemerality, which have become the main factors in producing a new built environment.

The continuous concentration of the world population in the urban areas requires more and more spaces and places, resources and energies, modalities of mobility and transport, social inclusion and integrated economies. Considering also that the past general trend produced or helped many environmental challenges in both local and global scale: such as climate change, social marginalization, advancing in land consumption, growing in demand for energies, loss of jobs and so on. These have become the major challenges for the 21st century and some of the greatest problems facing humanity in the next future but starting from today.

During the Modernist period, architects and urban planners aimed to design spaces oriented by the principles of this Movement. The “5 points of Architecture” architectural principles and “Radiant City” urban model of Le Corbusier worked as ideals. After the fall of Modernism as a paradigm, although post-modernism evolved as a counter-reaction movement inspired by Venturi’s ideas, it further continued to be developed heavily influenced by philosophical theories including structuralism, post-structuralism, deconstruction and semiotics. Moreover, later different theoreticians brought into focus themes like: Analogical Architecture, Ecology, Phenomenology, Critical Regionalism, Typology in Architecture, Interrogation of Tectonics, Architecture of Pleasure or Folding in Architecture. Now more and more the issue of sustainable designed and climate-oriented place has become the most emerging one. In fact, this theoretical discourse provided by the most brilliant scholars is a reality of the western world.

The fall of Berlin Wall brought into existence new horizons for Eastern Europe as the architectural context got influenced from this new reality. The monotonous grey socialist urban fabric typical for the eastern countries-built environment became subject of architectural discourse. New actors like private landowners, developers, politicians emerged in the post-socialist urban context. The change in regime from communism to capitalism woke up the socialist city from the “sleep” of abundant public space, parks and green areas to face the

aggressive world of commoditization. In post-socialist countries, the free-market economy system-imposed governments to liberate themselves from the monopoly of urban land and to open to the privatization process.

As a matter of fact, the public spaces close to the city center became very expensive, valuable, and attractive for the private entrepreneurs, who would build high and luxury buildings in the new political context. Permission was given through different intermediary processes like competitions, which in general were at international level. Data including post-socialist period after the 90s show a continuous reduction of public space. The process of reduction of urban public space was guided within the framework of “partial urban plans” (example of Albania) or ad hoc plans, which awarded privileges to developers and which did not exist in the “in force” regulatory plans, by amending them. An important fact to be considered is the attenuated state of local and municipal authorities in terms of planning strategies at the end of the communist period, which also made the process easier.

As a result of this process Moscow lost 15% of forests and 55% of green areas, while Sofia’s public green space was reduced by 30% (Boentje & Blinnikov, 2007). Tirana would be the worst example where the area per person before the 90s was 10 m² and now it is almost 3m², which means a decrease by 70%. Although the issue of public space reduction exists even in West Europe countries, in Ex-Communist countries it was celebrated and marketed as a tool to become westernized. The process had another cover, which justified the loss of urban space for the sake of inviting international companies and making and increasing city’s brand value within the global market. Berlin would be a typical example of the latter (Mauser & Goldhoorn, 2006; as cited in Hirt, 2014).



The aim of this book is to provide a multidisciplinary context for a general debate about the forthcoming approaches in architectural and urban design for the human's Next Places/Next Spaces. It may represent an opportunity through which we all can reflect about how designing is evolving in the arena of worldwide practices and "experiments" aimed to a better quality of life.

ABSTRACTS OF KEYNOTE SPEAKERS

AUGMENTED CITIES OF THE NEOANTHROPOCENE

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ABSTRACT

Contemporary cities could be considered vibrant organisms of places and communities, of data and information, of sensors and actuators, of actions and reactions generated by people and environment both. Cities must be more responsive to our behavioral changes, enabling devices for enhancing our contemporary life. We would be able to build a more efficient urban environment, able to sense, to understand and to act everyday and for everyone. In the post-city age and beyond the smart city, Augmented City is a new paradigm that perceives the demands of more networked, knowledge-based and creative society that answers to the global change by a new circular metabolism. The Augmented City is a spatial/cultural/social/economic platform for enhancing our contemporary life, individual and collective, informal and institutional, expanding the urban space generated by the effects of innovation. The Augmented City redefines dogmas of urbanism that we often thought of being more static and rule-based, recovering its prospective, incremental, responsive and creative approach. We need to think, design and manage cities more sentient, open source and intelligent, again productive, creative and based on recycle, cities resilient, fluid and reticular, and truly strategic. The Augmented City isn't the city of the future, but it brings us in a different present!

CITIES OF TOMORROW – TOMORROW OF PLANNING

Piotr Lorens

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ABSTRACT

Contemporary cities face numerous changes which effect in an intensive debate regarding their future. This debate includes both discussions of what cities can become and how they can look like in closer or more distant future, although there is little discussion on how these visions shall be delivered and implemented. Firstly, we have to deal with the city of the future. But we have to admit that we do not know how it will look like – shall it be an “enhanced” version of the New Urbanists’ fantasy, an embodied dream of urban activists, a “copy-paste” version from Blade Runner movies, or just a bit different version of the city we know today? This bears severe consequences to planning practice - and we have to admit that “rigid” planning based on defining the “final” structure of the city is the song of the past. Secondly, the state-regulated planning law does not respond to the dynamically changing ideas of the society and making it even more “comprehensive” will not help. Thirdly, the increasing variety of problems and issues we deal within planning calls for very diversified approaches to the particular sites and problems, including usage of the much greater palette of tools and techniques. All of this means that – most probably– the future planning shall be much more diversified, responding to upcoming needs and ever-changing situations, focusing – on one hand – on “big issues” and – on the other – dealing with the “small needs” of even small groups of stakeholders. But the problem is much broader, dealing not only with type of approach but also with scale, way of delivery and (finally) way of its implementation.

LIVING AND WORKING IN A HERITAGE SITE. A STUDY AND A PARTICIPATORY PROCESS ON THE CONFLICTS AND OPPORTUNITIES INSIDE THE HISTORIC NEIGHBORHOOD OF SAN LORENZO IN FLORENCE

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ABSTRACT

The lecture focuses on the concept of “identity” of a place, making a distinction between local identity, which implies a community rooted in a place, and the image of the place, which may become recognizable even at a global level. On this subject, the case study of the neighborhood of San Lorenzo in Florence is presented, where a research by the Department of Architecture of Florence has been developed, along with a process of civic participation aimed at orienting public policies to prevent gentrification and tourism homologation of the city center.

ARCHITECTURAL HISTORY AND THEORY

EUCLIDIAN AND NON-EUCLIDIAN GEOMETRY, ARCHITECTURE AND HUMAN HABITATION: EXPERIENTIAL, COGNITIVE AND CULTURAL PARADIGMS AFFECTING ARCHITECTURE

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ABSTRACT

The paper opens with a comparison of a few examples of contemporary architectural spaces directly or indirectly related to Non-Euclidean geometry or geometric abstractions. The examples both contemporary and historic focus on public buildings as embodiment of diverse geometric principles. Leaving pragmatic communal, familial and personal spaces for concluding remarks. The profundity, beauty and diversity of geometric inspiration is explored through five examples:

1. Ancient Egyptian Geometry - Geodaisia and Architecture
2. Paladio's Teatro Olimpico -Vitruvius Planetary Geometry and its Adaptation
3. Divirigi Mosque Inspired Synthesis of Multiple Sources
4. Cosmati Geometric Pavments - Medieval Seven Generations Family Tradition
5. Holbein's *Ambassadors* - Geometric Elements of Architectural and Represented Space

In closing some psychological (Winnicott1967), cognitive (Meltzoff2003) and social (Bogear1988) aspects of habitation and spatial ordering are approached. A few comparative examples will lead to open questions about needs, values and instincts as generators of livable spaces. Concluding with evaluation of paradigms affecting architecture and public and private human co-habitation experience.

KEYWORDS: Architecture - Geometry - Habitability – Ingenuity

(Given the paper does not fill the editing requirements, the editorial board has decided to publish only the abstract and its references list. For further, please, refer to the author)

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RETROSPECTIVE ON THE ORIGINS OF SCHOOL BUILDINGS IN ALBANIA

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ABSTRACT

Education in Albania as in many other countries initiated in the religious buildings and was associated with the clerics who were mostly the first educators and teachers. The core of the medieval city was the religious building, and Albanian schools and education was strongly connected with the mosques, churches, madrasas, monasteries, etc. The Catholics and Muslim religious edifices in Albania were also the first scholastic buildings.

The Medieval period found Albania mostly illiterate and the few imam or clerics who knew the language taught it only to the devoted Muslims, or Catholics who gathered near the Islamic institutions or the Catholic ones. Schools in Albania, in the form we know them today are a late product of less than a century, derived from normative, standards, imported and transformed to be as economical as possible. While, the first schools are related to the objects of worship. Clerics, priests, nuns, etc. were the first to try to spread religion and education simultaneously.

The relationship between the first education buildings in Albania and the religious edifices, is the main focus of this research which traces the history of Albanian education and school's architecture. This study tries to understand the first steps and traces of education in Albania and the buildings that hosted it, by evaluating the history and the structures where the process of learning and teaching happened.

KEYWORDS: School Buildings, Religious Edifices, History, Architecture

INTRODUCTION

“The first Albanian primary school with full national, secular and democratic physiognomy.” (Myziri, 2003, 133) is related to Korça School, opened on March 7, 1887, but the first traces of education in Albania are closely related to religions and to several occupiers during the centuries. As in many other countries, even in Albania, clerics, priests, nuns, imams etc. were the first to try to spread religion and education simultaneously. They gathered the masses teaching the Bible or Quran, next to or within the place of worship. Mostly of these teachers were Albanian and they secretly spoke and taught Albanian language, transforming these buildings into the first Albanian schools.

Through this study is sought to make clear that the first schools were religious one, or teacher's houses, etc., and they date back long before Korça primary school. The intention of the paper is not to reduce the values of the Albania National Awakening movement, (1830-1912) where a lot of effort was dedicated in educating the population. It tries to bring some examples of schools functioning in Albania before the date settled. The research is done through magazines, archives, photos, and several documents which explain and bring back some of the first traces in Albania's education. The study gathers some examples of religious buildings which functioned also as schools.

THE BIRTH AND DEVELOPMENT OF LEARNING PLACE IN ALBANIA

According to Ceka (2003), Albanian education is related with pre-historic period and later with the Roman one. There is very little evidence regarding the Illyrian period but is thought to be based on three principles: military, physical and that of labor.

In the Middle Ages, the Albanian education presents similarities with the Sunday School Buildings, where the religious buildings functioned not only as a place of worship but also as a place of teaching the new generations of clerics and people who wanted to learn the Bible. In the Medieval period schools and education closely linked to the Christian church, and after that to the Islamic religious institutions. Koliqi (2002) mentioned that “teachers were clerics or imams and teaching took place close to churches, monasteries (Catholic or Orthodox) and then later in madrasas which were the first Islamic schools. Dedej agrees: “Education continues to be on cleric's hand. In Albania operated three types of schools: Catholic School in the north, Orthodox in the south, Turkish throughout Albania.” (2003, p. 64)

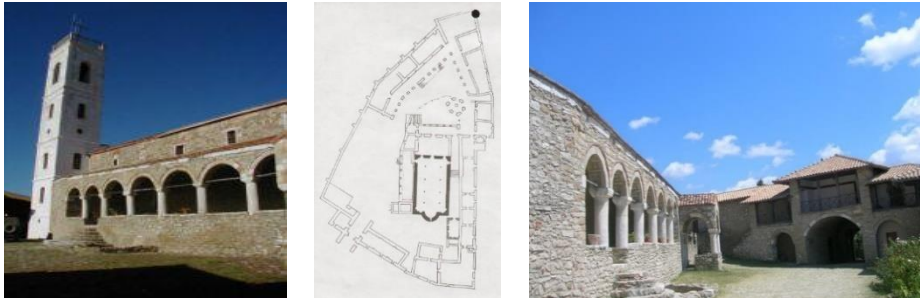


Figure 1: Ardenica monastery. Source: Institute of Culture Monuments

The significance and the symbol that the school presented in the medieval city, could be understood from the explanations of some authors. As described by Vokshi (2014) “the medieval cities had an oriental, chaotic and compact character, where 1-2 stories houses gather around the religious building...” which in most of the cases was also the school, the library and a place for meetings and announcements. Evlija Celebi (1611-1684), a foreign traveler described the Albanian cities, giving data on their cultural and historical characteristics “with tens of mosques and near every mosque there were a madrasas”. (Kazazi, 2014)

The presence of attached libraries next to the mosques was also a testimony that they functioned as a worship place and also a space for learning and reading, for the young Muslims. As for the case of Tekke Helveti, Berat, which dates on 1492-1493. According to the data attached to it there was a library that was linked to Tekke. The library building was burned during the First World War.

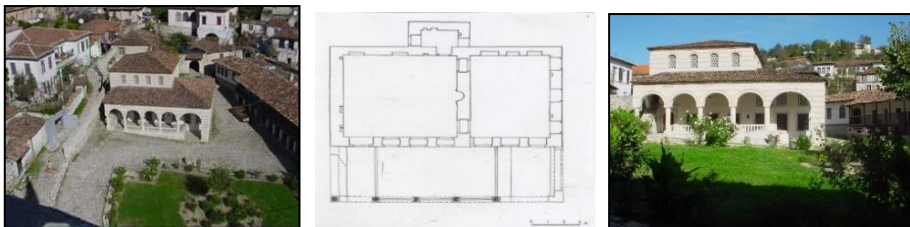
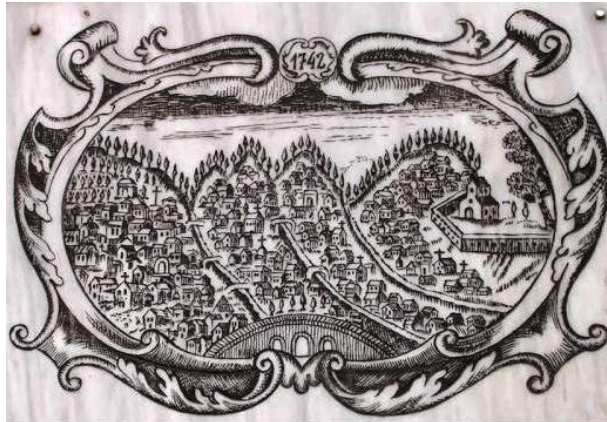


Figure 2: Tekke Helveti, Berat. Source: IMK

Koliqi together with various authors emphasize that one of the schools to be mentioned during this period is the ‘Academy of Voskopoja’ which initially opened as a primary school and then in 1744 turned in high school. The “New Academy” school, which was based on

the European model with subjects of Greek, Latin, philosophy, theology, etc., was recognized for the introduction of contemporary methods in education and recognized in the Balkan Peninsula. (Koliqi, 2002, p114) In addition to the school's academy, the building of the printing house, the rich library and other buildings were added, which attest to the importance and values that this school has given in education. Academy, printing house, library etc. burned in a mysterious way in 1767.

Figure 3: Engraving of Voskopoja during the medieval period, year 1742.



In all three Albanian regions, that of Shkodra, Ioannina and that of Misir, new schools were spreading like the example of “cultural education complex” in Shkodra, This complex of the 18th century, included the madrasas, the dormitory, the library and were opened firstly by Mehmet Pasha Bushati (The Old), during 1760-70, in the neighborhood of “Qafë” and later close to the “Grand Mosque of Bazaar”.

Kazazi (2014) mentions also the primary and secondary school *Mektep Rusdiye Asqerije* next to the bakery of Bejlikut. “Although this building was based on Eastern and Oriental model, and even though the madrasa was religious and the teaching was conducted in Turkish, etc., it influenced the cultural and educational development not only of Shkodra but of the entire region.” (Osmani, 1994) Of this period were also known the high school “Marruci” and the madrasa of Ioannina (Koliqi, 2002).



Figure 4: Photo of Madrasa and the library in Shkodra. Source: Central Technical Construction Archives

While for many scholars the development of education under Islamic influence was not considered as progress since the schools were under religious influences, it must be accepted that all the facts clearly show that these “schools” were a step forward in the development of education’s culture and that these were the first traces of school buildings in Albania. “At the end of the XVI century the invaders opened the first Turkish schools, while in the 17th century the number of these schools grew rapidly. Although essentially “the madrasas were Islamic institutions, they were intended to act over all human classes and to disseminate the knowledge ...” (Kazazi, 2014, p. 36) “The opening of a large number of elementary schools (*Mektepe*) was followed by then to a considerable number of secondary schools (*Madrasas*.” (Dedej, 2003, p. 68)

Despite the fact that the largest number of schools in Albania were sustained by Muslim religious schools, there were also some Catholic schools protected by the Austrian cult protectorate among the Albanian Catholic population. Among the Franciscan and Dominican religious orders were built many schools in Albanian lands, where the University of Durrës can be mentioned. Koliqi thinks that the University of Durrës opened in the 80s of the XIV century and was one of the first universities in Europe. (2002, p. 53)

Some of the Catholic schools of the nineteenth century were mentioned by researchers Kazazi and Koliqi positioned in the province of Shkodra and the northern area:



Figure 5: Photograph of pupils of the school (mejtebe) Ruzhdije in Shkodër, 1876. Second level school with three classes. Source: Central State Archives

One of the first ones is the Clergy school of Shkodra opened during 1854-1855 in one small house with only two rooms donated by the Catholic charitable people. (Kazazi, 2014) Subsequently the “Franciscan Seminar” became a well-known elementary school and in 1871 the Albanian language was introduced as a subject. In 1902 it passed under the direction of Gjergj Fishta as a school entirely in Albanian language. On the basis of Clergy school and according to the Franciscan Order in 1921, Gymnasium “Illyricum” was established.

On February 7, 1859, the “Albanian Pontifical College” opened, aiming at preparing Catholic clerics. It was directed the same as the Saverian College by the Order of the Jesuits. The “Saverian College of the Jesuits” opened in 1877, in the city of Shkodra, and in just one year became a true gymnasium. The school was named the Collegium of Saint Francis of Saver and until 1888 was held with private funds, afterwards in the framework of economic aid to Catholics in Albania was awarded a fund from Austria. During its lifetime there were various realistic, technical, commercial, normal profiles, but always at the core of its profile, it had the features of the classical gymnasium. (Kazazi, 2014) While in 1879, Stigmatine Sisters opened the first elementary school for girls. (Kazazi, 2014, p.20)

In addition to the schools of religious character during the years 1800-1861, Kazazi mentioned 12 schools (8 for boys and 4 for girls) of practical character - education institutions related to vocational training (craftsmen) (2014, p.114) Many Albanian patriots tried to spread education around the country and somewhat changed the alarming

numbers of illiteracy in Albania. “In the 1840s about 98% of the population was illiterate.” (Dedej, 2003, 90)



Figure 6: View of the Franciscan Collegium, Shkodra, Marubi Studio. Otherwise, it was called “Clergy school of Shkodra”. Source: Central State Archives

According to the last data of the 19th century, in the fourth vilayet of Shkodra, Kosovo, Manastir, and Ioannina, where Albanians constituted a compact majority of the population, there were: 1187 Turkish-language schools, of which 1125 elementary, 57 primary and 5 secondary schools, more than 1000 Greek-language schools and over 300 schools in Serbian, Bulgarian, etc., without mentioning the Italian-language schools held by Austria-Hungary and Italy.”(Myziri, 2003, p. 123). On the same idea is also Koliqi who states: “The schools that prevailed were primary schools in Turkish, Greek, Catholic schools in Italian, Bulgarian, Serbian, Vlachs etc. (Koliqi, 2002, p. 140)

The data of 1898 (1316) indicate that the schools in Turkish were:

- Primary school (First level school with 4 grades, *ibtidaiye*), in Ioannina (128 pieces), Bitola (451 pieces), Shkodra (101 pieces), Skopje (445 pieces)
- Secondary schools (*rusdiye*, or city schools with 3 grades), in Ioannina (11 pieces), Bitola (17 pieces), Shkodra (5 pieces), Skopje (24 pieces).
- High schools with 4 levels were 2 in Bitola and 1 in Ioannina, Shkodra and Skopje. (Secondary schools were of the type of civil gymnasium, military school, or normal school for the preparation of teachers)

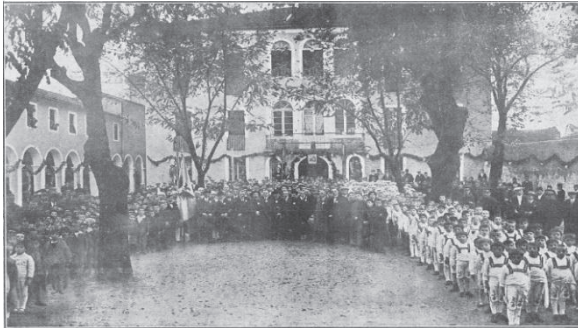


Figure 7: Saverian College of Jesuit. Left: year 1889. Right: on the occasion of the 50th anniversary of its creation. Photos Marubi. 1927. Source: Central State Archives



Figure 8: Schoolgirls of Selezjane School in Shkodra, Religious School for Girls by Stigmati Sisters. 1923. Source: Central State Archives

As cited by Koliqi (2002), there were over 1000 schools in Greek, which were divided into: first-grade schools, second-level schools (licks) and third-level schools – universities, in Vlach language 40

schools, Bulgarian and Serbian 20-30 the school and in Albanian were only 2 schools in the city of Korça.



Figure 9: Greek School in Durres, Source: Central State Archives

FORCES IN EDUCATION DEVELOPMENTS

Schools where the Albanian language was taught and schools opened by the Albanians are evidenced through different witnesses of history even before 1887 but for the existence of the Albanian schools there is no concrete data before 7 March 1887 where the primary school of Korça was opened, and “it represented the first Albanian primary school with full national, secular and democratic physiognomy.”(Myziri, 2003, p. 133).

The spread of Albanian schools had some deterring factors:

- There were just a few students which learned in religious buildings, and had the money to pay for private lessons, in parishes and monasteries from bishops and educated clerics, while the majority of population couldn't pay for their education.
- Albanians refused to go to the madrasas, or monasteries as the language, the culture and the religious were imposed by the invaders. During 500 years of Turk's oppression there were difficulties in finding learning places for Albanian population which refused to go to the mosques and madrasas, and the educational process was done in improvised places, houses, barns or storehouses. (Gecaj, 2008) “Cultures of Albanian schools were not recognized.” (Dedej, 2003, p. 45)
- The Ottoman Empire in Albania did not admit that there were Albanians and used religious denomination to determine their nationality, dividing Albanians as follows: 1. Muslims were called

Turks and could learn in Turkish schools, *Mektebe* (elementary Muslim schools) and *Madrassas*; 2. Orthodox were called rum (Greeks) who could attend Greek schools; 3. Catholics were referred as Latin and they could be educated in Catholic clergy schools. (Bakiu, 1998) However Bakiu points out that the Ottoman Empire had no organized education by the state.

According to Anne-Maire Chatelet, "Public Schools in Europe developed a lot in the 19th century, since the establishment of democracy and the right to vote required every person to read and write." Based on this reason, most European countries dedicated much effort to initially educate male and later, female populations. Education in Europe and Albania "passed hand in hand with the process of transformation from religious schools to secular education, with professors instead of religious ones, and placing schools in other buildings and not in churches." (Anne-Marie Chatelet, Marta Gutman, 2004)

Educational developments also relate to the evolution of cities and the need for practical learning. In the ranks of the bourgeoisie and rich strata of population, it was a necessity not only learning national language but also foreign languages as a way to trade, development and communication with the world. (Kazazi, 2014, p. 15) In Albania, during the Albanian National Renaissance (1830-1912) the same parallelisms were observed where two types of schools were created: special ones for the bourgeoisie and others for the children of the working masses. While schools of rich children appear with much better construction and favorable conditions "... Primary schools of children of working class, continued to be in a miserable state, although the bourgeoisie sometimes declared compulsory primary education. "- (Dedej, 2003, p. 91)

As these buildings represented the Roman or Ottoman Empire, and the language and lessons were not in Albanian the population refused them massively from time to time, but still the need for education brought the youth near the mosques, churches, monasteries, showing to the Ottoman Empire and the Roman one that through education and the religious buildings, they could conquer Albania's population in an easy and peaceful manner.

Although the schools (churches, mosques, madrassas, mektebs, monasteries, parishes etc.) had a religious character and the books were written not in Albanian, yet most of the teachers were Albanian and tried to speak Albanian inside these buildings. Unofficial Albanian schools were born since the Middle Ages and all these secular or non-

residential environments can be considered as the first Albanian school buildings.

CONCLUSION

This paper brought several different examples of school buildings of a period earlier than the date of the first Albanian school, in order to understand the developments and the reasons for this progress in Albanian education. The buildings that hosted education in Albania were the religious ones and schools started in small rooms or libraries linked to the mosques or churches. Albanian imams and clerics taught Albanian language to the children and masses, in the worship place, forming the first schools in Albania.

It is understood that schools in Albania were kept by religion, like Catholic ones with churches, monasteries, parishes, and Ottoman with mosques, mektebs, and madrasa. Albanian schools during Middle age and the Awakening Movement, although in a small number, went parallel to the ideology of schools in the world where education was run by the clergy or by some of the bourgeoisie who sponsored them.

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SPACE AND TECTONIC. AN INTERPRETATIVE KEY TO THE RELATION BETWEEN ARCHITECTURE AND CONSTRUCTION

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ABSTRACT

The paper deals with the relation between idea of space and tectonics from a point of view that tries to extend the concept of tectonics to all the building systems and give it a syntactic nature, capable to determine or at least condition the characters of the architectural space. The dissertation is based on the conception of tectonics as “art of joining”, that is, as a syntax that presides over the relations between the elements of construction, independently from the building systems, the building techniques and the nature of the construction materials.

According to this interpretation, the concept of tectonics can be applied to all the building systems, which are generally ascribable to the two basic building systems: the trilithic system and the masonry system. This means that it is possible to talk about the tectonics of the trilith as well as about the tectonics of the wall, since both imply the assembly of elementary ‘pieces’ according to different principles, that is, according to different syntaxes congruent with the respective static-constructive logics of the two systems themselves.

In architecture, therefore, tectonics has the same syntactical nature of building type. In order to clarify this analogy, we could say that tectonics is to construction as building type is to form.

As a syntactic principle that governs the relations between the elements of the building system, tectonics confers on the built form the characters intrinsically linked to its relational law; therefore, it is at the same time a technical and aesthetical category. For this reason, the choice of a building system is not and cannot be a choice disconnected from the process of definition of form.

The recognition of this ‘expressive’ value of tectonics inspired and determined in the past the development of the building systems; it influenced their choice in relation to their intrinsic differences that are

certainly ascribable to their different spatial 'vocations'. On this recognition, that implies the attribution of specific characters to the building systems, it is possible to found an interesting interpretation of the relation between idea of space (both architectural and urban) and construction, according to which it is exactly the relation with the different ideas of spaces that justifies the different syntaxes defining the tectonics of the different building systems, developed in order to correspond to those ideas, and makes them significant.

This interpretation of the relation between space and tectonics can enlighten the difficult - and often confusing - relation between form and construction in contemporary architecture, where construction, pushed ahead by technological innovation, tends to have an autonomous and self-referential role.

KEYWORDS: space, tectonics, building systems, constructive syntaxes, architectural characters

INTRODUCTION

These considerations about the relation between space and tectonics in architecture are based on the conception of tectonics as “art of joining” (Borbein, 1982), that is to say as a syntax that presides over the relations between the elements of construction, independently from the building systems, the building techniques and the nature of the construction materials. According to this interpretation, the concept of tectonics can be applied to all the building systems, which are generally ascribable to the two basic building system: the trilitic system and the masonry system. This means that it's possible to talk about the tectonics of the trilitic (architrave above columns/pillars) as well as the tectonics of the wall (stone blocks or bricks assembled together in different ways), because both generally imply the assembly of elementary ‘pieces’ according to different principles, that is, according to different syntaxes, congruent with the respective static-constructive logics of the two systems themselves.

TECTONICS AS CONSTRUCTION SYNTACTIC STRUCTURE

The distinction between ‘tectonics’ and ‘stereotomy’, derived from Gottfried Semper, creates confusion about the same concept of tectonics, as it implies its exclusive belonging to the trilitic or frame system. Kenneth Frampton himself is aware of the limits of this oppositional duality when he recognizes that even the “masonry, when it does not assume the form of a conglomerate (...), that is to say when it is bonded into coursework, is also a form of weaving, to which all the various traditional masonry bonds bear testimony” (Frampton, 1995).

Stereotomy (literally “cut of solids”, from the Greek words *stereós* = solid and *tomía* = cut) constitutes, in the field of the masonry building system, the corpus of the theoretical and technical knowledge regarding the design and the construction of the cut-stone vaulted structures. The ‘stereotomic’ architecture, constitutively provided with geometrically and statically complex vaulted structures, is governed by a constructive syntax, that is, by a tectonics that confers its general characters and allows us to distinguish it from a ‘trilitic’ or frame architecture, which is governed by a different tectonics.

Once this duality is overcome, the concept of tectonics assumes a general value attributable to all architectures, with respect to which it is possible to recognize the differences between the building systems, between their constructive syntaxes and their specific characters.

In architecture, therefore, tectonics has the same syntactical nature of the building type since both express a relational 'structure'. We could say, in order to clarify this similarity, that tectonics is to construction as building type is to form.

As a 'syntactic' principle that governs the relations between the elements of the building system, tectonics confers to the built form the characters intrinsically linked to its relational law; therefore, it is at the same time a technical and aesthetical category. For this reason, the choice of a building system is not and cannot be a choice disconnected from the process of definition of form.

The recognition of this expressive value of tectonics inspired and determined in the past the development of the building systems; it influenced their choice in relation to their intrinsic differences that are certainly ascribable to their different spatial 'vocations'. On this recognition, that implies the attribution of specific characters to the building systems, it is possible to found an interesting interpretation of the relation between idea of space and construction, according to which it is exactly the relation with the different ideas of spaces to justify and make significant the different syntaxes that defines the tectonics of the different building systems, developed in order to correspond to those ideas.

Auguste Perret, in one of the epigrams of his treatise *Contribution à une théorie de l'Architecture*, after defining architecture as the unique between the arts devoted to the creations of space, deals with the issue of the relation in architecture between space and construction, between the idea and character of space and the building system. According to him, if the supreme purpose of architecture is "the thoughtful making of spaces" (Perret, 1952), the building systems and the techniques corresponding to them can only be defined and developed in accordance with this purpose.

Indeed, the history of architecture teaches us that the invention and development of a building system, the definition of its constructive 'grammars' and syntaxes, are closely linked to an idea of architectural space; its use is determined by the intention to explore and represent this idea according to the character of the building.

In the great constructive cultures of the past this relation is always clear: their architectural works never derive mechanically from the simple availability of a building technique; on the contrary, they are exactly the development and use of a building technique to derive from the will to achieve through the built forms certain spatial results,

connected to a defined conception of architectural space. And it is from this primary will that the technique gets its meaning and value.

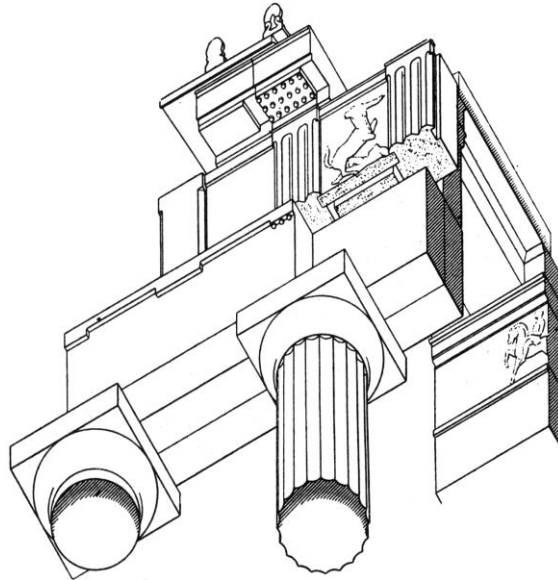


Figure 1: A. Choisy, constructive knot of a Doric temple (Choisy, 1899)

In this perspective, the trilithic system, the masonry vaulted system and their variations and combinations can be considered as the technical ‘means’ through which the different conceptions of architectural space have been realizing and expressing themselves through time.

The trilithic system, as defined and codified by Greek civilization in the classical age, shows its adequacy to the condition of “externality” connected to the idea of space pursued and represented by Greek architecture. Greek temple is the clearest example of “architecture mainly developed, almost exclusively, as an exterior” (Brandi, 1956); it tends to define itself like a solid volume, like a sculpture, and its peristyle, constructively defined by the combination and juxtaposition of discrete elements (columns and architraves), always recognizable in the tectonics of the building, assumes the role to define and express it as an “exterior”, revealing its congruence with the idea of Greek space and its dominant theme of “externality” (Brandi, 1956).

Instead, the masonry vaulted system is constitutively linked to the idea of “internality” (Brandi, 1956). It has been used from those building

experiences that pose the construction of the interior space and the representation of its values at the basis of the architectural expression.

As Sergio Bettini maintains talking about Roman architecture, “it is the will to shape interior spaces in tension between them that leads to accept and develop arches, vaults and domes” (Bettini, 1978) and to make of these ancient elements, ignored by Greek civilization, the cornerstone of a new architecture based on the idea of architectural space as an interior “hollow” space. In fact, the wall, as continuous opaque element, the vault and the dome, as masonry elements that are moulded to cover the space, evoke spatial values of “internality”. Their continuous, homogeneous, concave surfaces seem to have this vocation to delimit, enclose and contain space, that is, to define “spatial cavity” and not simply enclosed spaces. Considering the interest of the Romans toward the idea of space focused on the expressive values of “internality”, it is not a coincidence that the masonry vaulted system, already used among other previous civilizations, was developed and widely used in the Roman civilization, which was able to recognize its vocation and spatial characters and make them corresponding to its own idea of architectural space as interior hollow space.

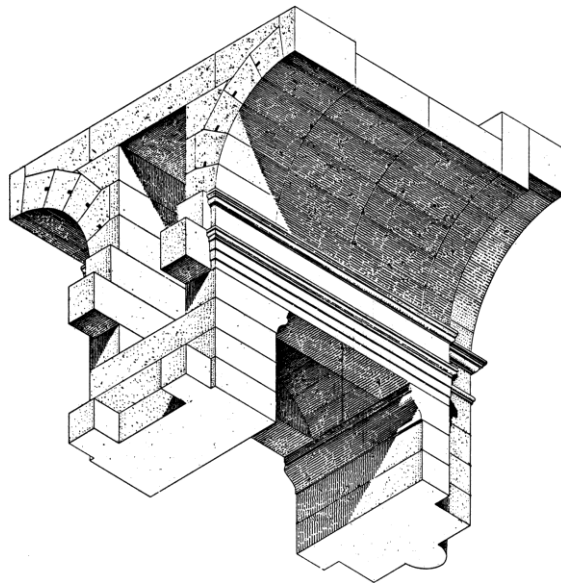


Figure 2: A. Choisy, constructive knot of Roman amphitheater in Arles (Choisy, 1873)

Therefore, the lesson of Greek and Roman architectures is paradigmatic: they show us that the building systems have an intrinsic spatial 'vocation', that is, the capability to confer to the built space their specific characters, related to the form of the elements and their constructive syntaxes: the 'finiteness' of the elements and the distinction between vertical/load-bearing elements and horizontal/borne elements of the trilitic system and the continuity and homogeneity of the parts of the masonry system; the three-dimensionality of the column and the two-dimensionality of the wall; the lightness, linearity and the 'airiness' of the trilitic system and heaviness, opacity and massiveness of the masonry system.

These characters, directly represented through the forms of construction, determine the characters of the built space. In the trilitic construction the discontinuity between the elements and their finiteness determine the character of "externality" of the architectural space. Instead, in the masonry construction they are the thickness and continuity that characterize it in order to connote the "internality" of space.



Figures 3, 4: Athen, Efesteion, 450 B.C; Rome, Basilica di Massenzio, 310 A.D.
(photos of the author)

SCHINKEL'S ARCHITECTURE AS A PARADIGM

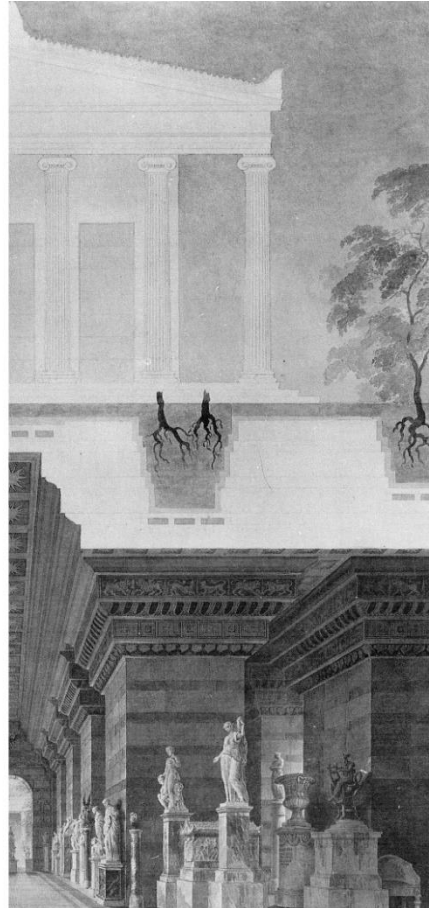
For this interpretation of the relation between idea of space and tectonics the architecture of Karl Friedrich Schinkel has for us a paradigmatic value. In his works, Schinkel uses both building systems (the trilitic and the masonry) 'inflecting' and interpreting them according to the styles of his time. Often, he uses them in the same building by giving each of them the role of defining different spatial conditions, corresponding to the ways in which the building defines its typological theme and relates to the place.

About these, two works are paradigmatic: the Altes Museum in Berlin and the Palace in Orianda, with its Crimea Museum, an unbuilt work designed for the czarina of Russia.

In the Altes Museum in Berlin Schinkel expertly ‘blends’ the two building systems to respond to the two constitutive themes of the building: defining an interior ‘introverted’ space, aimed to accommodate the place of the museum, and at the same time establishing a meaningful relation with the external space of Lustgarten with the objective to delimit it on the north side and turn it towards the Spreekanal and the urban axis of Unter den Linden. The volume of the building, a rectangular base parallelepiped, is identified by four cantonal stone pillars that rest on a podium and seem to bear the entire roof, identified by the continuous band composed of the lintel and the overlying cornice. Three of the four lateral faces of the volume (corresponding to the side and back façades) are closed by stone walls ‘discretized’ by the openings of the two orders of windows and by the intermediate architrave, which stops at the corner pillars. The fourth face, corresponding to the façades facing the Lustgarten, is instead defined by a giant order consisting of eighteen Ionic columns having the same height of the corner pillars. Behind this row of columns, at a distance of about three meters, a wall with no openings, less thick than the walls that define the volume of the building, separates the internal space from the external one, opening only in correspondence of the access staircase. Schinkel uses, therefore, the masonry system to define the characters of “internality” and introversion of the space of the museum, which are exalted in the central domed space; instead, he gives to the trilithic system the role of construction of the relation between the building and the open space of the square-garden, relation resolved by the beautiful and airy *loggia*, a sort of Greek *stoà* whose open oriented space mediates between the “internality” of the space of the museum and the “externality” of the square and make meaningful the position of the building in the urban context of the Museum Island.

The Crimea Museum, placed in the ‘introverted’ space of the main courtyard of the Palace in Orianda, consists of two parts: a rectangular base stone podium, arranged along the main axis of the composition, which raises up over the top of the courtyard enclosure a *belvedere* pavilion, totally open towards the landscape. The podium is conceived as a part of the ground, a ‘telluric’ architecture firmly anchored to the ground as it was obtained from it by carving. It raises in the space of the garden as a compact and massive block, engraved on the sides by the stairs going up on its top, whose nature of ‘ground’ is enhanced by the

trees that are planted on it. Its interior space, aimed to accommodate the Museum of Crimea, evokes the characters of the spaces of hollow underground architecture, spaces obtained by subtraction of material, carving the solid and compact mass of the rock. The tectonics of the building system and the form of the elements converge in the achievement of these characters.



Figures 5, 6: K.F. Schinkel, Altes Museum in Berlin (photo of the author); K.F. Schinkel, Museum of Crimea (drawing of W. Loeillot, 1847)

The *belvedere* pavilion is, instead, a peripteral temple without cell. Its airy and light volume, defined by two rows of columns and by the roof, is in a strong contrast with the massiveness of the underlying podium. The space of the museum with its character of “internality” is in

consonance with the character of “internality” of the space of the imperial courtyard; instead, the open and airy space of the pavilion interprets the relation of the entire building with the place, defining and characterizing a panoramic viewpoint completely open towards the extraordinary surrounding landscape.

CONCLUSION

In both works Schinkel uses the building systems, carefully chosen for their respective spatial ‘vocations’, as means of expression of form, that is to say as ‘tools’ necessary to confer on the architectural form and space the characters that they must have according to the themes and meaning of the building. For the parts that need to express lightness, airiness, “externality”, ‘extroversion’ he chooses the trilithic building system, highly represented by the Greek order; conversely, for the parts that need to express massiveness, delimitation, “internality”, ‘introversion’ he opts for the masonry building system, ‘decorated’ by the form, rhythm and proportion of the openings and by the representation of the construction principle (through the visibility of the masonry texture as result of the disposition and stratification of the material). This correspondence between idea of space, building system and decorative system, conceived as an analogic system representative of the construction itself (Monestiroli, 2002), their concurrence in the common representative purpose of the building’s theme and character make architectural form expressive and meaningful.



Figures 7: Eric Ruiz-Geli, Media ICT Building, Barcelona 2010 (photo: innochain.net). Best Building of the World by WAF, 2011

This is Schinkel's lesson, this is the lesson of history of architecture for our time, dominated by technological progress, which independently develops innovative construction systems and materials, and increasingly characterized by the self-reference of the technological paradigm and by the ostentation of the construction technique as it was the main purpose of architecture.

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THE BLENDED NATURE OF CZECH ARCHITECTURE IN THE EIGHTIES

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ABSTRACT

This text explores Czech architecture of the eighties, when its basic nature was shaped by new (mainly foreign) influences. The almost free and more or less internationally oriented sixties, a time of experimentation and cooperation with artists and technology, was followed by the 'normalisation' era in the seventies, along with the oil crisis and a revision of the modernist concept. Nevertheless, Czech architecture and the young generation in particular were still able to benefit from a traditional technicist pragmatism and a respect for the local landscape and historical context, but also from slow infiltration of the new ethos of postmodernism and social or environmental responsibility. The result (of the combination of these impulses) was an often exciting and diverse mix of features and ambitions lying somewhere in between high-tech and romanticism.

KEYWORDS: postmodernism, contextual architecture, technicist architecture, socialist economy

INTRODUCTION

Post-war architecture in state-socialist Czechoslovakia underwent dramatic changes which faithfully reflected the internal political developments and processes going on in the Eastern bloc but also responded to ideas and inspirations that filtered in from the other side of the Iron Curtain.

Architecture was fundamentally impacted by the system of the centrally planned economy, which was controlled by politically motivated interests and rigid five-year economic plans and as the country fell increasingly behind the advanced Western economies quantity became the primary focus. The profession of architect, which originally had for the most part been an independent creative and entrepreneurial occupation, was also subjected to collectivisation after 1948. In the state-run planning institutes architects became ordinary employees, whose work was heavily determined by political priorities and the limitations to what the construction industry could produce. Architecture was increasingly impacted by the strict demands for standardisation and prefabrication that were asserted to ensure lower prices but also greater control over state-funded building development.

The nature of the state's showcase projects also changed over time. Residential complexes were of course a recurring assignment, along with projects aimed at improving the wellbeing of the people and the accessibility and standards of amenities. There was a distinctive progression from the expressively and technologically very simple ensembles of the 1950s put together with city-shaping objectives, to the typologically and visually experimental housing estates of the 1960s with their elaborate parterres, followed by the building development in the early normalisation-era 1970s with its quantitative focus, and eventually by the first attempts to humanise housing estates shortly before the Velvet Revolution. Another major phenomenon, however, was public buildings, which were a faithful reflection of the transformation of shared values. The 1950s were characterised by strictly controlled propaganda and the construction of culture houses, and the 1960s by growing consumerism and the increased importance of the country's international image – represented, for example, through department stores, embassies, hotels, and especially the buildings of the Foreign Trade Enterprise. The entire post-war era was marked by the large-scale construction of hospitals, schools, and sports facilities, and for these structures the regime constantly tried to assert standardisation and prefabrication, succeeding, fortunately, for the most part only in the case of smaller assignments.

In terms of their visual expression, public investment projects went through some generally well-known twists and turns. The 1950s were dominated by forced inspiration from Soviet Socialist Realism, which Czech architects resisted with ethnic-folk and small-town motifs and an emphasis on monumentality, ornamentation, craft, and visual art, or by escaping into typologically or technologically sophisticated, i.e. un-standardisable types of structures or into heritage conservation. With the 1960s came a shift towards the Western take on the International Style, wittily blended with the still vibrant tradition of poetic interwar functionalism and with the interdisciplinary and artistic aspirations and optimism that followed in the wake of the Czechoslovak Pavilion's success at Expo 58 in Brussels. As the 1960s came to a close, the influence of brutalism and a technicist approach also surfaced.

What new challenges were ushered in by normalisation's social flattening in the 1970s and 1980s? Most notably, an emphasis on prefabrication, the favouring of certain producers of building materials, and a great increase in scale. Architects caught up in the tangled labyrinth of the centralised socialist construction industry nevertheless 'learned how to walk' and managed to get past the technical and economic constraints by drawing on interesting impulses from abroad (postmodernism, high-tech, context, ecology etc.) and by means of their own self-reflection. The atmosphere in society was oftentimes reflected in the creation of structures that had no effort put into them and were rightly criticised. To the same degree, however, from the middle of the 1960s there also began to appear extraordinary structures that mixed inventively with the creative applications of politically prioritised building materials and technologies (e.g. ceramic tiles, reinforced-concrete prefabricated parts, uniform glass curtain walls or windows, glass blocks, or Feal Sidalvar aluminium and plastic cladding).

Up until recently the architecture of the 1980s was underrated by the professional community and the general public and was regarded as merely a product of the supreme industrialisation of a centralised construction industry. However, recent and for now still rather groundbreaking studies and interviews with contemporaries have uncovered a world of surprising diversity within that industry, hidden beneath the surface of what the regime officially boasted about and what, conversely, after the Velvet Revolution and the beginning of the years of democracy was sharply criticised.

THE SKELETON-FRAME STRUCTURE AND ITS SURFACE

The standardisation of public buildings in the interest of achieving the economical and rapid provision of public facilities (especially in new urban developments) had been a theme that had been gaining in strength since the 1950s. Initially it was more a matter of unifying projects and construction processes, but in the 1960s there emerged a number of buildings that were built using complex sets of prefabricated construction components. Most of these were panel apartment buildings built together in housing estates. However, efforts to impose a uniform design on the buildings of civic service facilities by employing the same or only slightly modified project for the building and using uniform construction and façade components (fortunately) was for a long time unsuccessful. An exception was formed by structures that 'offered little resistance' to the objective of achieving uniformity – as well as residential apartment buildings this mainly meant schools or small shopping and health centres.

The occupation of Czechoslovakia by Warsaw Pact troops in 1968, however, ushered in a process of strict socio-economic normalisation. In architecture this was directed at strengthening political oversight and centralisation, and especially at accelerating and cementing the turn towards uniform projects and prioritised construction technologies (usually ones that were less demanding in terms of production and costs). A typical example was a sports hall with a pool, sauna, hotel, and snack bar, a standardised 'un-predefined' design on flat terrain, except for minor modifications implemented exactly according to the standard design in Nový Jičín (František Šaman, 1970–1975). This model of socialist, centralised architectural planning (a single type and standard applied in multiple locations) could not however be followed when it came to larger and functionally complex buildings. The construction process and legislative procedure that accompanied them went on so long that in the course of it all the project became outdated and could not be implemented again on a different site. It was smaller structures that tended to be more successful, such as the BIOS standardised sports hall in Kolín (Jan Nováček, 1986), built according to the same design also in Prague, Mělník, Kutná Hora, Poděbrady, Nové Strašecí, Slané.

Ultimately, an alternative that had been around since the 1960s presented itself in the form of unified reinforce-concrete frames, designed in several series according to load-bearing capacity and span lengths and with enough universality that they could be used in almost any public building (steel constituted a strategic material that could only

exceptionally be used in architecture). Architects thus had a starting point for their design, on which there was little they could discuss with their contractor, but which at the same time offered sufficient leeway and the certainty of easy availability and firmly fixed construction parameters.

One of the ways in which it was possible in more ambitious projects to play up the rational essence of a reinforced-concrete frame was, most notably, by amplifying its characteristic features, i.e. its modular-compositional nature. This approach has been described perfectly by architect Jan Bočan: 'My work includes the administrative centre at Družba station. I got a frame, which had 7.2 x 7.2 m spans. That's all. And I had to make the centre of a town based on that. I tried to do that, and the notion of a table-building has stayed with me ever since then. All my life I've been preoccupied with squares – so I made a small square, I divided it into more squares, and so on. This gave rise to a visual motif, and I believed that I had thereby discovered the entire world! And I did the entire town using the table–building principle and the 7.2 m modulus. Today I'm glad that it remained just at the level of a design ... What I mean by that is that everything we have in our catalogue now we came up with also before, but in a primitive way.' (Urlich, P., Vorlík, P., Filsaková, B. et al. 2006) It was just this kind of prosaic approach and straightforward honesty that was behind the design for the façade of Lužiny department store in Prague created by two of Bočan's colleagues (Alena Šrámková, Ladislav Lábus, 1977–1991).

Most architects, however, chose the opposite approach, where the frame was just a hidden structure that offered adequate layout flexibility, and the structure was then wrapped in an autonomously, artistically, and abstractly conceived façade. Typical examples of this are the buildings with a minimum of windows, department stores in particular, whose exteriors are often covered with ceramic reliefs covering large areas of surface or with malleably applied reinforced-concrete prefabricated components and standardised glass façade panels. The interplay of three factors had an important role here: the popular and politically acceptable inspiration provided since the 1960s by Scandinavian architectures; massive political support for the production of ceramic tiles in all variety of shapes, colours, and robustness; and a legislative requirement that architecture organically incorporate works of art. After the negative experience with socialist realism and in resistance to politically acceptable motifs, architects had since the 1960s been experimenting in interiors with the use of relief

and artistic ceramic or stone cladding. Support for the production of ceramic tiles in the 1960s and for making them more robust and available in a wider variety made it possible for it to be used on façades or allowed even the addition of colourful mosaics. The transference onto the façade of interior-scale motifs and motifs from other artistic techniques had a significantly enriching effect on the diversity of public buildings in socialist Czechoslovakia (e.g. department stores Prior in Teplice, Jaromír Liška, 1984, or in Chomutov, Jaromír Liška, Anděla Drašarová, 1982, and in Hradec Králové, Jiří Kučera, 1978–1981) and oftentimes helped to give a new urban centre its own distinct identity (e.g. in Neratovice, Gustav Šindelka et al., from the middle of the 1960s) or complex set of buildings (e.g. the metal, glass, and ceramic tiling in the stations of Prague's underground metro lines). Other architects used the freedom that designing the façade for an assembled skeleton-frame structure offered them to create what almost resembled constructivist or postmodern compositions (e.g. Department Store Uran in Česká Lípa, Emil Příklad, 1975–1984, and Department Store Máj in Kralupy nad Vltavou, Ladislav Stupka, Jaroslav Mach, 1979–1984).

CONTEXTUAL INTEGRATION

In the 1960s there began to be growing pressure for new structures (which were usually very large in scale) to be sensitively integrated into the physically variegated and smaller-scale context of historical towns and cities. Initially there seemed to be no solution to the conflict between the grand ambitions of the time and the modernist ideal of airy solitary structures on the one hand and the limited spatial possibilities of historical centres on the other, and the prevailing options resorted to were demolition, uniting of lots, and dramatic interventions in the existing environment. An important role in this was played also by the demanding and therefore for decades neglected maintenance that historical buildings required but in many cases was simply impossible given the frozen capacity of production firms and centralised economic planning.

A positive shift was brought about by imported inspiration from brutalism and its attempt at achieving a sculptural quality, plasticity, distinctiveness, and emotively visual communication with the user. From the middle of the 1960s brutalism made it possible to introduce into a picturesque historical environment forms that were no less segmented into parts and structured, without the creators having to move away from giving those forms a modernist expression. An important role in asserting the use of richer forms was again played by

the skeleton-frame structure, which allowed for the use of a considerable variety of shapes and scales and, when working on convoluted plots, the possibility to at least to some degree de-concrete the outer sections, i.e. it made it possible to escape the limitations imposed by (having to work with) a fixed construction module and fixed dimensions for the building as a whole. Moreover, in the 1970s there began to be increasingly louder calls in socialist Czechoslovakia for the restoration of historical centres and even of the 'pre-modernist' tenement blocks from the late 19th and early 20th centuries. With the increasing drabness of panel housing estates, the historically developed areas offered an enticing alternative. There even began to appear the first projects focused on the rehabilitation of entire neighbourhoods, though these were rarely implemented in practice (e.g. Prague-Vinohrady).

As part of this overall revision a whole number of new structures were built that in their overall mass and their minute detail were adapted to the surrounding context. There thus began to appear buildings that were zigzag in shape (e.g. Hotel Kamyšín in Opava, Jan Kovář, Jiří Horák, 1979–1985), terraced structures (e.g. Building of the Regional Committee of the Communist Party in Děčín, Miroslav Netolička, 1978–1983), buildings with frond layouts and divided into segments (e.g. Building of the Regional Committee of the Communist Party in Trutnov, Vladimír Vokatý, Petr Skála, 1980–1985), not rarely also accompanied by the rich use of different types of cladding and human-scale elements evocative of traditional, finer details (e.g. Czech Insurance Company in Havlíčkův Brod, Lubomír Driml, Miroslav Řepa, 1980–1983).

There arose also a new effort to evoke the pitched roofs and small-scale lots of the surrounding historical buildings. Variations on this theme mostly commonly appeared in smaller towns as part of the construction of civic facilities. Shopping centres, hotels, and restaurants were intended to serve the wider area and in the spirit of the centralised economy were concentrated within one large structural mass, while at the same time they had to be sensitively integrated architecturally into the (usually historical) town square. In most cases the outcome of this was a robust late-modernist mass that was externally articulated with loggia, cornices, and a variety of materials on the façade, culminating in a kind of attic-like shape that was only intended to evoke the traditional pitched roofs and historical gables surrounding it (e.g. Koruna Shopping Centre in Vodňany, František Petrlík, César Grimmich, 1967–1978, and in Dobrouč, Aleš Granát, 1985–1987, and in Třebíč, César Grimmich, Jaromír Liška, 1972–1983, and Hotel U Dvou čápu in Trhové

Sviny, Jaromír Kohout, Marie Blažková, Věra Turková, 1972–1977, or Sports hall in Chomutov, Martin Kubricht, 1981–1988). In the most radical cases, in the place of the allegedly passé lightness of modernism, towns and cities saw the return of 'solid blocks with windows' (e.g. Building of the Regional Committee of the Communist Party in Příbram, Jiří Merger, Jan Nováček, Stanislav Franc, 1980–1984).

The pitched roof was a motif that also resonated in mountain regions, where variations of form and the use of different added structures and terraces helped somewhat in sensitively integrating into the traditionally built up parts of these mountain regions what were genuinely enormous mass structures designed for centralised recreational activity (e.g. Unions' Convalescence Centre Petr Bezruč in Malenovice, Petr Havel, 1974–1981, and in Svatý Petr, Zdeněk Kuna, Ladislav Stupka, Jaroslav Zdražil, Milan Valenta, 1977–1988, and Kraus's Cabins in Špindlerův Mlýn, Karel Schmied, 1978–1983). Unorthodox fusions of modernism and tradition were witnessed also in the construction of large sports facilities in the high mountains, where architects attempted to tie in with what was going on internationally and with the popularity of the technicist style at that time, while they also had to make do with the insufficiencies of the socialist production of buildings materials and a nostalgia for old romantic times. The outcome not rarely is a strange mixture that is part high-tech and part rustic (e.g. Ski flying hill Čerták, Harrachov, Jiří Špikla, Jan Suchánek, Miloslav Bělonožník, Hans-Heini Gasser, 1977–1983).

THE IDEA OF RESPONSIBILITY

Alongside attempts to revitalise historical centres that had been left in a moribund state after years of focusing solely on building housing estates, a striking phenomenon was the surprisingly sharp criticism that emerged towards the mass and prefabricated production of housing estates and the practice of caring for people's welfare in technocratically designed and operated institutions. In addition to official studies aimed at improving the environment of housing estates and widening the variety and diversifying the appearance of panel buildings, informal activities and events also emerged, usually involving a large part of the younger generation of architects and influenced by the imported and therefore only somewhat politically acceptable ideas of postmodernism. Young architects therefore defined themselves in opposition to the work of their predecessors, improvised, and, by means of what was no minor personal effort, furnished the uniform blocks of panel buildings with a

variety of roof extensions, unusual loggia, accentuated entrances, a richer use of colour variety, or more artistically treated, narrative parterres (e.g. the senior citizens homes designed by Jan Línek and Vlado Milunić in Prague-Malešice, 1979–1987 or in Prague-Bohnice, 1975–1981, and Bubeneč apartments for SSSR administration representatives in Prague, Jan Nováček, Zdeněk Veselý, 1982–1986, and Housing Estate New Barrandov in Prague, Zdeněk Hölzel, Jan Kerel, 1984–1989, or playfully postmodern Dašická apartment building in Pardubice, Pavel Maleř, 1987).

The growing pressure to maintain an economical approach did not necessarily have to express itself only in a negative sense as a preference for prefabricated construction work. Considerable moderation and an engineer's objectivity are a natural part of Czech modern architecture. The experience of the oil crisis, constant shortages in the socialist system (it was literally necessary to go out and search for things), and the enormous amount of pollution inflicted on the environment by heavy industry ultimately crystallised into a direction of work that focused on saving energy. Architects, influenced in part by the first whispers of information and news about environmental movements in the West, were by the 1980s already beginning to look for new forms of public buildings that through their unusual shape, extensive insulation or cladding or by being fitted with (solar) collectors could make better use of solar power (e.g. Cristal, House of Culture in Česká Lípa, Jiří Suchomel, 1974–1990, and Swimming pool, Tachov, Lukáš Liesler, Eduard Schleger, 1983–1992, analogously built also in Břeclav 1983–1991, Hustopeče 1983–1991, Varnsdorf 1989–1994, Hlinsko 1994–1996).

TECHNICIST AND POSTMODERN LEANINGS

In the 1970s, despite the normalisation doctrine, new ideas from the West began to make their way into Czechoslovakia. On one side a movement for total reform emerged in the form of postmodernism, celebrating the diversity and intelligibility of historical architecture and cities, participation, wit, colourfulness, and explosive creativity. On the other side there appeared the first attempts at extreme technicism and high-tech structural architecture, a kind of affirmation of a faith in the power of technology and its ability to solve all of the world's problems, which in architecture specifically was gradually blurring the boundaries between machine and building, design and civil engineering, interior (design) and landscape architecture. Czechoslovak architects enclosed within the Eastern bloc did not usually have an opportunity to take part

in the theoretical discussions that were behind these phenomena and they mainly adopted the external forms they saw in books and periodicals or they formulated the theoretical foundations for them themselves in small groups with tightly shared ideas. The result was a remarkable mix that combined these two essentially contradictory influences with preceding intellectual currents, such as brutalism or intensive cooperation with visual artists.

Characteristic features of this late modern phenomenon in Czechoslovakia included bevelled or rounded corners (e.g. the Czechoslovak embassy in Berlin, Věra Machoninová, Vladimír Machonin, 1970–1978, and Hotel Vladimír in Ústí nad Labem, Rudolf Bergr, Zdeněk Havlík, Miroslav Novák, 1986, or Fire Station in Ústí nad Orlicí, Aleš Granát, 1980–1986) and ‘bonneted’ or double-skin façades (e.g. the telephone exchanges in Prague-Dejvice, Jindřich Malátek, Jiří Eisenreich, Václav Aulický, Jaromíra Eismannová, 1975–1982, and in Hradec Králové, Jindřich Malátek, Jiří Eisenreich, Václav Aulický, Jan Fišer, 1978–1984, and in Prague-Řepy, Václav Aulický, 1979–1984, or the Teplotechna building in Prague, Věra Machoninová, 1975–1984, and Post Office in Prague-Košíře, Jindřich Malátek, Ivo Loos, Jan Fišer, Václav Aulický, 1980–1987). Also popular were ‘mechanically ribbed’ sculptural details, or, conversely, structural details that are suppressed and fused smoothly together (e.g. the head office of Public Transit, Vratislav Růžička, Eva Růžičková, M. Špaček, Boris Rákosník, 1971–1979, versus House of Culture in Liberec, Pavel Vaněček, Michal Brix, Pavel Wieden, Martin Rajniš, 1976–1985); the return of pipe railing and industrial elements, but unlike the interwar avant-garde now in the form of robust and deliberately in some way oversized symbols (e.g. Transgas dispatch building and the building of the Ministry of Fuel and Energy in Prague-Vinohrady, Ivo Loos, Jindřich Malátek, Václav Aulický, Jiří Eisenreich, 1966–1978, or New Check-In Hall of the Main Train Station in Prague, Josef Danda, Alena Šrámek, Jan Šrámek, Jan Bočan, Zdeněk Rothbauer, 1972–1977, or apotheosis of concrete panels on Štvanice tennis courts in Prague, Josef Kales, Jana Novotná, 1982–1986); and of course numerous striking and eloquent giant type and numbering or explicitly rhetorical works of art placed on façades (e.g. artworks with the wooden baskets and balls by sculptor Vladimír Preclík in Folimanka basketball arena).

The lack of genuinely modern construction technologies also led to the improvised use and application of universal cladding across building categories, and the Feal Sidalvar industrial system in particular, commonly used not only in industrial but also transport, administrative,

retail, and sports structures, earned considerable popularity (e.g. Garage in Prague-Malešice, Jaroslav Celý, Antonín Průšek, 1977, versus Sports Hall by Rošický Stadium in Prague, Petr Kutnar, Svatopluk Zeman, 1975–1978, versus Department Store in Děčín, Jaromír Liška, 1984). Equally unexpected borrowings and mixtures of technicist features with the new formal poetics were brought about by using (old)new technologies, most notably glued timber trusses (e.g. Ice rink in Prague-Holešovice, Karel Koutský, Jan Kozel, Vladimíra Leníčková, 1983–1985, versus the new roofing for the Church of St Francis on the grounds of the renovated St Agnes Convent in Prague-Old Town, Karel Fantyš, 1982–1984).

The resulting varied and less straightforward syntheses of modernist technicism with light touches of postmodernism again bore the unmistakable marks of improvisation and the persistent struggle against the insufficiencies of construction output. Looking at these structures, the expression that comes to mind is the phrase Miroslav Masák used to describe the work of SIAL – ‘down-to-earth high-tech’. Or ironically light concept, called Lo-tech (‘low’ representing here the counterpart to ‘high’-tech) by a trio of architects named Tomáš Kulík, Jan Louda, and Zbyšek Stýblo, who employed soft postmodernist features, a multi-coloured modular-compositional style, and emphasis on mobility (e.g. Man-made rowing canal and floating equipment on the site of a former sand pit mine, Račice, Tomáš Kulík, Jan Louda, Zbyšek Stýblo, 1986; Harrachov ski centre, Jan Louda, Tomáš Kulík, Zbyšek Stýblo, Ivo Loos, Václav Mudra, 1989).

The 1980s saw several rare cases in which the use of a steel skeleton-frame was successfully asserted, thereby allowing a freer, more creative, and consciously city-shaping approach to be applied to the façade. A typical example was the need to fill in the vacant spaces that arose with the construction of the underground metro system in Prague. The complicated conditions for building the foundation, the irregular shape of the plots of land, and the delicate historical context made it impossible to use a standardised reinforced-concrete system or façades. The outcome of this could be a postmodernist type of illusory geometric game with city-shaping elements such as an open parterre, the suggestion of a piano nobile or city clock, a style of expression that is robust and suggests the ‘honesty’ of craftsmanship, or tectonic references (e.g. ČKD Administrative Building in Prague, Alena Šrámková, Jan Šrámek, 1974–1983), accented corners and technicistically exposed structures filled in with new ornamentation (e.g. Metrostav Administrative Building in Prague, Aleš Moravec, František

Novotný, 1981–1989), or in some cases an attempt to break down the gigantic mass into smaller ‘houses’ and to mix traditional windows with modernist glass facades (e.g. Ministry of Energy Industry over Hradčanská metro station in Prague, Vladimír Pýcha, Milan Černík, Vít Kándl, 1985–1990).

CONCLUSION

The limited possibilities offered by the socialist construction industry and the socialist system of central planning in Czechoslovakia forced the country’s architects in the post-war years to constantly try to improvise and to engage in experimentation. In many cases, and in the inauspicious political circumstances, the outcome was resignation and a flattening of architectural production. A bright flash of greater freedom and wider opportunities arrived with the sixties. But after the country’s occupation by Warsaw Pact troops in 1968 the political and social situation sharply deteriorated and the distress and shortages also an impact on architecture. However, architects were reluctant to give up their hard-earned space for creative work. Even in the normalisation era they followed developments in architecture and theory abroad and most notably there were still able through great personal commitment and extreme improvisation with limited resources to produce extraordinary architectural works (an important role was played, however, by the rise of a younger, more ambitious generation). These works (public buildings especially) consequently often acquired the hard to grasp features of late modernism, which mixes the rational architectural lexicon of the international style with the structural quality and rawness of brutalism, with the rhetoric and contextual nature of postmodernism, or with enduring intoxication with the rationalism of engineering and technological experimentation.

An interesting feature of the designs described here is that they are not directly tied to the typological structuring of the architecture. Despite the persistent effort to class, catalogue, and find replicable solutions, the methods the late modernism of socialist Czechoslovakia produced are of a freer nature. The criterion of quantity, practical functional analysis, and the selected building technologies favoured by the socialist centrally controlled economy continued of course to play a key role. But architects were increasingly turning their thought towards distinctively individual, more human-oriented, and contextual forms.

The architecture of the eighties in socialist Czechoslovakia is hard to class stylistically in any particular category and is difficult to interpret. We could see this as its weakness and a result of the lack of any central

guiding theory or unifying ethos for that time. Current discussions on the present nature and the future of European cities suggests, however, that broad diversity and layeredness are actually a source of great potential that it would be a shame to overlook and undervalue.

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LIGHTHOUSES AS INTERPRETATIVE FORMS OF CONSPICUOUS COASTAL PLACES

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ABSTRACT

The Lighthouses are elements of orientation in the space of the sea, of measurement of the coastline and, as such, also coastal and territorial centers. They are built in correspondence with conspicuous places on the coast, identifying them as possible destinations for a slow and sustainable tourism, assuming topological and positional value through the correspondence between the forms of architecture and those of nature. The maintenance and re-use of the Lighthouses are part of a new concept of protection and enhancement policies, sometimes no longer restricted to constraint but oriented towards the possibility of offering new life cycles for these monuments as catalysts for the development and renewal of the landscape and the geographical region to which they belong. Words like reuse, recycling, reduction correspond to the need to think projects able to interpret the issues of recovery in a proactive way through the themes of sustainable tourism, naturalistic, cultural, blue growth, slowfood. The objective of the research of which this essay sets out some partial results, has been to identify the constituent elements of the lighthouse and the significant relationships it establishes with the forms of the ground, to understand the grammars of their form in function of the transformations / modifications that can be made without altering the formal and topological value of the lighthouse and the significant relationship that it establishes with the site, to define a protocol of intervention to build the national network of the Cammino dei Fari d'Italia. The case study consists of the lighthouse of San Vito Lo Capo, located at the western end of Sicily in an area strongly characterized by coastal landscape values of absolute importance, punctuated and measured by the presence of other elements such as coastal towers and tuna factories whose recovery combines form of the territory (landscape), cultural stratification, natural and anthropic values, as well as expressing the beginning and the end (measure) of the route of the lighthouses of Sicily

as a constituent part of the wider path of the lighthouses of the Tyrrhenian Sea.

KEYWORDS: Territory, Form, Lighthouse, Sicily, Landscape, Route

INTRODUCTION

Routes are considered as tools that allow to re-activate natural and man-made territories, landscape contexts of significant value, to discover old and new meanings of the places we cross, redesigning ancient corridors of crossing the European landscape and the architectural and environmental cultural, material and immaterial heritage. They are the engines of a deep and non-traumatic renewal that moves from the recognition of the value of cultural heritage, of art, of the landscape, but also of food and wine, of productive traditions, stratified in a sort of palimpsest, usable through new forms of slow mobility that outline trajectories between places and territories in transition. The idea of a Route of the Tyrrhenian lighthouses shares these general assumptions by systematizing Italian lighthouses and highlighting their historical and landscape value but also their territorial centrality. The "Valore Paese-Fari" Project, launched in 2015 and promoted by the Italian Government's State Property Agency, in agreement with the Ministry of Defense and other local authorities, has started the process of disposing of Italian lighthouses in order to reconvert them through actions and heritage recovery, landscape protection and economic development projects. The idea of building a Route of the Italian lighthouses and coastal garrisons combines the assumptions of the two projects of the State Property, Lighthouses and Routes and Paths because it brings together on one hand the unique architectural and landscape value that each lighthouse represents and on the other the narrative dimension and descriptive of the "route" that unites the lighthouses in a federator system of different landscapes, cultures, and heritages. Indeed, the new forms of slow mobility (routes) can play a key role in the strategies of renewal of the territories "in transition".

The aim of the First National Convention on the Path of the Italian Lighthouses, held in Bari on 28th September 2018 and promoted by the Dicar and Dicatech Departments of the Polytechnic University of Bari was to bring together the various competences in the field of research, administrations and the State able to contribute to the construction of a unitary and organic project able to recognize the value of these monuments and to give them new meaning as elements of enhancement of the internal territories. Within this general framework, a complex line of research was developed, of which this essay presents partial results, aimed at defining the disciplinary and methodological tools useful for governing this project by offering a system vision.



Figure 1: The structure of Lighthouse Route on the western coast of Sicily: Cape San Vito

THE LIGHTHOUSES AS INTERPRETATIVE FORMS OF COASTAL SIGNAL PLACES

Lighthouses are elements of orientation in the space of the sea (Schmitt H.,2002), measuring the coastline and, as such, also coastal and territorial centrality.

They are built in correspondence of conspicuous places on the coast of which they often enhance the geographical exceptionality, identifying them as possible destinations for slow and sustainable tourism, assuming topological and positional value through the correspondence of the forms of architecture to those of nature (Settis S., 2010), combining reason technique and aesthetic values with the shapes of the landscape.

The maintenance and re-use of the lighthouses are part of a new concept of protection and enhancement policies, no longer aimed solely at binding action but oriented towards the possibility of offering new life cycles for these monuments as catalysts for the development and

renewal of the landscape and the geographical region of which they are part.

Keywords like reuse, recycling, reduction (La Biennale of Venice, 2012) correspond to the need to think of a broader concept of landscape through projects that can proactively interpret the themes of recovery through the themes of sustainable, naturalistic, cultural, blue-growth, slow food.

The recognition of the architectural and landscape value of lighthouses, of their vocation to bring distances closer, highlights their relational value: "all the objects that exist on the earth's surface interact with each other, but the closer they are to the stronger the interaction the more they are far away the more the interaction is weak." (Tobler W., 1963) Because if "all the phenomena and objects gathered in a given terrestrial space, are mutually connected by some relationship, that is to say, that an explanatory principle is contained in the neighborhood" (Biasutti R., 1962)

From this arises the need to give them a new life cycle together with the inescapable need to establish the criteria and methods of intervention, placing the same beacons within a transnational system, which guided the investigation work on the coastal infrastructural heritage of the Tyrrhenian Sea (lighthouses, coastal towers, abandoned military garrisons), considering it as topos of unpublished regeneration routes capable of intercepting resources of cross-border national governments.

The relationship between the form of architecture and the way in which it establishes meaningful relationships with the geographical elements of the territory (headlands, heads, peaks, bays, lagoons) highlighting the sense that the limit between land and sea assumes from time to time, implies the knowledge of the relationship between the form of architecture and the shape of the ground (Martì Aris C., 2007) the identification of the field of relations that the lighthouse establishes with its surroundings and the definition of the appropriate grammars able to guide the transformation / modification interventions of existing lighthouses without to undermine its original meaning.

The cognitive dimension of the journey, often coinciding with one's own inner journey (Magris C., 2005) finds, in that boundary between land and sea, between the finiteness of the earth and the infinite horizon marked by lighthouses, a possibility both of measurement and discovery of physical space and anthropic of human walking, consistent with the formation of a mental, spatial and anthropological geography (Rumiz P., 2016): the lighthouses, the

coastal towers, the military and civil buildings remind us together of the value of geography and the presence of history that characterizes the identity of ancient places.

APPLIED METHODOLOGY AND DESIGN EXPERIMENTATION

The aim of the research was to identify the constitutive elements of the lighthouse and the significant relationships it establishes with the forms of the ground, defining the appropriate analytical categories that allow understanding the grammars of their form as a function of the transformations / modifications that can be made without altering the formal and topological value of the lighthouse and the significant relationship it establishes with the site.

The research develops in a circular way between analysis and project articulated in two complementary phases, an analytical and cognitive phase aimed at the study of the theme, the definition of the field of investigation, the definition of the appropriate tools and research methods and the definition of objectives, through the survey, the comparative and taxonomic analysis of lighthouses, the identification of appropriate interpretative categories of the significant features of the sites and of the natural morphology; the other synthetic aimed at verifying through the project the knowledge acquired in the first phase, assuming two case studies as models of paradigmatic intervention.

ANALYSIS AND IDENTIFICATION OF THE TYPE-MORPHOLOGICAL CONSTITUTIVE RELATIONS BETWEEN THE ARCHITECTURAL FORM OF THE LIGHTHOUSES AND THE PHYSICAL FORMS OF THE GROUND.

The analytical phase was addressed to the knowledge of the natural form of the foundations of lighthouses, of the constructive and architectural forms, of the technical and historical aspects, to describe and represent architecture and its relationship with natural morphology, starting from the definition of the field of investigation constituted by the central basin of the Tyrrhenian Sea, a unitary spatial entity on the geographical scale, both from the limits of the coast and from the shape of the marine basin, enclosed by the coasts of Sardinia, Sicily, Calabria, Campania, Lazio. Through a complete historical, bibliographical and iconographic research, the corpus of knowledge on the theme of lighthouses was defined, carrying out the census and filing of 135 lighthouses that make up the ideal route of the Tyrrhenian Sea and the

47 lighthouses that make up the ideal route of lighthouses of Sicily. Finally, 7 types of lighthouses have been identified for some specific characteristics such as the architectural and constructive form, the scope and natural and anthropic contexts with which they are compared, identifying 8 conditions (promontory, cape, peak, island, bay or cove, lagoon, beach, city), identifying models and grammars of intervention preparatory to subsequent transformations. A comparative analysis was then carried out highlighting the relationship of the lighthouse with the sea and its bathymetric lines, between its scope and the development of the coastal limit, with the natural shape of the coast, its internal territory and the settlement system. The historical value of some lighthouses has emerged from the reading of the stratification of the routes contained in the cartography, in the main pilot books and / or in the graphic descriptions of travelers and geographers. The study dedicated to the definition of general and paradigmatic models of intervention for the reconversion of lighthouses and their spaces in structures dedicated to reception, the environment, local traditions, events, through the clarification of appropriate "derivation rules" is preparatory to the identification of specific settlement grammars able to build significant relationships between the lighthouses, between the form of the integrations and the geographical forms (the shape of the coast with the points, the coves, the coves and the shafts, the shape of the territory, with the mountains, the chiefs and headlands, the shape of the coastal city with the port, the walls, the riviera) to build places where the legibility of the characters of the landscape and the lighthouses in their relationship with the natural space remains.

THE ROUTE OF THE LIGHTHOUSES OF SICILY: THE LIGHTHOUSE OF SAN VITO LO CAPO AS AN INTERPRETATIVE FORM OF COASTAL LANDSCAPES

The second part of the work was dedicated to the design experimentation based on the recognition of the founding characteristics of the places to reconstruct their identity, starting from the recognition of the founding relationship between lighthouse and site considering the places of dismantling and abandonment as opportunities to build a new syntactic type unit, of which the light represents the polarity, through the ability of architectural forms to interpret the relationship with natural forms, assumed as matrices of landscape and urban value places. The case study is constituted by the lighthouse of San Vito Lo Capo, located at the western end of Sicily in an area strongly characterized by very important coastal landscape

values, dotted and measured by the presence of other elements such as coastal towers and tuna factories, whose recovery makes it possible to offer new life cycles to the lighthouses and places identified, combining the shape of the territory (landscape), cultural stratification, natural and anthropic values, as well as expressing the beginning and the end (extent) of the journey of the lighthouses of Sicily as a constituent part of the wider path of the Tyrrhenian lighthouses. Each is representative of an architectural form and a different relationship with the shape of the ground that requires taking a differentiated approach towards their reuse / recycling / integration. Recognized as values the shape of the architecture, the geographical and physical form of the sites, the "extreme" dimension of the landscape, the objective of the design experimentation is to define a method of intervention, identifying the appropriate categories and the corresponding compositional grammars with which build / reconstruct the identity of these places and the shape of the landscape, in harmony with the settlement's "tradition" of the territory, with the geographical complexity and topographical articulation of the sites. The design choices are aimed at reinforcing and characterizing the landscape and urban value of the case studies identified through diversified construction / reconstruction / integration interventions applied to the lighthouse and to the tuna factory, so as to give shape to individual settlements as part of a unitary system. The individual projects have a paradigm value as they aim to define intervention models starting from the choice of study areas that have a symbolic and physical value of gate, of beginning / end of the route of the lighthouses of Sicily that binds together the urban nucleuses, the territorial principals (such as towers and tuna factories), the conspicuous places of the landscape, the ancient places, giving all these elements a new value as a whole.

DESIGN EXPERIMENTS

The lighthouse on the extreme tip of Sicily. S. Vito lo Capo



Figure 2: S. Vito Cape Lighthouse

The Lighthouse of Capo San Vito identifies an extreme point of flat land that juts out into the Tyrrhenian Sea in a condition of low lands which is a prelude to the articulation of the Trapani coast to the west of Sicily. It is a particular lighthouse, as it is located at the center of a single-storey courtyard, which contains the immediately pertinent space. Geographical location of strategic value underlined by the presence of military bunkers of the Second World War but also urged by natural forces, wind and sea that accentuate isolation and aridity. The lighthouse assumes a formal and plastic value depending on the relationship it establishes with the ground through the forms of the basement and the enclosure, of the topological features (height, orientation and conformation) and topographic (soil type, height above

water) of the site , building a landscape of land in water. The theme of the project is the reconstruction of the significant relationship of the lighthouse with the landscape, its conspicuous points, the natural space of the hinterland along the cross sections that cut the coast towards the internal territories, enhancing the use of natural and anthropic space to allow observation, bathing, walking in the water, fishing and tuna production. Project interventions therefore tend to build a new syntactic unity between the parts through different types of connections and relationships. The places of the project are arranged in sequence by lines and by poles, tracing trajectories and ideal measurement axes that put within a system of triangulations the polar elements such as the lighthouse and the towers that identify peaks, heads and promontories making legible the exceptional nature of the site. The lighthouse is therefore the vertex of a system of individual architectures and geographical elements that regularly unfold along the coast between the “Riserva dello Zingaro” in the East and the Isolidda Tower in the West, establishing visual and topological relationships between the different parts of the head that recompose within a unit of space and a form of collective value. Each architecture represents at the same time its belonging to the point space but also to the entire coastal system.

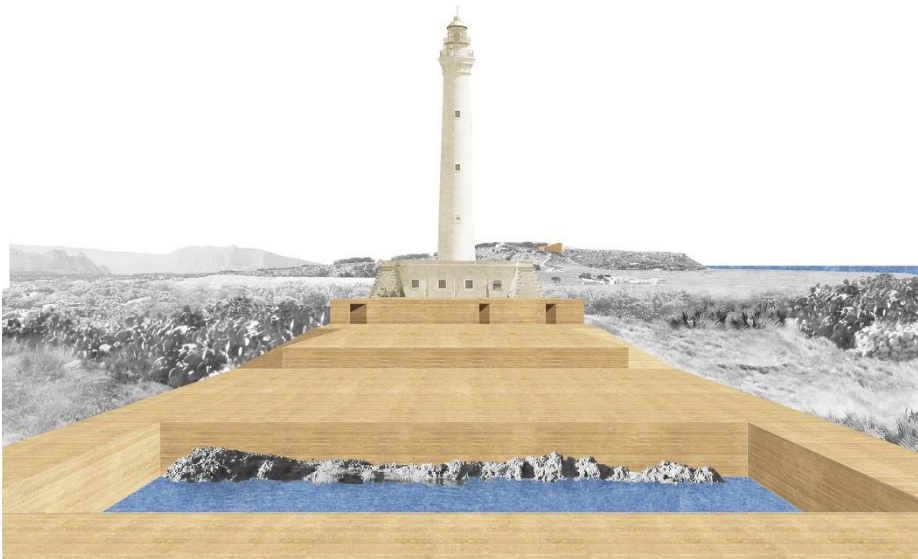


Figure 3: Project for San Vito Lighthouse

The cluster under the mountain: “Tonnara del Secco”



Figure 4: “Tonnara del Secco”

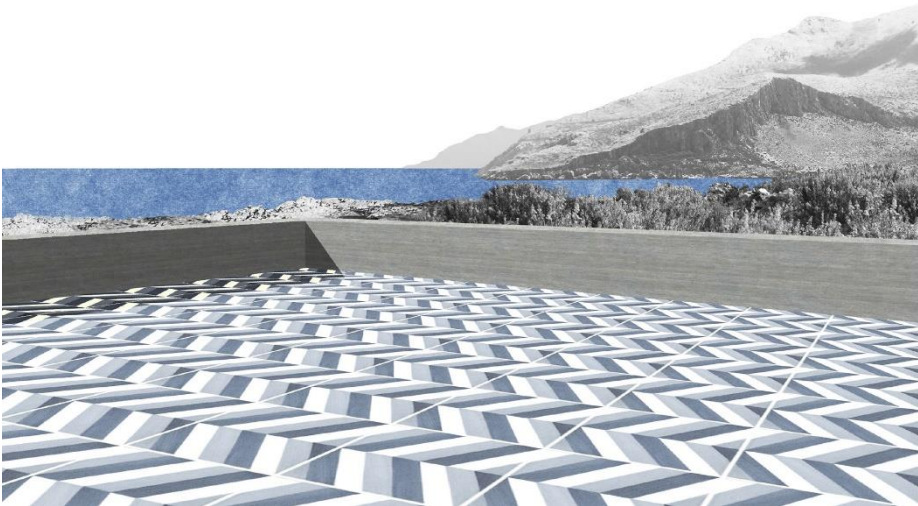


Figure 5: “Tonnara del Secco” terrace towards Mount Cofano

The tuna factories are architecture that characterizes the continental and island coasts of the Tyrrhenian Sea, with a large one mainly in Sicily and Sardinia. They bear witness to the ancient tuna

fishing culture, a sort of sacred rituality, practiced by the Phoenicians, the Greeks and the Romans, then rationalized by the Arabs. In fact, we owe not only the creation of the tuna factory system, unchanged over many centuries, but also the suggestive ritual that accompanies the various stages of fishing. In the sixteenth century there were eight in the Trapani area (Favignana, Formica, San Giuliano, Bonagia, Cofano, San Vito, S. Teodoro and Palazzo, of which in our area we find two, Cofano and Secco, both abandoned. The stratification of the parts over time has given form and evidence to a complex and articulated architecture that is organized around two large empty spaces, clearly expressing a reference to the model of the Carthusian monasteries as units of distinct parts organized around a void enclosed by the volumes for residence and production.

The project redefines the strategic value of the tuna factory as a reference element of the landscape unit of which it is a part and as a polarity of the Route of San Vito Lo Capo lighthouse, aimed at consolidating and representing the material and immaterial culture of the places.

CONCLUSION

The work carried out in the Graduate Laboratories on "Adriatic Lighthouses" "Fari del Tirreno-Sardegna" and "Fari del Tirreno-Sicilia", dedicated to the definition and experimentation of an intervention protocol to build a national network of the Routes of the Lighthouses, constitutes a representative part in the mosaic of research presented by the Polytechnic University of Bari in the first national conference on the Route of the Lighthouses held on 29th September 2018 at the Fiera del Levante. The shared position sees the recovery of the Lighthouses no longer as a mere redevelopment of the existing heritage of great architectural value, but as the polarity of a system of fruition of the territory able to give new meaning to coastal places and to the internal territories of extraordinary geographical value. The research, through the analytical and design outcomes, concludes the work of defining and testing a method for the construction of a Route of the Italian Lighthouses, as a sustainable system of fruition of the natural coastal and inland Italian territory, which places it at the center of its structure is the presence of "sentinels" of the sea such as the Lighthouses, the Towers, the Tuna factories, expression of a strongly identifying living and productive culture and memory of an important transformation process.

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HISTORIC PRESERVATION

CENTRALITY OF DESIGN AND SURVEY FOR THE PROTECTION AND ENHANCEMENT OF CULTURAL HERITAGE

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ABSTRACT

The conservation and enhancement of the cultural heritage moves in parallel with the themes of design and survey: starting from this, the contribution exposes an already started work of identification, cataloging and networking of rural churches in Puglia, to allow usability.

KEYWORDS: survey, drawing, cultural heritage, atlas, taxonomy

INTRODUCTION

The contribution intends to bring out the centrality of the role assumed by drawing and survey, in the field of conservation and enhancement of cultural heritage; in particular, the aim is to provide, or rather try to provide, a possible *methodology of investigation*, open and dynamic, whose ultimate aim is the realization of an iconographic atlas, basis for a subsequent networking of the collected data, which makes it possible to make the asset usable on several fronts, be they physical or telematic.

The graphic restitution of the data collected during the survey campaigns, after a meticulous identification and cataloging of the slice of heritage that we intend to analyze and study, passes through drawing, which through a critical-interpretative act chooses which elements to bring out and which 'conceal' at the time of graphic restitution; in this sense, the design becomes a useful tool for the knowledge of the forms, but also of the space within which they develop, a fundamental aspect in the field of investigation, an expression of the ductility of the instrument offered by the representation and whose ultimate aim remains the investigation of the existent and the prefiguration of what still does not exist.

THE ROLE OF DRAWING AND SURVEY

The practice of drawing, in close correlation with the practice of survey, assumes a fundamental importance for the protection and enhancement of cultural heritage, as it is an important tool for investigation, reading and interpretation.

In particular, the encoding of a language, of which drawing becomes a means of manifestation, becomes the basis on which to formulate the construction of the design, expression of the data collected during the survey campaigns. In this perspective, the practice of drawing assumes an important critical dimension, combining the potential offered by the practice of survey, expression of the dimensional and spatial data.

Drawing as a conceptual and interpretative tool, critical act, means of documentation and communication

The common matrix to any architectural practice is the drawing, which, by playing a fundamental role, becomes an expression of the identity of the author who produced it, but also of the content to be

shown. “The very expression «architectural drawing» (...) defines both the design of an architect and the architectural representation. In other words, it can be defined by its content or by the identity of its author” (Recht-2001).

Drawing, in the practice of preserving and enhancing of the architectural cultural heritage, becomes an instrument of knowledge of the forms, but also of the space within which they develop, a basic and necessary presupposition, whose ultimate purpose is the investigation of the existent and the prefiguration of what is not yet there. In this sense, drawing is a conceptual and interpretative tool of reality, but still a critical act, as it is the result of a choice about the elements to be shown and / or hidden in the moment of representation.

Finally, the drawing becomes a fundamental moment of documentation and communication: the collected data merge into a set of representations that attest to the condition of the artefacts, an expression of reality, while maintaining an aesthetic value.

Survey the existing

A territory, a city, an architecture or even a single artifact turn out to be something very complex, albeit sometimes in their apparent simplicity, so the qualities to which they are subjected can refer to multiple factors, such as the compositional form, to dimensional data, or the material one, to the structure, or to the perception of the space used, or to the temporal events that interested them; thus the relief becomes an instrument of quality sorting, establishing those that for the purposes of the investigation are considered useful and significant, whose synthesis flows into a graphic model, of which the design becomes the ultimate expression.

Therefore, survey the existing means to know the artifact in its entirety, attributing to each quality highlighted a value, which will be chosen whether to highlight or conceal, through appropriate choices that will concern both the relevant operations themselves, be direct or indirect, instrumental or photogrammetric, as well as those of restitution and re-elaboration of the collected data.

To detect the existing means therefore to know the artifact in its entirety, attributing to each quality highlighted a value, which will be chosen whether to highlight or conceal, through appropriate choices that will concern the relevant operations, be direct or indirect, instrumental or photogrammetric, both the restitution and re-processing of the collected data.

Not ultimately, the scale of representation that we intend to use also plays a fundamental role: it is in fact important to guarantee the recognition of the data, and the survey operations are fundamental from this point of view.

The survey is therefore an expression and manifestation of information relating to the past, thus allowing a historical reading of the artifact and also a direct comparison with the data found during the phase of archive research, but also with respect to contemporary or geographically comparable assets.

At the moment, the tools and the survey methods have taken on a more scientific nature than in the past, both thanks to the metric unification, and thanks to the presence of more and more refined instruments, but also thanks to a greater sharing of operative methodologies and graphic techniques; but even if from formal copies of the monuments, typical of the nineteenth-century Academy, one goes towards increasingly scientific representations, the techniques of the survey cannot be traced back to a mechanics of doing, but imply formal and cultural determinations.

FOR AN ICONOGRAPHIC ATLAS: IDENTIFICATION, DOCUMENTATION, PROMOTION AND VALORISATION OF CULTURAL HERITAGE

Imagining to establish a univocal and homogeneous procedure of cataloging is practically unthinkable if we consider the inhomogeneity of the territories and of the assets in the context of the cultural heritage; however, some *procedural norms* that remain stable in their chain can recreate a recognizable image, transcription of the real, restitution of the true form, thus becoming a research and knowledge tool, as well as a guiding instrument, able to stabilize the state of the places, documenting any transformations or possible interventions, also aimed at protecting the building itself.

Inspired by the original tree of the *figurative system of human knowledge* proposed in 1751 by Denis Diderot as an introduction to the cyclopean work of the Encyclopédie, the attempt is to organize the cataloging of data, sometimes so uneven and discontinuous concerning the same theme of investigation, according to three moments that can be assimilated to those proposed by Diderot for the classification of human knowledge: SURVEY | DRAWING | INTERVENTIONS, like MEMORY | REASON | IMAGINATION, closely related to each other.

But if the three *faculties* of Diderot give rise to a synthesis of knowledge that, starting from the cataloging of experiences (connected to memory), passing through a reflection on them (connected to reason), finally arrives at an original revision (connected to the imagination), then the survey (documentation phase), passing through the critical drawing of what is intended to be cataloged (classification and cataloging phase), can only identify the criticality of the asset, becoming a guide, whose purpose is the possibility of identifying the interventions to be implemented on the asset itself (preservation and conservation phase), for the protection and enhancement, thus guaranteeing the fruition.

But what and how to draw? What is the most useful drawing for the codification of a system of representation of reality that is univocal and at the same time open, meaning the graphic representation as a datum of the present, therefore as a restitution and documentation, which passes for the survey, understood as a means of documentation of the traces of the past? How is it possible to tell a reality through images? Or again, how is it possible to make the kaleidoscopic and changing image of cultural heritage readable? What is meant to be represented by drawing is the faithful interpreter of what is being analyzed or becomes a filtered tool according to arbitrary logic of 'censorship'?

Starting from these questions, the intervention aims to bring out the possibility of creating an *iconographic atlas*, whose ultimate and fundamental aim is to census and catalog the assets pertaining to the cultural heritage, for the purposes of protection, enhancement and use, thus making explicit a possible methodology for the recognition and taxonomic cataloging of realities and artefacts, in the attempt to restore centrality to the disciplines of design and survey within the interpretative context of urban and compositional dynamics.

CASE STUDY: RURAL CHURCHES IN PUGLIA

The case study that we have chosen to analyze and present concerns the rural churches in Puglia; in particular the study carried out starts from some promotion and enhancement initiatives promoted by the Puglia Region, whose ultimate aim was precisely to survey and make all those ecclesiastical property assets accessible and usable, with particular reference to those little known or left in the oblivion.

Moved therefore by what has just been said, the attempt was to start a first census that would bring out not only the presence of assets on the territory, but that also highlighted the criticalities relegated above

all to the sphere of fruition, widening the field of investigation to all the rural patrimony of Puglia, with reference to the cult buildings also of private property.

Too often, in fact, ecclesiastical and private assets, located in non-urbanized or marginal areas of the city, are abandoned or, just as often, while maintaining their religious functions, they do not provide for full accessibility and use by citizens or potential interested tourists. How can we enhance these places? And how is it possible to reconnect them together?

From the attempt to give answers to these questions, the proposal is to create an iconographic atlas that identifies and surveys, identifies and catalogs, and, ultimately, brings together all those resulting assets scattered over the rural Apulian territory.

The main purpose of the proposal is therefore to make usable the assets scattered throughout the territory, as already mentioned above, too often not accessible, thus encouraging a sustainable heritage tourism, both naturalistic and cultural.

Networking referred to, first of all provides a census, followed by a survey of the assets, whose data, result of an integrated approach, would converge in a database accessible online through telematic tools and appropriate ad hoc designed applications, thus favoring not only the enhancement of the heritage, but also new communication techniques and digital enjoyment.

However, the usability that is hoped for does not only concern the physical possibility of accessing artefacts, but is part of a wider project of digitalization of the historical-artistic information of the asset itself: the possibility of survey the assets, would allow the creation of a profile of the asset that through virtual reconstruction technologies, augmented reality, immersive and interactive fruition, would make the property 'visitable and accessible' regardless of the real possibility of physical access, exploiting the digital 3D methodologies which simultaneously provide a visual, metric and spatial overview of the asset itself.

In addition, the proposal provides for the possibility of making goods accessible even to people with reduced or impeded motor or sensory capacity, through the design and realization of physical three-dimensional models of the most significant elements, exploiting the technology of 3D printing, with cognitive and investigative function.

The main objective of the proposed intervention, for which we are already proceeding with a first acquisition of the cartographic and necessary archive material, it is hoped will also be a useful tool for investigating and governing the territory: the mapping of the sites

scattered throughout the territory can be a useful tool that, by explaining the geometric / spatial relationships and relating the architectural scale to the urban one, can predict the reconnection of all the cultural heritage assets that we have chosen to investigate, through a network of sustainable paths, which therefore includes cycle-pedestrian paths that favor tourism and sustainable use of space. The possibility of connection between the sites includes in itself also a riammagliamento of the same rural fabric in which the goods are inserted with the urbanized areas of the city, assuming the possibility of having a widespread linear park, through which, in addition to the enhancement of cultural heritage, we can implement a desirable and perhaps necessary enhancement of the landscape.

The results shown and implemented as reported above, concern a first phase of census and acquisition of data concerning the area around Fasano, a municipality in the province of Brindisi, whose first traces of ruperial settlements are dated around the XI century, period during which the populations felt the need to move inland, gradually abandoning Egnathia, due to the repeated invasions following the fall of the Western Roman Empire.

As previously mentioned, the methodological approach involves several phases, all closely connected and interlaced with each other, albeit in their almost thematic inhomogeneity. Schematically, the methodological process is structured according to the following:

1. *Identification* of assets through a historical-archival research;
2. *Mapping and localization* on geographical maps of the territory, also through telematic / GPS network systems;
3. *Survey* and acquisition of the metric and photographic data of each asset, using direct and instrumental survey methods, also using laser scanners and drones;
4. Data processing and graphic restitution, through 3D modeling software and 2D drawing, useful for graphic documentation, integrating a geometric and typological study, as well as an analysis of the different types of degradation present; (Figure 2- 4)
5. *Networking* of collected and processed data that converge in a territorial information system;
6. *Enhancement of assets* through the possibility of fruition, physical and telematic, including the development of technologies related to augmented reality on mobile devices, which allow the visitability of places, providing indications about the asset itself;
7. Reconnection of assets, through the *design of a sustainable road system*, which can also revalue the landscape system with cycle-

pedestrian routes; (the connection of goods at the territorial level, obviously involves the assets divided by micro-geographical areas or surrounding areas, however, is not excluding the possibility of connection between macro-areas);

8. Creation of an *iconographic atlas*, which can be of support both for the identification of the possible interventions to be implemented for the protection and enhancement of the assets, as well as for the knowledge and use of the territory, integrating every datum both inherent to the relevant campaigns, be it inherent in the design action.



Figure 1: photopiano processing of the church of San Michele in Frangesto, Fasano

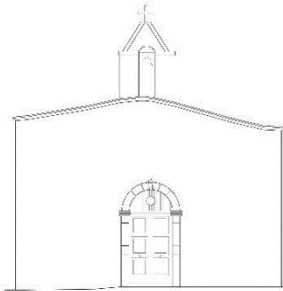


Figure 2: drawing of the prospectus of the church of San Michele in Frangesto, Fasano



Figure 3: photopiano processing of the church of San Michele in Frangesto, Fasano | rearward prospectus



Figure 4: three-dimensional reconstruction of the church of San Michele in Frangesto, Fasano

CONCLUSION

Therefore, as already mentioned, the proposed methodology making use of an integrated approach and it looks like a possible system of investigation and reading of the assets but also of the territory, a system of restitution and historical viewing, which, implemented with data concerning the state of degradation and/or abandonment, it allows to establish also the possible interventions to be carried out for the purpose of valorisation and protection, as well as of the possible use of the asset itself; an open system of cataloging, a mirror of the typical being of cultural heritage, that is being a dynamic reality in continuous change and becoming.

In this perspective, the iconographic atlas, the ultimate goal of this investigation, it looks like an open cataloging system, also in continuous evolution, which in its development can hope for the definition of a linguistic system whose design becomes a means of communication and knowledge, but also a documentation tool supported by the potential offered from the relief.

ACKNOWLEDGEMENTS

We would like to conclude the contribution, thanking some professors of the Polytechnic of Bari, in particular prof. ach. Paolo Perfido and prof. arch. Valentina Castagnolo, who have provided us with useful insights on the themes of survey and drawing, supporting our initiative of adherence to the promotion policies adopted by the Puglia Region, putting their skills at our disposal, but also their tools and materials.

The work presented here is still in progress, exactly like being inherent in cultural heritage, and does not exclude the possibility of collecting possible advice from further figures.

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AN ATLAS OF POST-MEDIEVAL MASONRY STRUCTURES IN CAMPANIAN AREA METHODOLOGY

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ABSTRACT

In the last thirty years, the development of medieval and post-medieval archaeology and the definition of the scientific status of stratigraphy have stimulated the drafting of numerous studies on the construction techniques of the modern age.

Although there are manuals of constructive solutions adopted in Italy from the late Middle Ages to the early decades of the twentieth century, elements of the constructive civilization of each area are sacrificed in interventions on historical structures, due to the operators' inability to qualify them chronologically and to recognize their cultural interest.

Regional atlases of traditional techniques are therefore prepared due the irreproducibility of material texts, to be investigated as individual identities, in the complexity of historical phenomena and processes.

For each building the gnoseology approach connected to the recognition of the complexity of the construction phases, supported by methods borrowed from the natural sciences, legitimizes the conservation of the stratifications.

In this perspective, the present research elaborates on the mensiochronological aspects of post-medieval wall techniques in Naples and in the ancient province of Terra di Lavoro, in the area of Neapolitan yellow tuff, stratified yellow tuff and Campania grey tuff.

It comes to the definition of formal and dimensional indicators to determine the age of construction of masonry: in its various forms of walls, cantonal, arches, pillars, buttresses and special pieces, such as cornices and fireplaces.

Dating in absolute the building stratifications through verifiable indicators contributes to the qualification as an expression of a particular civilization of the otherwise historically indistinct building, offering itself as a valid philological and critical contribution to the

historical characterization of each building episode, giving it historical individuality.

In this way, the definition of the age of construction of each construction element contributes, with the recognition of the stratigraphic relationships with the context, to the cultural qualification of the historical buildings.

KEYWORDS: Campanian tuffs, Stratigraphic analysis, Construction techniques, Naples, Terra di Lavoro

INTRODUCTION

In the last post-war period, the annalistic lesson played a central role in the emancipation of the restoration culture from the qualification of the built heritage according to nineteenth century academic normative grammars. Over time Croce's theoretical system was also shelved; although it showed an intrinsic philosophical strength, it was incomprehensible of the complexity of the monuments, as witnesses of cultural processes irreducible to the mere figurative aspects.

The rooting in the contemporary culture of the principle according to which heritage justifies its interest primarily in its testimonial value, that is in its character of a document of civilization, is due to the radiating of the annalistic teaching in the field of architecture history and architectural restoration (Guerriero, 1995). The definition of formal and dimensional chronological indicators, starting with those relating to masonry, is a fundamental tool for the qualification of cultural heritage.

MENSIOCHRONOLOGICAL DATA

A building can be studied in its components with the methods of architectural archaeology, for which it is necessary to elaborate, also for the medieval, modern and contemporary age, chronological indicators such as those of P.M. Lugli, G. Giovannoni and others about classical age walls, observing structures and finishes.

The realization of the mensiochronological atlas of traditional construction elements for the area of Campania region characterized by yellow and grey tuff for the modern and contemporary age, makes it possible to understand the stratification of each structure and also of each element, divisible into stratigraphic units, which highlight remakes and reuses. Each element is part of the historical individuality of the heritage and promotes the conservative practice of restoration, which excludes qualitative judgments on interventions.

In other words, the analysis of the historical heritage made with the architectural archaeology methods, using tools such as the mensiochronological analysis of historicized constructive elements (based on the statistical elaboration of morphological and dimensional data recurrences) records the changes in the technique in medium-long term.

This method makes us understand the procedural character of the History, denying the indistinct genericity of the so-called "traditional"

building category and giving back to each building component a specific historical individuality. In this way, we understand the aspects of the phenomena and the historical processes of the construction production of the examined territory, defining its characteristics and contributing to the critical-philological examination.

The accumulation of data becomes an effective tool of qualitative distinction. In other words, the metrology of the building components is an effective historical-critical practice for the preservation of the cultural heritage, bringing us back to the preservation of the “cultural territory”, introduced by P. Gazzola as a set of material testimonies of civilizations or, in other words, of cultural landscapes (Guerriero, 2004).

For this way, we take a hermetic perspective that brings back the meaning of art history as a discipline that affects all the artefacts (Kubler, 1972). However, the micro historical approach does not deprive the researcher of the possibility of evaluating, but changes its judgement criterion, leading to the aesthetic and not figurative sphere given to it, and substantiates its nature of unstable evaluation, historically individuated.

Recognizing the stratigraphic complexity of buildings and their elements takes on a character of knowledge: legitimate the preservation of stratifications but does not produce the reduction of the building to a mere palimpsest, giving archaeological investigations an independent hermeneutic value.

Research protocols

This study has geographically expanded the investigations carried out with the repertoires of construction techniques and practices (from the XV to the XIX century), outlining their local features and identifying their parameters with non-instrumental investigations in order to date them (extending the application field of the method) correlating them to the geo-lithological and orographic variables of the region, to the changing of legal, political and social conditions, to the transformation of the road networks and to the transporting possibilities of building materials.

This research examined the modifications of the structures (horizontal and vertical) and of the finishes (internal and external) of the buildings of Campania between the beginning of the modern age and the early contemporary age. This survey included the search for

sources regarding the construction materials available in the various locations and their processing, for the formation of a repertory of the analyzed structures.

The sources relating to the materials and construction techniques of the region were examined (literature, local architectural treatises and manuals, specifications and tariffs for the prices of the “genio militare”, “genio civile”, “deputazioni provinciali” and “decurionati municipali”) and many archival sources (statutes of masonry corporations, municipal chapters, notarial deeds concerning religious, noble and civil buildings, procurement of public works).

The sub-regional construction areas were identified. For each of them, repertories of the factory elements have been created, with specific protocols of metrological survey and computerized forms that have uniformed the procedures of assumption and evaluation of the data and have solved lexical problems, creating explanatory glossaries (Guerriero, Cecere, 2008).

The morphological and dimensional characters of many components of traditional building, philologically dated, were classified with photographic, metric and material surveys, verifying the coherence of documentary information with the stratigraphic evidence of the analyzed contexts.

The parameters of the studies conducted over the last thirty years have been used to represent modern wall structures (Calderoni et al, 2007; Calderoni et al, 2010). For each sample of walls (Figures 1-3), the following were indicated: the location; the geo-lithological and metrological characterization of the material and the related processes; the essential components of the mortar; the type (texture and dimensions of the joints); the processes of alteration; any protective and finishing layers; finally, the conclusions of the critical-documentary analysis were indicated (Guerriero, 2016).

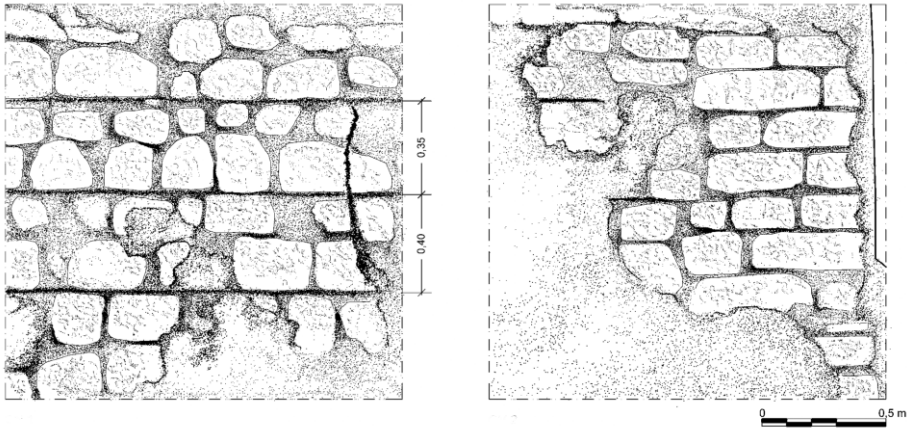


Figure 1: Napoli, church of Santa Caterina a Formiello, north transept wall (1501-1504): “a cantieri” masonry realized with two alignments of yellow tuff stones high 35-40 centimeters.

The identification data ensured the repeatability of the observations and provided useful indicators for estimating the credibility of the archaeometric findings and determining the typicality degree of the examined walls. The parameters of the studies conducted over the last thirty years have been used to represent modern wall structures. For each sample of wall, the following information were indicated: location; geo-lithological and metrological characterization of the material and related processes; essential components of the mortar; type (texture and dimensions of the joints); alteration processes; any protective and finishing layers. Finally, the conclusions of the critical-documentary analysis were indicated (Guerriero et al, 2012).

The identification data ensured the repeatability of the observations and provided useful indicators for estimating the credibility of the archaeometric findings and determining the typicality degree of the examined walls. The stone material (yellow and grey tuff) has been classified through: geo-lithological nature; petrographic evaluation (structure, grain, texture); geometry; size; traces of processing; presence of any distinguishing marks.

Due the particular geo-lithological and historical-cultural conditions of the field of study, distinction was made between: horizontal rows of squared and planed ashlar walls; horizontal or sub-horizontal courses walls (made with rough stone of differentiated sizes); “a cantieri” walls, with split stones laid according to periodic alignments.

The dimensional analysis provided for the above-mentioned structures the dimensional ranges and frequency ranges. The mortar has been analyzed through the characteristics of the binder, the type of inerts, the grain size, the horizontal alignment and the vertical joints. The above-mentioned observations were made on the outer and inner wall, section (through breaches caused by collapses or interruptions of the construction site) and the plant. In this way, it was possible to carry out the contextual examination of the walls and internal boulders. Similar investigations were carried out for cantonals, openings, pillars, arches, vaults and stairs.

For the cantonals, data similar to those of the walls were obtained, observing the similarities between them and the adjacent walls. The flat arches have been analyzed through the parameters identified for the walls, with specific variants (characteristics of the vertical profiles and morphology of the architraves).

The characteristics of the third and fourth sides of the pillars and the geometry of the profiling and the morphology of the stones of the arches were also analyzed.

The analysis of the vaults, finally, has been conducted with the stratigraphic examination and the metrological investigation, to understand their: formal typology; geometry; measures of floor below; height; presence of particular of special elements; size; constructive characteristics of the lower side with the dimensions of the stones; nature and components of the mortar and the dimensions of the joints.

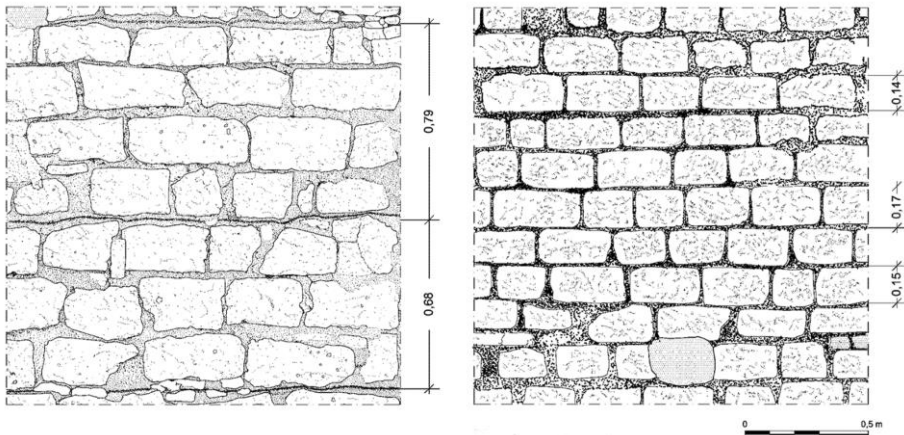


Figure 2: on the left, Napoli, church of S. Maria delle Grazie, north façade, yellow tuff masonry with irregular rows of “bozze”, high 68-79 centimeters (early of the XVIII

century); on the right, Portici (NA), Mascambruno palace, east façade, ground floor, yellow tuff masonry with horizontal rows of “bozzette”, high 14-17 centimeters (half of the XVIII century).

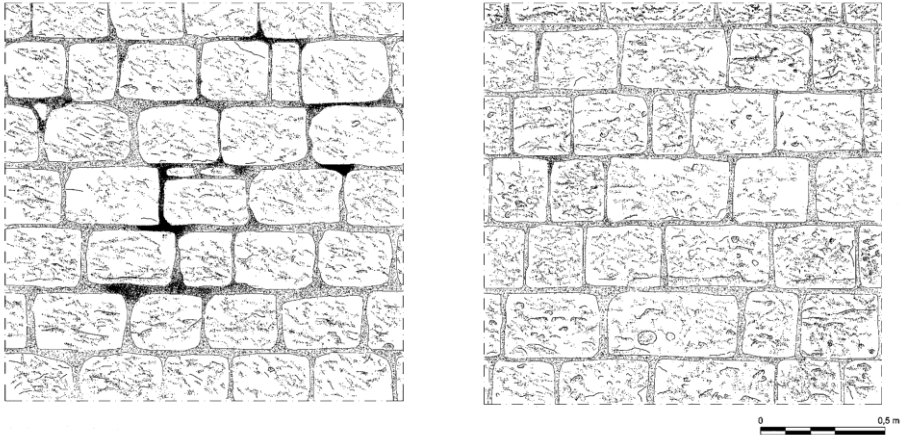


Figure 3: on the left, S. Maria Capua Vetere (CE), building in P. Fratta street, eastern façade, ground floor, grey tuff masonry with rows of blocks 22-24 cm high (first half of the XIX century); on the right, Carinola (CE), Spano farm , south façade, grey tuff masonry with rows of blocks 25-27 cm high (second half of the XIX century).

CONCLUSIONS

The modern concept of monument is based on the acknowledgment of the impossibility to give a historical-artistic value to a factory on the base of a coherence with a presumed grammar of beauty. So an anthropological-cultural attitude (or for other aspects of the nouvelle histoire) is therefore assumed as an instrument for the qualification of the heritage, which is identified with the set of historicized anthropic traces; each of them is recognized in its testimony individuality, a memento of the irreducibility of the complexity of historical facts and processes.

According to such indications, the constitution of the building heritage as a whole of tectonic presences (material evidences, to use a more appropriate archaeological terminology), historically founded, as a product of complex factory stratifications, derives from its qualification (Figure 4).

By this way, we get to the subtraction of each architecture from the a-historical category of “traditional” building (improperly considered as “spontaneous”, “vernacular”, “minor”), recognizing its specific

cultural character, in order to renounce to methodologically uncertain and operationally ineffective hierarchical categorizations.

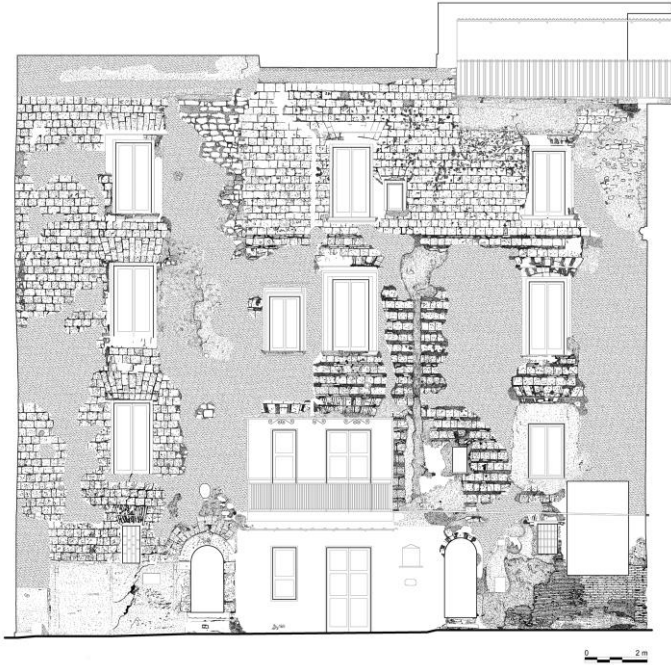


Figure 4: Napoli, building in Vico Lungo Tre Regine, material survey of a stratified façade with masonries of various construction techniques.

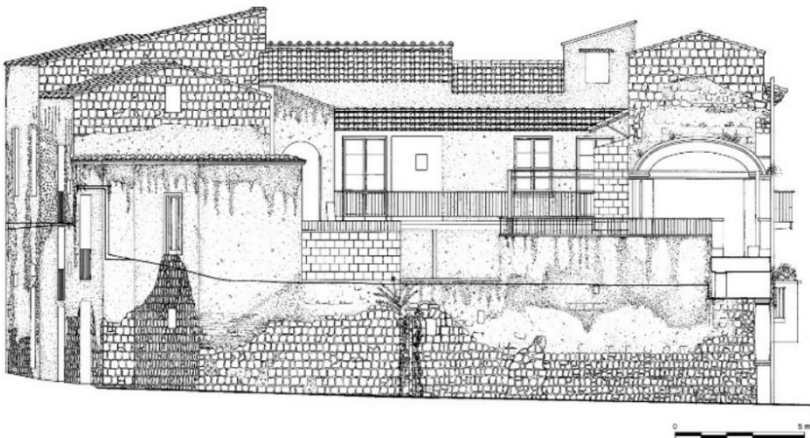


Figure 5: Aversa (CE), Biancolella palace in Principe Amedeo square, north façade (late XIX century), material survey.

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ARCHITECTURAL DESIGN

NEW MODELS OF HYBRID HOUSING: A CASE OF TRANSFORMING A NEIGHBORHOOD IN TETOVO, MACEDONIA

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ABSTRACT

The concept of integrative housing and hybrid housing is very important in architecture. Integrative/Hybrid housing allows integrating different aspects of life in a single place to improve the quality of life. To analyze these concepts, we chose a case study in a city of Tetovo, which is a great example of chaos living and bad organization. We chose an area where the planning and organization are bad, and also there are none cultural and environmental elements in place at all. With our solution, we demonstrate that even cities which do not have an organization at all have the potential to implement these key elements to improve people's life. Through this research, we provide a solution where the integration/hybrid housing is built on top of the cultural, educational, commercial and environmental elements. These are important aspects to take into consideration the quality of people's lives and for the quality of city development. The results of this research work will help future investors and architects to create new settlements and expand the city. The standards we will set for hybrid housing will be a good example for the city which is part of our case study.

KEYWORDS: integrative housing, hybrid housing, city, place

INTRODUCTION

Subject of research

Our research focuses on the unique concept of integrative housing in the city of Tetovo and the functioning of the urban structure of the historical-cultural character. With this research, we will expose the historical and cultural character of one of the oldest sites in the city of Tetovo.



Figure 1. City of Tetovo

Hybrid housing in the city of Tetovo is an important subject of analysis, and we aim to present an urban solution that will most benefit the city of Tetovo and its history. This thesis shows the importance of history and culture in modern hybrid housing.

The fact is that six million people are in the process of moving as urban. The goal is not to project huge buildings, or apartments without the necessary conditions and public places for colloquial education, but a new solution is needed. New settlements that have many problems and are a meaningless residential building without service programs or public spaces, and therefore new types of buildings are needed. Friedman said “cities are always beautiful, architecture is not” according to this, we need to design cities using our creativity.

Our subject of research is the unique concept of integrative housing in the city of Tetovo and the functioning of the urban structure with historical and cultural character.

We found out that the hybrid housing is an important subject of analysis for the city of Tetovo, therefore our goal is to present an urban

solution that will present the city and its cultural and historical elements. Through this research, we present the importance of history and culture in modern hybrid housing. History, culture, and housing are important elements for a city like Tetovo. Our research captures and shows the ratio of these elements. The goal is to build a small urban place with residential buildings and houses, or a small settlement that will include environmental standards. The subject of my research will be the concept of design. We propose a solution which includes the fundamental elements for normal functioning: 1) place for entertainment 2) place for work 3) place for living and 4) public places.

One-third of the world is on the move, and we need to make an urban environment where we can build something new without breaking it and damaging the city and the place where we act on it. Let's open a new place and a small environment that will be solved with socio-functional and economic performance.

The main goal is to make the objects beautiful in appearance and practical functionality. The place should be fit for all living conditions and be used in all aspects. In modern life, people are a more demanding time and place, and these criteria are key parameters that we need to carefully arrange. We need to find a solution to the functionality in the best possible way. We should not categorize people, there should have a place for every individual. The idea of this topic is to make a relaxed environment in which the atmosphere will be the main goal, and people from the daily routine to relax in their homes, from hard to home.

Several proposals will be used for this solution, but with attention to wood materials, greenhouses, concrete, and the stone. In this small urban we plan to have several facilities: apartments, houses, a place for sports and recreation, cafes restaurants and a place with greenery where people who do not live here can only come to use their free time.

We have analyzed each situation separately: drawing of a location, the basic typologies, houses and their organization with a yard, houses as part of Ilindenska street. As a result, we can distinguish between two different typologies of houses with yards, or houses that have dominant commercial content on the ground floor. In addition to this, an analysis has been done on the gymnasium, the mosque, and the most densely populated places that are bizarre and with big urban problems.

In this paper, we target the urban structure at hybrid housing, which includes the public spaces, public buildings, commercial building, historical-cultural objects, pedestrian ways and green area as part of a given location. The processing of the urban structure aims to deliver

integrative housing, consisting of public spaces, public buildings, commercial buildings, as well as historical and cultural objects with pedestrian paths across the site. The site on which we will intervene has four key points to be analyzed, and based on the results of the analysis we will have a suggested plan of intervention to be made. All four points on the plot have a different character.

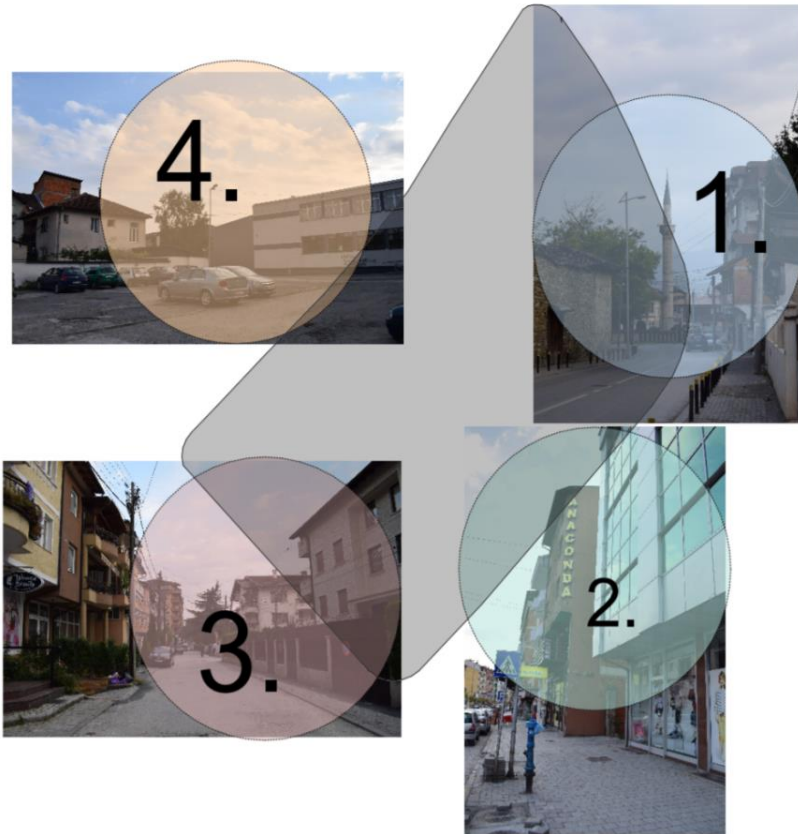


Figure 2. Actual conditions in Tetovo city

What we will build on the side of the street, whether we will interrupt, how narrow this front is, how high objects are depending on analyses which we have done. The line park will be a place where everyone can stand, there will be locals with exit to the terrace, playgrounds for children, and from the back, there will be a typology for housing.

There are several possible scenarios. The first zone of influence is the neighborhood. How does the neighborhood affect this zone, the low houses, and what will we have on that side, will it be retained on that side? The second zone of influence is the gymnasium. All pages on this site do not have the same value. Relation to a cultural object. The values in urban research have long been ignored and have been published in various forms and at different times.

In the language of urban architecture, an important means of improving the image of the city is the attitude towards cultural objects.



Figure 3. Analysis

Our idea is to have the following organization: the ground floor will be a place to work, this means, the housing starts from the first floor. The purpose of the planned housing is to be covered with greenery; there will be hillside terraces, that is, more volume objects that will relate to atriums, small places for exhibition, workshops, cafe-bar, small public places like squares, etc. My goal is to present a small urban place with residential buildings and houses, or a small settlement, which will include environmental standards. Having as a main subject the concept of design. The idea of this topic is to make a relaxed environment in

which the atmosphere will be the main goal, and people from the daily routine to relax in their homes, from hard to home.



Figure 4. Morphology analysis



Figure 5. The solution

THE SOLUTION

Through this solution, we are going to present the link between cultural and historical elements in hybrid housing. Our results will be able to help future investors and architects to create new settlements and expand the city. The standards we will set out in our master's thesis for hybrid housing will be a good result for the future documentation at the given place.

From Figure 2 we can see the proposed solution for the analyzed location. The places in red represent individual housing, where each of them has an urban farm. This links the traditional living in Tetovo with current modern hybrid housing concepts. The yellow part represents the historical and educational elements for this location. In this part, we have a museum, library and multifunctional space. The green area represents the commercial and administrative parts, which is located just across the main road Illindenska. The last part is the purple area which presents the living buildings. In addition to this, all these parts are interconnected with the inner yard, including connection bridges and green areas.

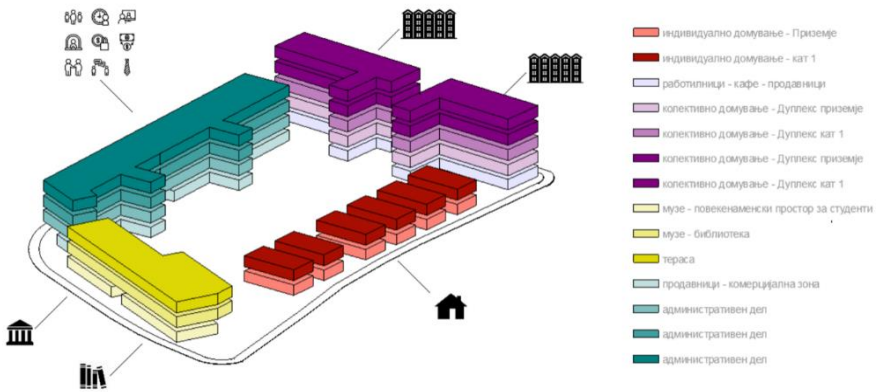


Figure 6. Proposed solution

CONCLUSION

Through this research, we exposed the importance of hybrid housing. We see that people's lives are important, so we must provide the best solution for modern housing. Hybrid housing is a perfect example of exhibiting the most important elements such as culture, education, economy, peace of nature and indoor gardens. Today, the

quality of life is important, and besides, we learned that by integrating all these elements into one we can provide better places for living.

As a result, we have proposed a solution on top of hybrid housing, where we have demonstrated the way of integrating several key elements in housing. Our goal was to integrate the cultural, administrative and commercial aspect, and also peace, through the use of indoor gardens. As a result, we have shown that even in small areas there is potential for applying all these aspects, which can improve people's live

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CORRELATION BETWEEN UX/UI DESIGN AND ARCHITECTURAL COMPOSITION OF SPACE

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ABSTRACT

Architecture is a multi-defined science that many people have tried to create a specific definition for but have not been able to so far. One of the most famous definitions of architecture is “the science of modelling space” which in fact could work also for user experience design with just one difference: the space.

User Experience design is a new design field closely connected to technology development and the growing need of people to use and understand computers and smartphones. The link between computers and users is actually made through user experience and user interface design. The main connection between these two sciences is the understanding of how people interact with an environment and of how users navigate with a computer or smartphone interface through an experience.

There are a lot of architects working in UX/UI design since it is a fast-growing field. The graphic examples of forming space through dots, lines and shapes is almost the same as the formation of the space we live in, which is constructed of columns, walls and rooms which in conclusion is the reason why the orientation of people in space is similar to their orientation in the computer screen.

KEYWORDS: Architecture, User experience, Interaction, Space, Computer screen

INTRODUCTION

Everything we are surrounded by in the world is included in the definition of space. All we see, hear, percept and touch is put under the same name because it is difficult to be conceived as singular elements. Architecture, is the science of modelling space, it is how you create, model, decorate the space surrounding people in order to fulfill basic functions, to fulfill their need of beauty and esthetic and also to improve their health and way of living. It seems sometimes surreal that one science can actually help in the integration of all these elements in one space, making everything function and look so perfect as it was created by nature as one mechanism. Architecture is always inspired by nature, and the greatest challenge is to create space that doesn't confront nature at its finest but works with it as a small addition in order to improve people's lives.

On the other hand, human beings have created a whole new life besides what nature has created and it is the life we all live every day inside our computers, smartphones, tablets and smart watches. The same problems dealing with architectural space appear in the digital life, where we get to organize us. "home", our "bank accounts", our "e-mails" and everything we can do through technology so far. Living inside and outside of the computer has made us think of our surroundings in similar ways. This new science is called user experience design which for the sake of simplicity we are going to refer with term *UX*, even though it is not the best and proper name for it. "*UX design is the process used to determine what the experience will be like when a user interacts with your product*" says Laura Klein, Author of *UX for Lean Startups* and *Build Better Products*. (web-2/2019)

THE DIFFERENCES BETWEEN UX AND ARCHITECTURE

Marcin Ukleja in one of his blogs (web-3/2019) mentions a series of differences between UX and Architecture, such as:

- *The maturity*
- *The product*
- *The process length*
- *The lifespan*
- *The research*
- *The authorship*

These are a series of obvious differences between the two fields. The maturity of each field is different, because architecture started a thousand years ago according to archaeological evidence, while UX Design started in the last century with the booming of computer use and smartphones mostly.

The final product of both is different because architecture reveals a physical built project in the end, while UX Design presents a user interface with buttons and interactions made for the user.

The process length is a subjective area, because the design of most of architecture projects can last for months until the last prototype while UX projects usually last for weeks. There are always exceptions and that is the reason why this is not a great comparison between the two sciences.

The lifespan of a building is 50 – 100 years and even more in some cases, while the lifespan of a user interface is a maximum of three years. The evolution of computer technology is the main reason why user interfaces change so rapidly in order to adjust their development to the latest trends. Architecture, on the other hand, is always strongly linked with construction technology and materials, which do not evolve as fast as computer technology.

The research of an architect before an architecture project is related to the context, passive lightning, environmental issues, as well as user requests. The UX research is based only on people and their needs in order to improve their experience with sites, software, and smartphones. The main focus of UX is the user, while in architecture is also nature, the environment, vital functions and investment besides what the user wants.

The authorship is linked to the overall style used in architecture which can be recognizable from people, while a user interface is very rarely unique in style and recognizable, because of the computer programming limitations and functional aspects.

THE CONCEPTUAL SIMILARITIES

Besides all the similarities between architecture and UX, the most important ones are the conceptual ones. The design process is similar because it goes within four main stages:

1. It begins with a research and analysis in both fields,
2. Continuing with strategy and functional program

definition, which means listing all the user stories of a site/software or main functions of a building and linking them,

3. Prototype design that if approved it will continue to the fourth stage that is
4. The final design and construction.

The same process is one of the main reasons why these fields are so similar to each other in the way they work for the user of the space or site/software. Working as a User Experience Designer for one year after graduating Architecture, has taught me a lot of things in the correlation between these two fields mostly linked to the users' orientation.

ORIENTATION

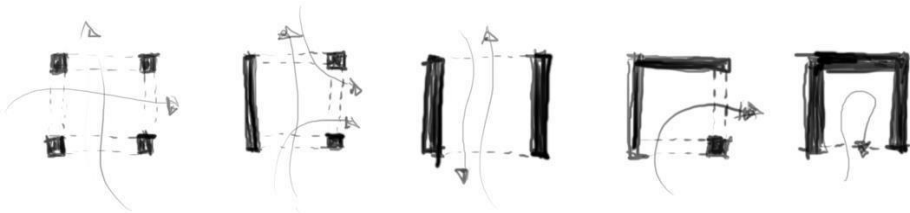


Figure 1. Defining physical space (digital sketch by Eduina Zekaj)

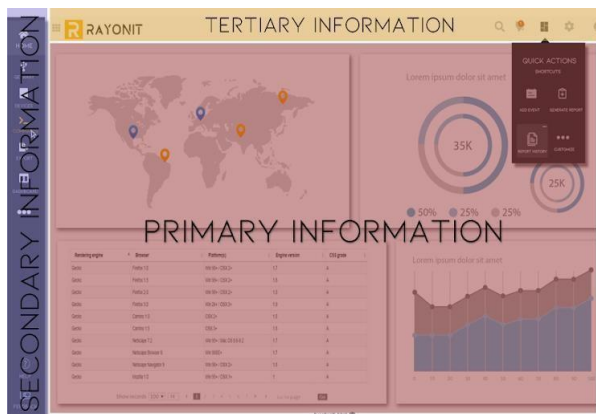


Figure 2. Defining UX interface space (by Eduina Zekaj)

In Architecture, space is defined by dots, lines, planes and volumes. Their different use can change the definition of space while

also the users' reaction towards it, providing him different experiences for each case. A square space layout can be created by four dots which would represent four columns in the three-dimensional world. It can be created by two dots and a line which would represent two columns and a wall. It can be created by two lines which would represent two walls, it can be created by two planes which would represent the floor and ceiling, or it can be created by a box that would be the real definition of a defined space. If we put one person to interact in each of these spaces, their reaction and movement would be different, because it is directly linked with human's feeling of freedom and imprisonment. The way the user would move in that space would be defined by the walls he would not want to hit, or the spaces he would want to get to out of.

This correlation is very similar to user interfaces, that can be created by a blank space with concentrated content in the middle that would concentrate all the user's attention in the middle of the interface, a blank space with a sidebar and top) navigation bar, while also concentrated content in the middle, which would make the user think of the actions he has to do with the content. It could be defined by a sidebar and spread content in the middle, unconsciously making the user navigate vertically using the scroll button or it could be defined by a top bar and the content in the middle, making the user navigate the interface horizontally.

These simple elements, as well as colors, sizes and proportions are a few of the tricks used in architecture and UX design to create the wanted results in the users' perception while guiding them through the project or software. Orientation is a major aspect in a man's life and if he has no directions he might get easily lost and uncomfortable. Architecture in the physical space and UX design in the digital one is the magicians behind our responsiveness towards what we see and where we walk at.

PROPORTIONS

Sizes and proportions are another major element that can change someone's navigation patterns or walk in the city. Everything surrounding us is in a certain proportion, vibrating and in relation to another object. If what we see is in harmony, we say that they are in good proportion, because our eyes do not get tired by looking at them.

The building sizes starting from villas and high rises are a great perception creator that deal directly with humans' ability to perceive the space. High rise buildings define a non- friendly space because of their height, and they are usually built for corporates, important buildings in order to manifest power and to make people feel small and fearful in front of them. In the contrary small villas can create a sense of home, or relevance, because of their small-scale difference with the human's one. High rise buildings are believed to have a great impact on people's lives by emphasizing the most important buildings of a city. The same parallelism works with UX design, where the most important contents that need the most attention and work to do take up the most space of the interfaces, making people feel like they cannot escape from what they need to do with that content. Even though the impact of a big card on an interface is not the same as the impact of a skyscraper the parallelism works in the spectrum of the user's attention.

COLORS

Different color combinations occurring in nature and cities can directly affect people's moods. The same thing happens inside the computer, where different colors can create different moods, leading to decision making, feeling trustful or simply entertaining the user. Everything related to color is closely connected to people's decision making. "*People decide whether or not they like a product in 90 seconds or less. 90% of that decision is based solely on colour*" (De Fleur, M., Dennis, E., 1988). The importance of studying colours in UX Design as well as in architecture has become a great challenge lately in their use on logos, web pages and buildings in order to make them attractive, unique, simple and sophisticated at the same time. If a great shaped building would not have the right colours the impact of a user would be totally different towards liking or not the building itself. In UX Design, colours are mostly linked to decision making, they can also create a link to users' aesthetic eye which is necessary in product/service selling.

CONCLUSIONS

I personally believe that there is a correlation in the way people behave inside an architecturally defined space and the interface of a

computer. People have a certain way of moving in space and moving through their thoughts and actions inside of a computer. UX designers have the power to change the way that users behave through colors, shapes and their position which is a great parallelism with architecture, since the defined space can change the visitors' behavior too. A building user's sight, as well as a software user's experience can be drastically improved or discomforted with the right tricks using orientation, proportions and colors. UX Design and Architecture will always be linked with each other as long as they stay on the track of aesthetics and functionality, differing from pure art and science and working as individual concepts.

“So, what is Architecture about if not about designing (for) User Experience?” This is a great rhetorical question, leading us to thinking what we can improve in our spaces design from UX design experience. There are a set of tests that UX designers make before releasing the final product online, starting from simple surveys, usability cases, user stories etc that create a whole new process of making the final product desirable, likeable, and very functional. This is what we can learn from UX design and use it in Architecture as a great way of testing people's reactions, their needs and functionality especially in the design process of public buildings.

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DYNAMIC OF CHANGES OF RESIDENTIAL SPACES DURING THE POST-COMMUNIST PERIOD IN ALBANIA

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ABSTRACT

During last 30 years the government system of Albania has changed from the Communism to Democracy. The change of the political paradigm, the different level of economy, change of the lifestyle of Albanians had affected also the housing system. The housing space standards, primarily being established by Communist state, were cancelled during the first transition years and recovered just after a decade of the change of political system. The state during the long period had lacked the control of the quality of construction and application of space standards. This situation was directly reflected in the housing design. The facts, that the overall area of apartment and areas and proportions of the habitable rooms were not defined, resulted to the existence of dwellings with inefficient and even inappropriate layout of apartments. The study aims to find the consequence between the political and economical situation and the size of the apartment and its parts. Within the research 95 2+1 apartments from the last 35 years are taken as case studies. For each apartment its overall area, area, width and proportions of the habitable rooms and the coefficient of space use are analyzed. Comparison of these parameters allows to find the main tendencies in changes of the physical properties of the dwelling in Albania and to trace the influence of the major political and economical events onto it.

KEYWORDS: Housing in Albania, housing space standard, apartment layout, habitable room

INTRODUCTION

Within last 30 years housing system in Albania could be subdivided at the several specific periods. Each of them is characterized by the different paradigm of construction, different source of investment and form of ownership, which was also reflected into the average dwelling size, apartment composition and design and construction quality.

During the Communist time up to 1990 most of the dwellings in cities were owned by state and rented to the inhabitants. The apartments were small and typically included one or two small rooms, the bigger living and dining room and a kitchenette. In 1989 the space standard for apartment was increased by 20% (Bengt Turner, József Hegedüs, Iván Tosics, 1992). The apartments were built up to 6 stories without elevators and the demands of the specific groups of people, as the ones with limited abilities, were rarely taken in consideration (Aliaj, 2003). There was no individual design of any residential building; the dwellings were constructed using several typological prototypes. During the Communist period there was a constant growth of the housing construction with the majority of the state ownership – 95% in 1989 (Tsenkova, 2009).

The transition period to a market-based economy had started in 1991. The comparatively fast process of privatization of the state properties had started in 1993. The urban dwellings, which were owned by state, were sold to the inhabitants with a price, which was much less, then the market value (Thiesenhusen, 2000). Still up to 1994 the government had invested into 30% of the dwelling construction (Katsura, 1996). The construction activity and the real estate had significantly increased after 1990. During that period, it was difficult to estimate the real value of the real estate market in Albania due to the fact, that many deals were taken out of legal mechanisms. There was a discontinuity between the needs of dwelling seekers and the visions of developers. While the buyers had searched for the new types of urban residences, the constructors had thought, that the only need is the larger apartments with the bigger rooms. There was not any applied housing standard, which could control the residential comfort, apartment layout and space quality. The quality of design was fully depended on the professionalism of architect and the demands of developer to provide the maximum of built area. The land use policies, urban and buildings codes were not enforced, which resulted to the wide construction of unauthorized and self-built structures with the use of inappropriate construction materials and techniques (Margaret

Eveline Moores, Norman D. Flynn, 1997). The housing construction in the transition period was unstable and limited due to the uncertain situation with building permits, lack of sufficient urban plans, and lack of land in the most preferable sites (Elona Bollano, Gerond Ziu, 2009).

Similar situation had continued at early 2000s. There was no appropriate legal framework for the construction, lack of urban plans and strategies of development, lack of communication between the different parties as well as the political interference into the construction process (Nepravishita, 2004). The construction paradigm after 1997-2000 has changed from the low-raised towards high-raised massive blocks of apartments (Evangelia Balla, Maria Mantouvalou, Fereniki Vatavali, 2007). Nevertheless, up to 2007 the housing market has experienced a significant increase with a further slowdown of the growth due to the growth of level of uncertainty and low confidence (Rebi, 2014). Since 2004 the Albanian government had introduced the Social Housing program, which included the low-cost housing and social rented housing (Dauti, 2014). The program had required the establishment of the minimal housing space standards, but its realization had several difficulties due to the lack of finance. In the last edition of the dwelling standard the minimal size of the 2+1 apartment was 47 m², the living room – 13 m², master bedroom – 12 m², single bedroom – 8 m² and cooking zone of the living room – 2.5 m² (VKM, 2015). Still these requirements are not obliged both by public and private constructors.

The paper aims to study the development of the design properties of the typical apartments in Albania, which were constructed during the Communist period and in the Transition time. The changes of the dwelling size, the comparison between the areas, widths and proportions of the habitable rooms and the efficiency of use of the habitable area of apartment are going to be investigated in accordance with the political and economical situation. The evaluation of the apartments includes its comparison with the minimal housing space standard of Albania.

METHODOLOGY

Housing space standards may change with time, which may be explained by the different desire of the society towards the residential comfort, sanitary and health standards, economical and technological efficiency, increasing demands in sustainability. Rapoport stated, that in general on the level of the whole society the house form is not a result of an individual wish of a person, but it is a product of the common goals

and values (Rapoport, *House Form and Culture*, 1969). The dwelling process is very conservative, and basic physiological living needs are not changing, or changing very slowly. The dwelling can be defined as a specific system of setting, where the particular set of activities takes place (Rapoport, *Using "Culture" in Housing Design*, 1998). Dwelling space standards are expressed through the set of measurable parameters, such as area of a dwelling and a habitable room, room proportions and minimal width (Chowdhury, 1985). The minimal size of the room is defined by the dimensions of the specific furniture, which is suitable for the room function, and the following it circulation space (Pedro, 2010). Building regulations can be subdivided into several categories depending on the strictness of the prescriptions and the level of control (Sheridan, 2001). Housing standard in Albania had passed through several stages, starting from the prescriptive requirements with the set of ready typological solutions in Communism time towards the neglect of any standard in the first 15 years of transition period. Currently the housing space standard is issued, but its practical application is not controlled by the state.

The aim of the research is to find the consequences between the political and economical situation in Albania, the presence and application of national dwelling standard and the size of the typical apartment and its habitable rooms. Examples of 2+1 apartments from residential complexes built in Albania during last 35 years have been analyzed as case studies. After the research on the available information 95 apartments from 50 residential complexes located in Tirana were selected. The chosen typology of apartment is the one, which is mostly spread in the market. Each of the apartments includes the 3 main habitable spaces - living room (with built-in kitchen), single and double bedroom. The study is limited only by one-storey apartments in order to exclude the vertical circulation spaces from the overall area. The three habitable spaces of apartment are labeled as Room 1, Room 2 and Room 3 and organized depending on the area of the room from bigger to smaller one. The initial source of information is the plan of apartment. In some cases, some information on the sizes of rooms is provided by real estate agencies or developers. All necessary information is taken from the redrawn plan through the graphical analysis and measurements. The information is collected using the following guidelines: the overall area of the apartment is measured with exclusion of the area of the partition walls and outdoor spaces, such as balconies and loggias. The habitable area is a sum of the areas of each of the four habitable rooms. The area of each room is measured with

exclusion of the area of service spaces, such as storages, wardrobes, private bathroom attached directly to the room. The width of the room is the smallest clear distance between the walls, if the room has rectangular shape. The coefficient of use is calculated as the relation between the habitable area (the sum of all habitable rooms) and the whole area of the apartment.

ANALYSIS OF THE SPATIAL PROPERTIES OF APARTMENT AND ITS HABITABLE ROOMS

The evaluation of spatial structure of 2+1 apartment starts from the analysis of change of the overall area of the apartment and the coefficient of use within the relation to the time period. The work proceeds with the evaluation of dynamics of area, width and proportions of each habitable. The comparison of the diagrams of change for each parameter allows to find the common influence of the political and economical system to the dwelling space and organization.

Total area of apartment

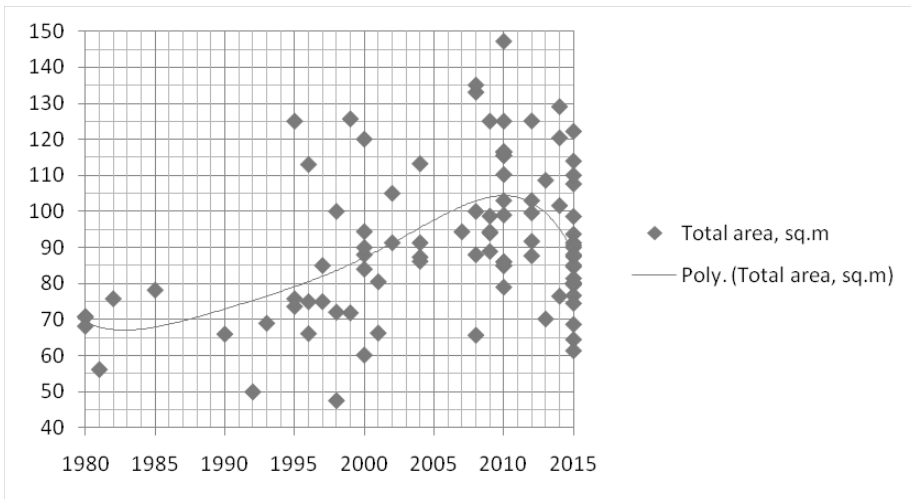


Figure 1: Total area of 2+1 apartment, m²

The distribution of the areas of the analyzed 2+1 apartments of selected cases during last 35 years is given in Figure 1. There is an evident difference in the distribution of parameters during the different

time periods. The apartments of Communist period (1980-1980) are relatively small and similar in area. Liberalization of the political system and transition period (1990-2010) are characterized by the growth of the dwelling total area. Still in this period there could be found as very small, as oversized apartments. The relative decrease of the apartment area after 2010 is connected with certain economical crisis of that period. The smaller apartments were sold easier, which resulted to the increase of their presence in the market.

All the apartments satisfy the minimal spatial requirement, which is established by Albanian housing space standard. The average apartment area is 91.7 m², which is almost doubling the minimal. This means, that the typical Albania 2+1 apartment is relatively big, but has the tendency to be reduced in future.

Coefficient of use of apartment

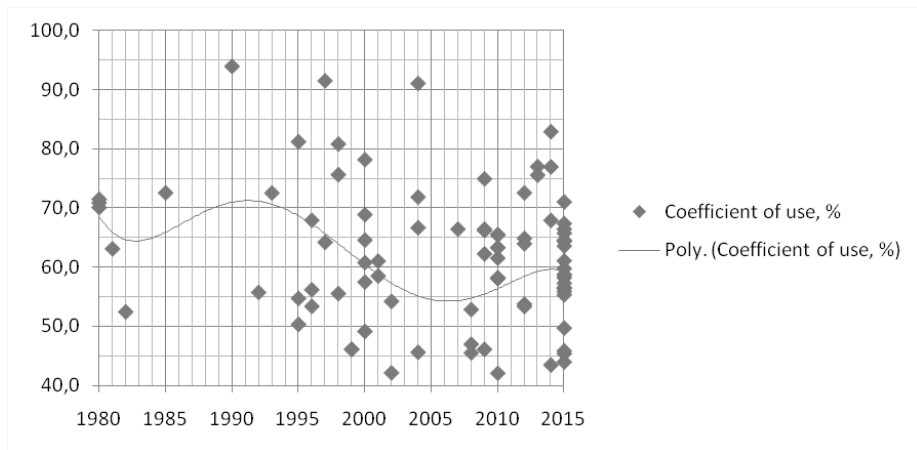


Figure 2: The coefficient of use of 2+1 apartment, %

The second step of analysis is the evaluation of the balance between the habitable and service spaces in the apartment. The coefficient of use is the relation between the sum of three habitable rooms and the total area of apartment. The dynamics of change of this parameter is given in Figure 2. For all Albanian apartments the coefficient of use is very low, which means the abundance of service spaces in the apartment and inefficiency of its spatial design.

Starting from the relatively high 70% value, the coefficient of use is decreasing during the whole transition period. The trend may be connected with the demand of developers to sell the apartments with

higher area but belonging technically to the same 2+1 typology. The situation started to change after 2010, but still is not reaching the parameters of Communist period. The average coefficient of use is 59.9%, which is rather small.

The area of habitable rooms



Figure 3: The area of habitable room, m2

The changes of size of the three habitable rooms with time are consequent, as it is seen at the Figure 3. The area of Room 1, or living room with built-in kitchen, is constantly increasing, meanwhile for the two bedrooms there are evident wavy oscillations. The bedroom area (both for Room 2 and 3) increases at 1993 and 2012 with the slight decrease at 2005.

For every apartment Room 1 is significantly bigger, then the other two, and only in 6% of cases it doesn't satisfy the minimal standard. 27% of the master bedrooms and 48% of the single bedrooms are below the standard, within them the majority had constructed during the transition period (1990-2010). There is an evident trend in reduction of area of all rooms in the recent 3 years. The average areas of the living room, master bedroom and single bedroom are consequently 25.5, 15.7 and 12.6 m², which is still bigger, then the minimal size.

The width of habitable rooms

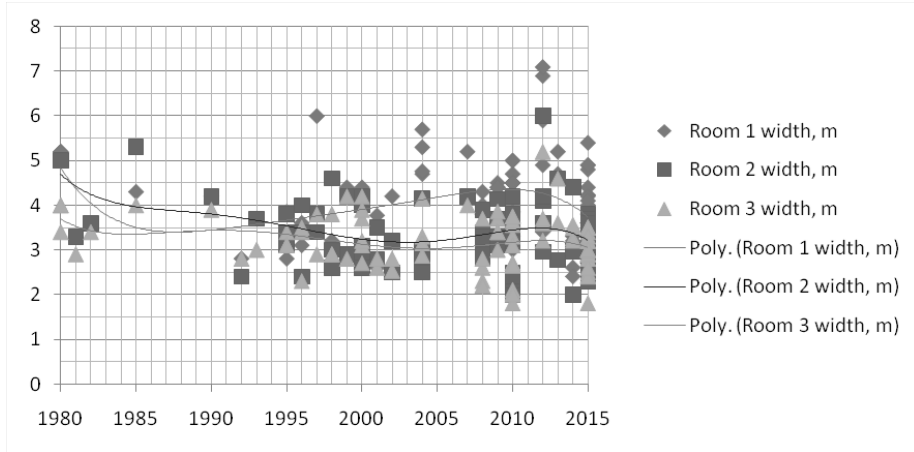


Figure 4: The width of habitable room, m

Minimal width of the room is the parameter, which characterizes the ability of the room to host a specific function. Minimal width depends of the dimensions of the furniture and the following it space for circulation. According to Figure 4, the width got the maximum in Communist period and then is slightly decreasing for all three rooms. Room 1 is almost in all cases wider, then Room 2 and 3, which are almost similar.

The average width of the living room is 4 m, the master bedroom – 3.4 m and the single bedroom – 3.2 m, which satisfies the housing space standard. In few cases for the Rooms 2 and 3 there are recorded very small values, which may lead to the inappropriate proportions of the room and difficulty of its furnishing and use. For all the rooms there is an evident tendency in decreasing of the width after 2013.

Proportions of the habitable rooms

Configuration of the perimeter of the room may affect the possible layout of furnishing. Rooms with the same area, but with different ratio between the width and length may host different set of living activities. It is recommended to design the rooms with sides related in proportion 1:1 – 2:1. Such type of space can be used more efficiently, than longer and narrow ones. Figure 5 shows the coefficient of relation between the length and width of the habitable room. In order to obtain the adequate room proportions, this parameter should stay between 1 to 2 (SNB,

2003). Greater value indicates the narrow and long space, which could have problems with furnishing and access of natural light.

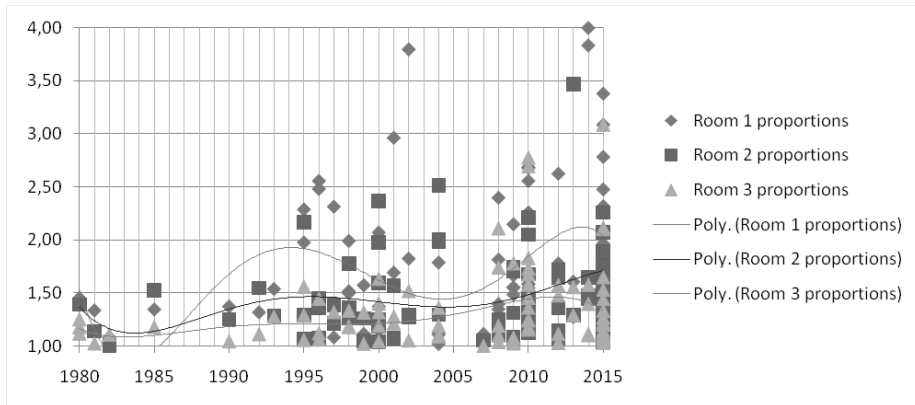


Figure 5: Proportions of habitable room

The majority of the studied spaces have the acceptable ratio between the width and length. Nevertheless, 26% of the living rooms, 11% of the master bedrooms and 6% of the single bedrooms have problems with proportions. The length of the room in some cases may reach up to 12 meters, while the width at the same time is 3-4m. The proportions of the Rooms 2 and 3 are usually better, then the Room 1. It can be noticed the tendency of degradation of the room spaces with time, especially for the living room. Still the average value for every room remains acceptable: 1.8 for the living room, 1.5 for the master bedroom and 1.3 for the single bedroom.

CONCLUSION

Spatial properties of the 2+1 apartment in Albania had been changed during last 30 years. Application (or neglection) of the housing space standards by state had influenced both to the size of the apartment and its room. The quality of the design and the efficiency of space use had been influenced as well. The Communist period (1980-1990) is characterized by the design of relatively small apartments. There was no evident difference between the three habitable rooms. The space was used relatively efficient – the coefficient of use at that period was higher. Rooms were designed with the application of side proportions, which range from 1:1 till 1:1.5, which demonstrates the higher level of universality of the room and residential comfort.

During the Transition period (1990-2010) there can be noticed the increase of the apartment area with the simultaneous degradation of the quality of design. The size of the area of the living room increases drastically. In some cases, it reaches about 40 m², which seems to be abundant for the 2+1 apartment, which is supposed to host the family of maximum 4 people. The bedrooms are also slightly oversized. The Transition period is characterized also by the low efficiency of space use. The developers prefer to construct the bigger apartments with the exaggerated service areas and habitable rooms in order to get more profit. The lack (or disregard) of dwelling standards results also to the construction of spaces, which are too small, or too narrow for comfortable fitting of the living activities.

The recent period of development (after 2010) is characterized by the gradual improvement of all parameters. The size of apartment and the areas of habitable rooms tend to become smaller, while the space is used in a more efficient way. This may be related from one side with the dissatisfaction of the design of apartments, which were constructed during the previous period, and from the other side with the economical crisis, which required to construct smaller apartments, which are more affordable to buy. The state had issued the housing space standard, but still the application of it was not controlled.

Adequate size of apartment and efficient use of its area are the key parameters of the affordable housings with the appropriate level of comfort. These two parameters may be controlled both by the market and state. Minimal size of the apartment and its rooms and minimal room width are controlled by the housing space standards. Maximum size of the apartment is not officially stated, and it depends usually on the wealth level of the state. Lack of the state control for construction leads to the unreasonable growth of the size of apartment, while its typology (2+1) still allows to host the same number of inhabitants. The irrational size of the habitable rooms and abundance of service spaces become the instrument, which may bring profit only for developers. At the same time the appropriate layout design may allow to add one or two habitable rooms to the same apartment, which may increase its value. The efficient design may result to increase of the amount of habitable space using the same time and material resources for its construction.

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LANDSCAPE RESEARCH, PLANNING AND DESIGN

DEFINING LANDSCAPE STRATEGIES FOR EASTERN EUROPEAN HOUSING NEIGHBORHOODS

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ABSTRACT

With the collapse of socialism and opening to the globalization, Eastern Europe has turned to the new cycle of its economic and social development.

This phenomenon has provoked the new urban dynamics and changes in which so called “socialist” large housing neighborhoods have lost any kind of attraction for the private investments. The reduction of the capital and the lack of the more sustainable development strategies has triggered a process of urban degradation in the peripheral parts of the city composed of large monofunctional housing areas.

This research is aimed to explore the main characteristics of this environment, mostly built in the 50s and the 60s, to understand better the consequences of its recent urban changes.

The late 80s and the 90s are the crucial decades characterized by political and economic transitions: from a central planned economic system of socialism to the market economy of capitalism. This changing phenomenon, usually named “turbo capitalism”, has produced the specific landscape of post-socialist city.

Starting with the case-studies selection, mostly based on historical facts and on socio-economical state of art, the research will confront housing regeneration projects in Europe. The results of this identification will be the guidelines of intervention for the urban landscape retrofitting for Eastern European housing neighbourhoods based on best-practice comparison. And above all, the main aim of this general survey is to start design “know-how” cross-border transfer process.

This “post-socialist” environments should be redesigned combining the traditional public space concepts with the new landscape principles based on sustainability. Therefore, in conclusion will be proposed some regenerative scenarios, based on ecology strategies

and participation, in order to create the new paradigms that could (re)built and reinvent the modern eastern settlements through the implementation of landscape as a strategy that could improve the quality living standards of its inhabitants.

KEYWORDS: Urban Regeneration, Landscape, Open Spaces, Post-Socialist, Retrofitting, Public Spaces, Housing Neighbourhoods

THE POST-SOCIALIST CITY: OPENING TO GLOBAL INFLUENCES

Since the end of the Second World War, Europe has undergone various phases of construction and reconstruction under the influence of different political systems and, in connection with these regimes, different ways of conceiving the built environment have been developed.

On one side the socialist countries, and on the other the capitalist states, through architecture and urban planning they organized both built and social spaces generating new forms of community and cultural identities.

From the 50s to the 60s and till the early 90s of the last century, specific spatial structures were defined that differed from the traditional city in many aspects. In fact, with the advent of the modern movement, the compact city matrix has been questioned: urban systems capable of generating new hierarchies of open spaces in a project of paths and residential blocks formed by isolated buildings have been proposed. In most cases the open spaces represent about 2/3 of the total area. At the same time, modernist ideas have also influenced the construction methods, the new city would consist of identical prefabricated high-density dwellings, spread over a vast territory and arranged in a Cartesian grid in order to allow the city to function as a “living machine” (Mumford, 2000).

Sonia A. Hirt (2012), states that, although formal applications in architecture and urban planning were the same throughout Europe, two different types of modern cities were developed. This differentiation is given by the fact that “political, economic and social systems based on socialism and capitalism functioned so differently that their spatial products the socialist and the capitalist city – were autonomous constructs” (Hirt, 2012).

In the socialist countries, the urban solutions are found in the Marxist ideas of executive power deriving from a planned economy. The socialist principles of organizing the housing have been inspired by ideas of reconstructing the social network, starting from the family relationships, towards a total women emancipation, consequently to a high request of new houses for the inhabitants; this was done through a strict control of urbanization from the government (Bater, 1983).



Figure 1: Petržalka Landscape, Bratislava 2016 (photo: Nicola Petaccia)

THE POST-SOCIALIST LANDSCAPE

Despite the lack of “public space” definition in the Eastern Bloc literature, the problem of what we mean by public spaces and demand by the planning practices, was widely observed by experts and scholars. There were concepts of recreation, community centres, administrative and public areas, green, green belt, zone of public service, material and spatial patterns of social organization, etc. regarding to the given term. Often, these definitions and their meanings were not considered aggregately (Kadyrov ,2013).

The concept of urban landscape can be viewed as a synonym. “It stresses, though, a more comprehensive and holistic view on the open spaces and points to the structuring of the city. Intrinsically the urban landscape contains urban open spaces. In both cases the landscape is planned, designed or shaped to convey human intention and it is affected by the social, physical and natural context in which it is embedded” (Web-1)

This landscape is currently in a state of crisis, this also because of the gradually fragmentation and privatization; worsening the fruition and environmental conditions; damaging the identifying characteristics; denying the systemic nature and it is being owned by all; leading to the abandonment and degradation (Giordano, 2015).

This specific urban landscape gradually increased from the centre of the collective life to an urban void. After 1989, with the fall of the Berlin wall, the countries of the former Soviet Union were engaged in a complex transformation: from the planned economy to the free market, from totalitarian to democratic regimes, from the socialist country to the capitalist one.

The transition to democratic societies based on free markets in Central and Eastern Europe has therefore initiated a restructuring of the stagnant economies of the former socialist countries by opening these queens to global influences (Brade et al., 2006).

K. Stanilov (2007) pointed out that since the 1990s the some trends in the evolution of the cities of Central and Eastern Europe that have emerged have consolidated over time, others have been eclipsed as temporary episodes of the turbulent during early years of the transition period. This can be defined as a paradigmatic period of changes that have affected post-socialist cities, the main issues of urban transformation have been established by neoliberal reforms.



Figure 2: Parking and open space in Petržalka neighborhoods, Bratislava 2016 (photo: Nicola Petaccia)

Even today, the economic and social transition, in many respects, is not yet complete (Malle 2013) and looking for answers to the prospects for the development of the landscape and public spaces is one of the most important issues that Eastern European cities find to deal with (Andrusz et al., 1996). The eco-political changes in recent decades are having an impact on post-socialist residential neighbourhoods built in the post-war period with demographic changes (aging of the population), social problems, environmental issues and physical degradation of spaces (Petaccia, 2019).

Those spaces, which have been developed and modified over time, have suffered during the transition period and are still waiting to acquire new meaning.

If, until the fall of socialist governments, the maintenance of open spaces within residential neighbourhoods was managed by central administration, today their preservation depends on new phenomena, almost always coming from outside. At the same time the large scale of the new settlements contributes to favouring a landscape image with vast green areas, huge open spaces, wide streets, imagined as “perfect” public spaces for the new cities, which we cannot but still recognize as marginal urban spaces lacking a specific identity.

Paradigmatic can be defined the case of Petržalka neighbourhood in Bratislava. Here majority of the inhabitants negatively rate public spaces, playgrounds and fields. The only positively rated thing is dimension of public spaces.

From a survey on site, majority of recipients perceived the lack of social contacts, playgrounds and recreation areas as the greatest problem of the housing estate. The most positive things are greenery, peace and quiet.

The neighbourhoods remain without any renovations, the panel houses and the public spaces are in decline, the original inhabitants are moved out of the worst affected areas of Petržalka and new problematic, economically weak inhabitants will move in.

Some particular housing blocks are renewed, but the public space and the infrastructure remain without investments. The middle classes are leaving. Old people and economically weak inhabitants will remain. The new immigrants will be of low income and not identified with the place. The danger of decline of the whole estate is still relevant.

The public space and the active participation of the inhabitants in this scenario become a paradigm for rethinking the landscape.

This improvement can only take place through the redesign of the built environment and infrastructures, through ecological interventions or participatory projects, able to involve the inhabitants within the regeneration process. In this sense, also public spaces become essential to activate processes of sustainability and urban regeneration, also from the point of view of strengthening biodiversity (Banerjee, 2001).

The dominant tendency, however, is pushed towards contraction rather than the expansion of the public sphere and the different processes of privatization increasingly displace new urbanizations from “socialist” thought.

LANDSCAPE STRATEGIES

In the hypotheses of the re-use of this “contemporary landscape” on one hand it becomes necessary the regeneration of the physical spaces and on the one hand become fundamental the “re-conquest” of the central role of the public uses of those spaces.

In this shared city scenario unused and residual spaces, which have now become marginal and obsolete, can be returned to citizens, who can regain it within a global landscape reform.

The public space in this case will become the space of the new community that acts both on a local scale and on the scale of the entire city, where recycling and reuse strategies can be adopted in a spatial, social and collective sense. A reflection therefore arises from the opportunity to rethink this landscape through a regeneration project: the human scale also returns to the fore in the design of open spaces, through an approach oriented to the quality of the places and the well-being of the inhabitants, rethought both through individual practices that through community practices.

Participation-actions

As in the case of City Acupuncture, an international project that involve Macedonia, Serbia, Bosnia and Croatia (a project financed by the European Commission and active from 2011 to 2014) the “urban acupuncture” has been the ground of the requalification program, also through numerous field studies carried out mainly in the cities of Skopje, Belgrade, Sarajevo and Zagreb.

This intervention method, based on ‘small actions’ with great impact, began in the 1990s, on the basis of the Catalan experience of urban acupuncture, introduced for the first time by Manuel de Sola Morales in relation to the redevelopment of the public spaces of the pre-Olympic Barcelona (Cerviere, 2015).

Since the beginning of the 2000s many urban acupuncture projects, also considered as “pop-ups or micro-interventions”, have in fact begun to prosper also in the United States and Europe. Since urban acupuncture is a process of ‘co-creation’, which starts from the bottom, in some cases it has had the ability to strengthen very small local communities, becoming an opportunity for the co-production of public space, based on direct participation of the inhabitants.

Some of these projects are carried out in Novi Zagreb (Covic, 2019), where the aim of this actions is to improve life in the neighbourhood by small scale intervention. In this analysed case study

the Co-operative Urban Planning Approaches (CUPA) project, with partner cities, organized workshops to discuss specific urban planning problems of specific areas, highlighting the need of improvement, because of the real potential, especially in the open spaces, to make the areas attractive with a minimum of effort. In July 2013, the sixth workshop by the CUPA took place in Zagreb and was concentrated on the Zagreb Fair area (Web-2). The workshop concerned about the development and management to transform the Zagreb Fair into a modern Fair quarter. Therefore, participants were encouraged to identify different aspects of involving stakeholders and to suggest possible spatial proposals for the introduction of additional or new functions that could easily be combined with the fairground function.

Another interesting research project is “Urban Pocket: reclaiming the public in left-over open spaces”, (Web-3) a study based on the program launched by Urbego in 2015 in the Balkan cities, with the aim of developing a co-planning strategy for the recovery of public spaces in different cities of the world. In the program, Urbego operates simultaneously at different scales: at the local level, involving the communities of residents and helping them to take control of the neighbouring open spaces; at a global level, providing a platform to share and transfer knowledge and skills on the one hand, and acting as an intermediary between small international organizations and financiers on the other. Urban Pockets acts on a micro scale in places such as courtyards, neglected common areas, parking lots, or wherever the lack of resources or interests has produced unused open spaces. Rather than replicating a fixed set of spatial solutions, it provides a methodology for implementing “site specific” interventions, with experts active in helping local communities both in the design of spaces, and in the financing and management of their projects. An extensive micro-intervention program that not only offers an economically effective strategy for defining and maintaining open community spaces, but represents, thanks to its co-participatory approach, an effective way to deal with many problems of urban life, such as isolation or social exclusion. The first phase of the program saw Urbego interacting with partners and local communities in different cities of the Balkans, in the construction of the first community playground, so it continued the experiment in Tirana in 2015, involving numerous actors in the entire redevelopment process neighborhoods.

A similar approach can be found in “Play the City”, an association based in Amsterdam and Istanbul, which aims to accelerate processes of participation, regulate urban projects in administration and design,

resolve 'contentions' (where they are identified) and finally help connect to communities through their Metho City Gaming (Play the city, gaming method, (Web-4) Here the intent is to produce a new urban space through simulation games in which real and active actors, both public and private, participate.



Figure 3: commercial grafts at ground floor in the Novi Zagreb neighborhoods, Zagreb 2017 (photo: Nicola Petaccia)

The game, capable of simulating responses to complex urban and regional questions, becomes an important means of communication between the different actors, despite the different interests and programs. As evidence of the fact that this approach can become effective and produce collaborative methods also in Eastern countries, the experience made again in Tirana in 2012 can be considered significant.

Eco-actions

Beyond citizen re-appropriation aspects this scenario intends to address also the issue of the relationship between the city and the natural processes from a perspective of development and sustainable urban environment by proposing a new approach to the topic of open spaces and green spaces through the urban ecology. This has an impact on territories and legitimates the concept of design through a

green networks system juxtaposed to the city infrastructure (Ferriolo, 2002).

The ecological paradigm in an urban environment is transformed in a vision of open spaces, as part of a territory waiting for its renovation. As observed in the post-socialist neighbourhoods, the ecological processes are often interrupted by urban development.

An ecological approach aims to create a new network of healthy and attractive upgraded city environment, sustainable routes and spaces (Armour et al., 2014). This tactic is used to achieve several objectives: the ecology infrastructure secure a better quality of life and human well-being, for instance by providing a high quality environment in which to live and work, improve biodiversity by reconnecting isolated nature areas and guarantee a protection against climate change. Regarding eastern cities integrated approaches, it will also limit the space utilized becoming an efficient way of urban regeneration.

Again referring to the case mentioned above in Bratislava, the actual researches for renewal on the Petržalka site are concentrating on one hand to the larger scale development with a redesign of the main axes, and in the other hand are done mostly in the portion of the spatial structure, through the variability of forms of construction and perception of public spaces, looking for an effort for a clear definition of hierarchy of spaces and completion of mass housing structure.

On a territory scale, it is possible to observe an attention to the Danube river, and its surrounding landscape that include also part of Petržalka.

Over the centuries the river Danube near the area of Petržalka suffered from many modifications. In the XIX century Petržalka was an island surrounded by the channels and periodically flooded, causing damages to house and crops of the inhabitants. At the end of 1800 the local authorities decided to modify the course of the river, and then in the 1950s the channels were completely drained but a lot of flooding problems arose, due to the lack of channels which should have canalized the water into different directions. Therefore, local authorities are currently thinking to face this phenomenon by creating again a net of canalizations and waterways which could go across the area and link the riverfront of the old city to the water basin in the south of Petržalka. (Petaccia, 2010)

The outflow project has been carried out by the University of Technology of Bratislava together with the University of technology of Vienna in 2005. The project, named Bajoproject, had several different goals: renewing the relations between the neighbouring northern

boroughs of Bratislava across the Morava River with municipalities in Austria; enhancing cross-border mobility through the development of urban and transport infrastructure in the direction of Devínska Nová Ves – Marchegg– Gänserndorf.

The Interreg KOBRA 2010 project aimed to the same direction. This program is a part of a series of Implementation Labs called Cooperative Urban Planning Approaches (CUPA). Together with other partner cities, Bratislava organized a series of workshops to discuss specific urban planning problems. These workshops intend to provide participants with an opportunity to analyze these problems in a structured manner and to develop appropriate solutions. The methodology and structure to be used is derived from the INTERREG IIIc project MILUnet (Multifunctional and Intensive Land Use Network) (Web-5). The main idea is to restore former parts of Danube inland delta on the right bank of the river, in the border region to Austria and Hungary. According with the program outcome, this will become an opportunity to increase the urbanization of agricultural land, and to be effective against flood. This project gives to the whole city a great potential to develop on the waterfront.



Figure 4: Ecological potential and temporary sports facilities in Petržalka, Bratislava 2016. (photo: Nicola Petaccia)

In this study, the green network deals with the neighbourhoods' green systems of open spaces. The green system will act as "a complex network in which the green penetrates the urban fabric, as ecological regeneration tissue and improvement of sanitary and hygienic conditions of the urban ecosystem, helping the new urban design forms, organizing and activating connection between its parts. A green network that takes the form of an infrastructure that, like the other, performs specific functions plays an important role in the urban structure. Today,

the city communicates less with the river. The project wants to bring back the phenomenon of river arms, river island and wetlands back to the area on the right bank of the river Danube (Web-5). A continuous organic framework, that invest different scales from the geographical, the urban, until the settlements. In this network are considered the river courses, the forest, and the line of tree, organizing a wide range of morphology: From the wild landscapes that of formal gardens, the gardens to wooded areas to lakes and greenways” (Angrilli, 2002).

The great open spaces of the socialist city offer the opportunity to think and re-think the ecological functions according to specific application scenarios. Currently this landscape is often inadequate for water disposal infrastructure. For instance, can be introduced particular “rain gardens”, which are as slight depressions of the ground covered in green similar to the flowerbeds, are used to manage and control large amounts of rain water coming mainly from the roofs of buildings, from roadways and large paved areas.

The “storm water features” are infrastructures designed to integrate the environmental urban drain water with the public space design. It can assume several shapes and different purposes.

This kind of infrastructure is used to accumulate the overflow water, the water is canalized in order to reduce the floods; the accumulated water is then kept and absorb then the water is filtered to remove deposits through the infrastructures that eliminate the sedimentation; later the pollution is removed with the aid of herbal extraction properties to achieve the bio purification; the percolation and infiltration are used then to give the water back to the soil, restoring a high level of permeability. An “stormwater ecomanagement strategy” it is therefore given implementing and integrating as much as possible the design of open spaces with the ecological infrastructure. (Corfone, 2012).

Also, wetlands are an important source of diverse benefits for people, contributing provisioning, regulating, habitat, and cultural services. Critical regulating services include water-quality improvement, flood abatement and carbon management, while key habitat services are provided by wetland biodiversity (Clarkson et al., 2013). Wetlands are among the world’s most productive and valuable ecosystems. They provide a wide range of economic, social, environmental and cultural benefits – in recent times classified as ecosystem services (Costanza et al., 1997).

A best practice can be traced in Bucarest, Romania. Văcărești now considered one of Romania’s most varied ecosystems (Web-6) is

an incomplete portion of urban water infrastructure forgotten since 1989, currently has been retrieved by nature and fauna without any human interference. This district of Bucharest was built following the collectivist principles of the socialist party with massive and monumental architectures such as the Ministry of Justice and Supreme Court, additionally it was planned an artificial lake part of an impressive strategy of hydrological infrastructure between the city and the Danube river. Those plans haven't been completed and Văcărești become an empty lake, with high banks that hide it from the socialist neighbourhood and the city. Till recent times this area has been regretted, and a varied of vegetation and wildlife is established, recently the wetland has attracted public institutions and private investors for its extraordinary ecosystem.

Nowadays, after 27 years, the area has been transformed in "protected nature park", with the dam around the lake has a natural barrier from the city's interference. And the layer of mud at the bottom of the lake means that it is connected to one of Bucharest's five main aquifers, providing fresh water that you can actually drink. Currently, "It looks wild and vividly green, contrasting starkly with the surrounding city that is grey and mineral" (Web-6).

Most of urban environments could be identified with climate conditions that cause high levels of heat stress in the warmer periods of the year and vice versa. Therefore, in this situation the use of the exceptional green open spaces of the socialist city to moderate the climate might give an opportunity to expand its benefits to the entire city. Urban green, with its enriched and restored vegetation, is an essential element in urban climate planning (Potchte et al., 2013).

"Green areas in cities are capable of modifying all thermal parameters. Vegetation management – especially urban forestry – contributes significantly to the mitigation of the urban heat island via evapotranspiration" (Takács et al., 2016).

In a pretty similar way, the city of Lubiana has been embracing/introducing policies and documents to improve the resilience of urban ecosystems to the global warming and to the constantly increasing development.

Its main spatial effort are focused to the revitalisation and refurbishment of existing built areas, and safeguard of natural areas (Jazbinšek, 2014). The city's Urban Masterplan 83% of all future urban development is directed towards the regeneration of compromised areas and brown fields (Web-7).

In the last couple of years, the municipality has created 80 hectares of new parks on formerly abandoned areas such as overgrown riverbanks and vacant industrial areas in 2010 approximately 1400 ha has been declared as “special-purpose forest” (Web-8).

The city’s strategic plan is to purchase these areas (mostly private properties) and guarantee long term protection.

The main goal is to reduce the impact of urbanisation on global warming and in general on climate change. The spatial plan recommends the reduction of emissions of greenhouse gases emitted from buildings and produced by traffic, measures and actions for energy-saving building activities, and decrease of the heat island effect by protecting non-built-up areas along the main wind corridors.

The spatial plan proposes the reduction of emissions of greenhouse gases from buildings and traffic, initiatives for energy-saving building activities, and reduction of the heat island effect by preserving non-built-up areas in prevailing wind corridors, conservation of green wedges and sustainable management of urban forests. As a source of cool air during the summer period and as a carbon dioxide absorbing sink, forests have a strong impact on the urban climate.

Due to the multipurpose use of green areas within an urban environment, such as sport, climatic and ecological benefits, the notion of multi-functionality becomes an important consideration in the process of planning and managing of the city.

We have to add also that Ljubljana’s Environmental Protection Program 2014–2020 (Jazbinšek, 2014) takes in consideration also the biodiversity as one of the primary planning concepts involving preservation and improvement of the existing conditions of biodiversity. Therefore, the main strategic objective of the municipality has been to establish an interconnected network of high-quality common spaces integrated respecting the cultural heritage, natural resources, and the built environment in general.

TOWARD THE NEW URBAN QUALITIES

Without appropriate hints for new housing spatial regeneration policies, no concept of sustainable development can be successful in ex-socialist cities/territories around Europe. In this regard, housing neighbourhood or housing project, in general, is one of the rarely discussed aspects of sustainability. Maybe this might be better clarified if we take into consideration that in housing research economic and social aspects have taken priority over spatial and environmental aspects.

Housing has to become the focal element of sustainable development, not only due to the fact that it is the major expansion of the urban area but also because through decades it has firmly structured the main urban areas in the former socialist countries.

The suburban socialist housing neighbourhoods are still considered among the most successful models of socialist planning, where the extension of urban green spaces and the design of public spaces act as a binder and characterizing element of these areas. Today this post-socialist space of the socialist city is an inherent part of urban heritage, it's not abandoned, and it's not left, it's simply vacant "green space", waiting there to be reprogrammed and reused with some other purposes.

In the last decade, due to the global crisis, ecological and financial, the architectural, and in particular, urban design paradigm has shifted from construction to the regeneration and the strategic focus has been given mostly to the small-scale projects and to the landscape as an ecological whole. This, historically exceptional situation, has awakened socio-political consciousness which has brought design and planning closer to the inhabitants and to the "everyday" problems.

Specifically, in the case of socialist cities, this ongoing process of the restructuring of the built environment with the underlying processes and forces of design paradigm changes, have produced some very interesting and specific, even paradoxical phenomena of urban and architectural retrofitting.

Previously discussed projects show how the regeneration of public spaces through the participatory processes can promote the spread of a new urban quality. In the vast open spaces of the post-socialist city, the new 'model' based on the recycling of public space can be considered as paradigm for the transformation of the urban environmental, and of the socio-economical life quality. In fact, in these places the landscape seems to be the perfect terrain on which to "experiment" the new regeneration hypotheses, thought of as both long-term and short-term strategies.

These processes, as mentioned above, include not only the regeneration of degraded or disused open spaces but also the design and construction of new public places, such as community gardens or urban farming, even in deteriorated or interstitial places, built with or without the consent of the authorities. This leads to the assertion that in the post-socialist cities the time factor has played and continues to play an important role, based on long- and short-term actions, in relation to the physical, social and infrastructural deterioration of the settlements.

Also, the idea of addressing green infrastructure into a more influential role of the city is a good opportunity to affect the structure and design of the new urban environment. Due to their capability to provide considerable new opportunities, these green ecology elements might have also important strategic relevance: triggering the process of green and circular economy, changing the quality of life, safeguarding biodiversity.

Foremost as spatial structure, green infrastructure is able to afford also benefits from nature to people, aiming to improve precious ecological production of clean air or water. These newly regenerated eco-structures, with its ecosystems, can reduce disaster risks, enhance water purification and air quality, and at the same time, they can provide the space for recreation and for climate change mitigation.

All, here discussed, good practices in the Eastern European countries show that there might be some new energies to create the new urban opportunities, and to go beyond the present impasse and find new design-tools for socially and economical sustainable urban development. To improve and to assure long term sustainability then even the recent lessons of irregularities, deviations and flexibility of urban planning should be transposed and integrated into strategies that will infuse new vitality in development of the post-socialist city and its environment. However, a great deal of political decisiveness of both municipality and citizens themselves is needed to put these ideas into operation.

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THE CHALLENGES OF KOSOVO MUNICIPALITIES CONCERNING PUBLIC OPEN SPACES AND THEIR MAINTENANCE

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ABSTRACT

Practice in Kosovo has shown us that the municipalities are planning and implementing capital investments at different costs, but they do not think or plan their maintenance. We wonder if those investments are sustainable and have a long duration.

Looking at the Kosovo trend, and after analysing the needs in the municipalities of Kosovo, it seems necessary to think about the next steps. Should we let investments as they are, or do we have to think how should we keep it? How should we plan the maintenance? What should we need to do in advance? How many technical and human resources we need and what will be the price for it, etc. etc.?

Regarding Public Open Spaces (POSs), all these questions have been addressed in a document called “Public Open Spaces Maintenance Plan (POSMP)” and “Public Open Spaces Investment Plan (POSIP)”.

This paper attempts to explain the necessary steps undertaken and the process for drafting a maintenance plan, the challenges over which the working group of the municipalities of Kosova, in this case the department of public services of the municipalities has gone through.

In order to begin the necessary activities for the drafting of the maintenance plan, Mayor of municipality issued a decision for the establishment of the working group and the coordination group with their duties and responsibilities. Then they have organized on-the-job training to use geographic information system (GIS). Through GIS they identified all POSs on their territory with all the elements within the POSs creating a database.

Parts of the POSMP are also the annexes where are presented monthly plans of activities for maintaining of all POSs which also foresees the planning of the necessary budget for the annual maintenance. If maintenance will be outsourcing, POSs activities plans

are an integral part of the bidding material. Whereby, the municipality concludes the maintenance cycle of POSs on its territory, including regular monitoring on a daily basis.

KEYWORDS: Public Open Space, Maintenance plan, Investment plan, Activity plan, GIS, Capital investments.

INTRODUCTION

After the war of 1999 Kosovo had many challenges, starting from emergency phase providing shelters for the population, reconstruction and construction of new administrative infrastructure, education, dwelling, road infrastructure, sewage system, water supply etc., up to the moment of establishing the state governance. Whereas regarding the environment, greenery, respectively the open public spaces and their maintenance the country had very little engagement on their agendas be it on central or local level.

The Council of Europe Identifies public open space as “an essential part of the urban heritage. A strong element in the architectural and aesthetic form of a town” Therefore, for Kosovo municipalities POS plays an important role in the lives of the inhabitants, besides the educational, ecological, economic development is also important for social interaction and promoting community development.

Working in the field of Public services, especially in public open spaces, with 17 partner municipalities of Swiss project “Decentralisation and municipal support - DEMOS I, it was big challenge for me also for responsible municipal staff involved in this field.

Support is dedicated to creating data base through GIS system, of all existing public open spaces (parks, squares, playgrounds, sport fields and other multi-use destinations) and to better maintain them. The assistance is primarily demanded, driven in supporting assessments, planning, monitoring service provision, enforcement, and public awareness.

Through this support to municipalities, have been developed Public Open Spaces Maintenance Plans (POSMP) and Public Open Spaces Investment Plans (POSIP) for 9 Kosovo municipalities: Shtime, Lipjan, Rahovec, Junik, Peja, Kamenica, Prishtina, Novoberda, and Vitia.

While researching and analysing different materials and studies, I noticed that different countries set different standards per m² per capita of public space, e.g. in Mumbai, based on the “The National Commission on Urbanisation (1988) suggests that the ideal ratio of open spaces is 4 acres per 1,000 persons, converted on square m per habitant is 16.19m². The ratio of open space per thousand residents in Mumbai is 0.03 acres (0.121m²/habitant) as against more than three acres in New Delhi and Kolkata.

Standards foreseen in municipal plans of Kosovo municipalities are adapted in POSMP. Targeted standard of POS in a long-term plan is 10 m² /inhabitants.

PLANNING PROCESS

In order to know which are next activities, terms and responsibilities of each individual during the drafting process of PMPOS and PIPOS it was necessary to undertake some activities before starting the drafting plan. First of all, mayor of municipality of Lipjan, issues the decision for establishment of Working Group (WG) and Coordination Group (CG) with description of duties and responsibilities (Figure 1). Member of CG it can be Mayor or Vice mayor, Director of Public Service or Director of Budget and Finance, whereas member of the WG are Director of Public service as a leader, officer for environment, gender officer, urbanist, planer and finance office. In total member of the WG are planned to be five, seven or nine officers, depending how big the municipalities are.

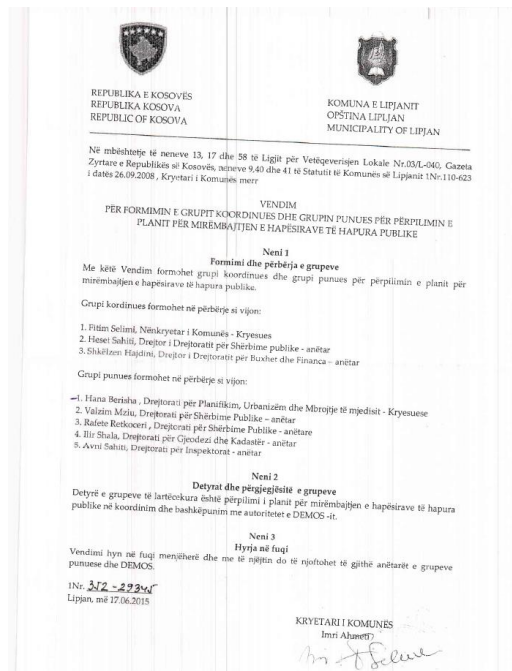


Figure 3: Municipal decision for establishment of Working Group (WG) and Coordination group (CG)

Since we had no experience to draft such plans in Kosovo, the donator with participation of municipality has seen it reasonable to fund the study visit in Swiss at the city of Biel Bienne. Coming back to Kosovo the working group started with the first steps on drafting the plan. The

working group of Lipjan Municipality with the support of the field experts initially drafted the working plan including all necessary activities, time period and deliverables.

Activity plan and deliverables - MPPOS/IPPOS Lipjan municipality 2016-2021									
Phase	Which Plan? Maintenance Plan (MP) or Investment Plan (IP)	Steps	Activities expected from the consultant	Deliverables	Expected from Municipality (consultant will not move to next stage before municipality delivers the expected deliverables)	Remarks	Maximum number of expert days		
							Senior expert (SE)	Junior expert (JE)	Total
Startup process	MP / IP	Establish Working Group (WG) and Coordination Group (CG) and identify stakeholders	n/a	Establish WG and CG and identify stakeholders	Decision on establishment of WG and CG and a supplying with a list of relevant stakeholders	Meeting with Lip on 19 June 196)			
	MP	Introduction/Preparatory meeting with the WG and CG and other stakeholders	Participate in the meeting and present the content and process of development of a maintenance plan	Organizing the meeting with complete participation of the members of WG, CG and relevant stakeholders Supplying the contact list of the members and other stakeholders	Members of WG and CG to be informed on process and procedures of development of MP	to be done together with discussion of table of contents			
	MP / IP	Finalize Table of Content	Share and agree with municipality the table of content with clear instructions for WG and elements to be included	Final MP Table of Content approved by DEMOS and agreed with municipality	Municipality agrees on table of content		1		1
	MP / IP	Work plan template	Finalize the work plan template based on the approved table of content	Final work plan template adaptable to all municipalities, approved by DEMOS	Municipality approves and commits to comply with responsibilities and timeline				0
Timeline: June 10, 2015									
Data Collection	MP / IP	Data Collection Template	Data collection questionnaire	Develop a data collection questionnaire for assessing the current situation, according to the agreed table of contents	Final data collection questionnaire with the elements according to the agreed table of contents, approved by DEMOS				
		Data collection	Data Collection and analysis	Access to the information and database	A brief report from consultants on available data and additional data collection required	Partly done already and to be finalized within AFS on quality-check			
			n/a	All data collected and sent to DEMOS	Completed questionnaire and relevant documentation sent to DEMOS				
		Data analysis	Assist the municipality to process all data collected	Work with DEMOS experts in data processing	All data processed and verified, a document with data processed sent to DEMOS				
Timeline: June 10, 2015									
Chapter 1 introduction	MP / IP	Draft the first chapter of the plan to include Scope of the Plan, Municipal Profile, MOP & Zoning Maps & DRP and reference documents	Chapter review and finalisation	Prepare a draft of Chapter 1	Chapter 1 of maintenance plan approved by WG and CG (decision taken by the CG)		2	1	3
Timeline: June 26, 2015									
Chapter 2 Current Situation and	MP / IP	analyse data	Assist the municipality to analyse the POS inventory and possible additional data / reports	draft chapter 2, current situation	Baseline report approved by the CG and published (through local media, municipal website and circulated to all relevant stakeholders)	the data will be available, they just need to be put into a report format	1		1
		deliver a presentation on the current situation	Prepare and facilitate a 1 day workshop on evaluation of current situation and on improvements by better maintenance and by investments	Workshop with all stakeholders present	active participation at the workshop of the respective departments (public services, finance, urbanism?)		1	1	2

Figure 2: A part of activity plan and deliverables of POSMP and POSIP

The planning period of WG upon drafting of POSMP and POSIP by Lipjan municipality was very ambitious at the beginning, planned to be completed within 4 months (June – September). Nevertheless, when the municipal officials started to work, they needed more time to work on the document then they have foreseen. First of all, they had to perform their primary duties as per they working contract and later on to work on drafting the plan as additional task provided by employer, not being paid for it, thus it has been foreseen to work on it within the daily duty and this kind of performance has delayed the entire process. We have also to consider other administrative bureaucracies within the municipality. So, the final approval of POSMP&POSIP at the assembly took 6 months instead of 4 planning months.

IDENTIFICATION OF PUBLIC OPEN SPACES AND CREATION OF DATABASE

Creation of POS database is the main element to start working on the Maintenance and the Investment plan of POS. In order to create the sustainable database and update it time to time it has been decided to

do it with software GIS – Geographical Information System. The working group was in need to be trained in advance. We have chosen to use this software since it is an open source and it can be downloaded from internet.



Figure 3: POS in urban zone of the city of Lipjan

During the identification of public spaces, the WG encountered many difficulties to compare the cadastral data. In many occasions they did not match. At the end as real grounds for maintenance of POS were taken the areas being measured at the field.

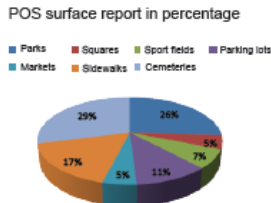


Figure 4: Summary – POSs by area

The process of drafting the plan included the regular meetings between WG and CG after each completed chapter. Only after the approval of work by CG we worked further to the next chapter. During the planning process it is also important to have the organisation and the participation of citizens, where through organized public discussions we have consulted and considered their requirements.



Figure 5: Photos from working group and public debates

CHALLENGES

Having in mind that this is the first from 5 municipalities that started to draft the POSMP and POSIP, indeed the working group encountered many challenges.

Some of those challenges are as below:

- Mayor's Decision on establishment of Coordinating and Working Group and start of work;
- Training of WG with GIS software;
- Identification of POSs at the territory of Lipjan municipality;
- Discrepancies of cadastral notes with the records in the field
- Public debates with citizens;
- Small municipal budget to maintain the POSs;
- Decrease of priority list to 22 POSs only in urban area;
- Current area of POSs for active and passive recreation is 5.82 m2/inhabitants;
- Target quantitative standard of POSs in long-term in 10m2/inhabitants.

POSMP has its annexes where you can find the compiled table of activities for 22 POSs which based on existing and planned budget, will be maintained. These tables would be part of tendering material of Lipjan municipality in order to enter into a contract with maintaining company.

Project title		HPP-1_D																			
Maintenance total cost		5,239.47																			
Category		Park																			
		Number of activities undertaken at POS during the period of maintenance activities																			
No.	HPP Name	Activity description	Unit	Quantity	Unit price	Total price (annual)	No. of activities (annual)	January	February	March	April	May	June	July	August	September	October	November	December		
1	CA	Collection and disposal of waste	m ²	2698	€ 0.01	2,590.08	96	2	2	10	10	10	10	10	10	10	10	10	2	1	
2	CA	Removal of graffiti	m ²	2,698	€ 15.00	40.47	1			1											1
3	CA	Cleaning and maintenance of the fountain/sip	copy	1	€ 5.00	20.00	4			1	1	1	1			1					1
4	CA	Removal of snow from pedestrian paths	m ²	748	€ 0.01	59.84	8	2	2	1									1	2	1
5	H	Irrigation of green areas	m ²	1950	€ 0.01	721.50	37			1	4	6	6	6	6	6	2				1
6	H	Mowing the grass as per technical specification	m ²	1950	€ 0.01	721.50	37			1	4	6	6	6	6	6	2				1
7	H	Repairing of low greenery/grass	m ²	97.5	€ 0.20	19.50	1			1											1
8	H	Fertilization of the green areas	m ²	1950	€ 0.10	195.00	1			1											1
9	H	Planting of low greenery/flowers	m ²	100	€ 0.05	5.00	1				1										1
10	H	Planting low greenery/flowers	m ²	100	€ 0.20	20.00	1				1										1
11	H	Maintenance of high greenery - planting trees	piece	19	€ 5.00	95.00	1		1												1
12	H	Clipping, disinsection and deratization	m ²	2698	€ 0.01	26.98	1				1										1
13	CE	Maintenance of urban furniture/ benches	piece	3	€ 20.00	120.00	2			1			1								1
14	CE	Maintenance of urban furniture/benches	piece	5	€ 50.00	250.00	1			1											1
15	CE	Maintenance/repairment of cobblestones paths in case of damage as per technical specification	m ²	37.4	€ 9.00	336.60	1			1											1
16	CE	Maintenance of lighting	piece	18	€ 0.80	18.00	2				1						1				1

Figure 6: Tabular forms of activities for maintenance of specific POS within area, unit, quantity, price and timing

The maintenance of POSs previously and recently has been made through service contracts given to outdoor contracted operators, respectively the framework contract with 3 years' duration. The same are managed by engaged official who is in charge to supervise the infrastructure projects. We can mention some of the deficiencies identified on it:

- Deficiencies on division of maintaining areas/fields;
- Deficiencies on anticipated maintaining activities;
- Incorrect description of maintaining activities;
- Lack of technical specifications;
- Deficiencies on planning and maintaining dynamic, etc.

The afore mentioned deficiencies have set in doubts the relevance of offered prices in previous contracts, whereas as consequence the monitoring of maintenance could become difficult. Nowadays, the municipality can monitor in advance the contractor as per the plan of planned activities and seek for responsibility from the contractor also to plan the necessary budget for next year's pursuant to POSMP and POSIP.



Figure 7: Approved POSMP and POSIP for Lipjan Municipality

In December 2015 after 6 months of work made by WG and CG we have managed to complete the drafting of PMPOS and POSIP for Lipjan municipality and approved it at municipal assembly.



Figure 8: Lipjan Municipal assembly decision for approving of POSMP and POSIP

CONCLUSION

On the whole we can say that because of the difficulties we had, initially the project itself which supported the municipalities, but especially the municipalities involved in the drafting of maintenance plans, this initiative and engagement of both parties has resulted in success of the municipality and the citizens who are users of the POSs.

Municipalities have come to the conclusion that without the right maintenance plan and investment plan in the POSS, cannot have a fair budget planning and cannot have maintained public open spaces. Not having maintained investment maid in POSs, is a failed investment, because over the time it begins to be demolished. In this case, the citizens are dissatisfied, and the environment is unclean, degraded and unmanaged.

Finally, we can conclude that the experience in the 10 supported municipalities is guidance for other municipalities in Kosovo that have no maintenance and investment plan of POSs. They should take initiatives and act as soon as possible with the development of the

POSMP and POSIP, independently or with the support of external expertise.

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CROSS-CULTURAL PARK OF THE BENEDICTINE MONKS IN THE ADRIATIC

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ABSTRACT

Starting from an analysis of the potential proximity that exists between the two opposite coasts of Dalmatia and Gargano, the paper proposes a project idea applied to this context. The transcalar methodology adopted has led to observe some anthropic relationships between the two shores, such as the twin monasteries of Benedictine monks founded in medieval times. The project proposes the enhancement of these and other potentials of a cultural nature through a vast area project that also proposes designs as an example applied in two of the identified historical sites: the monastery of Santa Maria di Pulsano on the Gargano and the Monastery of Blaca on the island of Brac.

KEYWORDS: Benedectine Monasteries, Adriatic culture, proximity, urban and landscape design.

INTRODUCTION

Usually, when you attempt to identify an area where it is possible can confirm the permanence of cultural and architectural characteristics, it refers to a portion of land territory. The history of architecture often results in geographic areas in a given historical period that have produced architecture very similar to each other. The case of the Benedictine monasteries in the Adriatic area is an incredible exception. The fact that important monasteries like Santa Maria of Pulsano on Gargano have had identical foundations with the same names on the numerous Dalmatian islands can only intrigue any culture and design researcher. In medieval times, a priest and Benedictine monk from the Tremiti islands was invited to found a monastery on the island overlooking Ragusa, the current Dubrovnik; and still the noble Savino, at that time, Count of Ragusa, founded the monastery of Rozat and put him in the direct care of the abbey of Montecassino; still reads that the Croatian Prince Despot Donat donates some of its lands on the island of Mljet to the monks of the Abbey of Santa Maria of Pulsano to build an identical monastery on the Dalmatian island. These are just a few examples that testify to an intense exchange between the monastic foundations between the two shores of the Adriatic. Monographic studies have counted many Benedictine abbeys in the Puglia area that have had relationships with many abbeys on the Dalmatian islands. In particular the Gargano peninsula and the islands of Dalmatia have the highest number of foundation twins. In every way Benedictine monasticism was very instrumental in the construction of the anthropic landscape and agricultural Gargano and that of the Dalmatia. In fact, the work of the Benedictine monks was closely linked to the natural landscape and the processing of the same in the agricultural landscape. Firstly, the monks reached the most inaccessible and enchanting places to locate their hermitages; places where they lived in poverty and continuous prayer, contemplating the nature that surrounded them. Then, in some of the secluded settlements, monasteries were built which kept a very strong connection with the natural component of the places in which they existed. In addition, the monks were often entrusted with the activities in the fields and then they were actors in the transformation of the natural soil into agricultural soils. The monks also built roads, pipelines, monastic houses, outbuildings, farms, wells, and churches, which were found to benefit not only the monasteries themselves, but also all civil society that revolved around it. Both the settlers the monks themselves were operating the field, clearing and tilling the soil. This last point is considerably important for our research

purposes. The territories of Puglia and Dalmatia have always had a link to the original material from which it is composed. Limestone is a material present on the mantle surface, and which prevents the cultivation of crops. All architecture in rural dry stone have to accommodate to all the material resulting from the tillage of the soil. Therefore, it is not inconceivable that the work of the Benedictines in Puglia and Dalmatia are closely related to construction in dry stone terracing on the vast mountainous regions of the Gargano or the tholos constructions scattered throughout the region. The monasteries themselves were often made of the stone found in the construction site, like the existing caves, hermitages that we previously spoke of. Among the most valuable examples is the unforgettable complex of San Michele in Monte Sant'Angelo on Gargano.

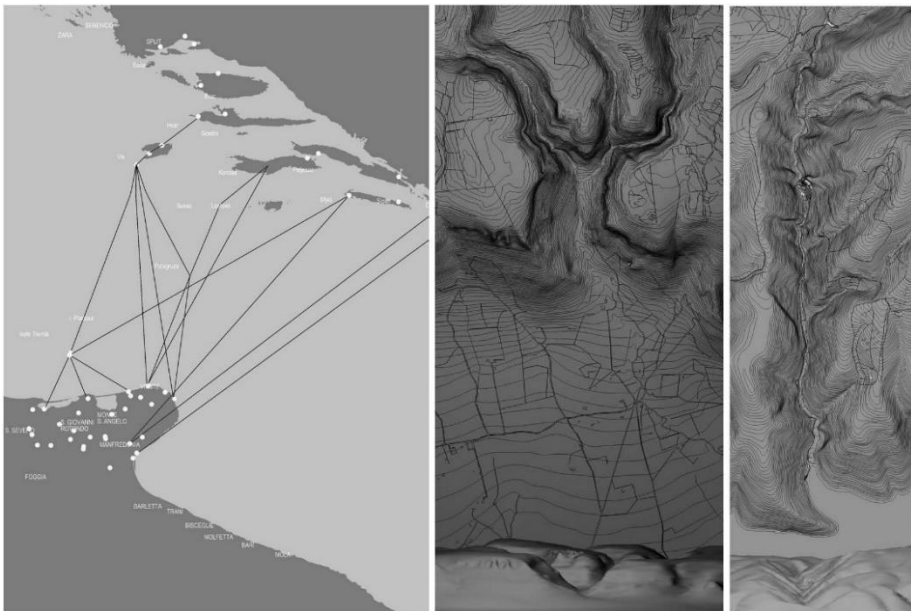


Figure 1: Interested Adriatic area and territorial example cases

The project

To sum it all up, it is possible to define a geographic area characterized by two strips of land bordering the same sea where, in a given historical period, the mostly Benedictine monastic culture, acted leaving indelible marks in time. These signs are now made from the remains of the monastic houses, hermitages scattered by the natural

landscape and man-made signs in the area of agriculture. The action of the monks binds strongly to a constructive culture which is the stone that characterizes in a decisive manner the landscapes of which we speak. The design of a cross-cultural park between the two opposite sides of the sea, belonging to two different states is complex and deeply related to economic planning and policy. Any design choice at this scale, involves large capital movements and outlines the fate of some areas and other social and economic repercussions. It is clear that the proposal described here is far from solving a massive design problem but suggests one of the possible strategies to regenerate proximity effects on tourism and the use of the territory. The current state of the connections between the two sides is variable in intensity, between summer and winter: Bari and Dubrovnik are connected by a ferry line as is the case for Ancona and Split; outside of these distances from time to time there are ferries from Pescara and Vis in Dalmatia.

The initial idea of the project is the creation of links between the two areas directly without intermediate steps such as urban a split, Dubrovnik and Bari. This will allow the intensification of already existing internal connections that would serve the remainder of the fields on the two coasts.

Such a network would create tourism between the two sides, tied to routes of different natural and cultural-religious landscapes with the idea of cross-border park of Benedictine settlements. The creation of a new network of direct connections between the two areas will create travel routes across the sea to visit similar monumental monastic settlement divided by the sea. Therefore, the park will have to be made by means of mid-term planning that will cover the individual macro areas-Gargano and the Dalmatian islands.

The project starts from sacred path Langobardorum on Gargano, which brings a series of culturally valuable highlights. The project gives present day value back to this ancient path in its entirety, making the journey remarkably valuable in some areas like the central point of reference, Monte Sant'Angelo, and the hermitages of the S. Pulsano Maria monastery. The monastery of S. Maria di Pulsano, located four meters high, is placed at the end of a high-level hike that starts from Monte Sant'Angelo which overlooks the Gulf of Manfredonia. The site summarizes several peculiar characteristics of the promontory; the road that leads to the monastery is a branch of the Via Sacra Langobardorum which was traveled a long time ago by Giovanni (John) of Matera. He founded the monastery in a safe place where it was the presence of

hermits before, but at the same time, is one of the most beautiful places in natural value of the area.

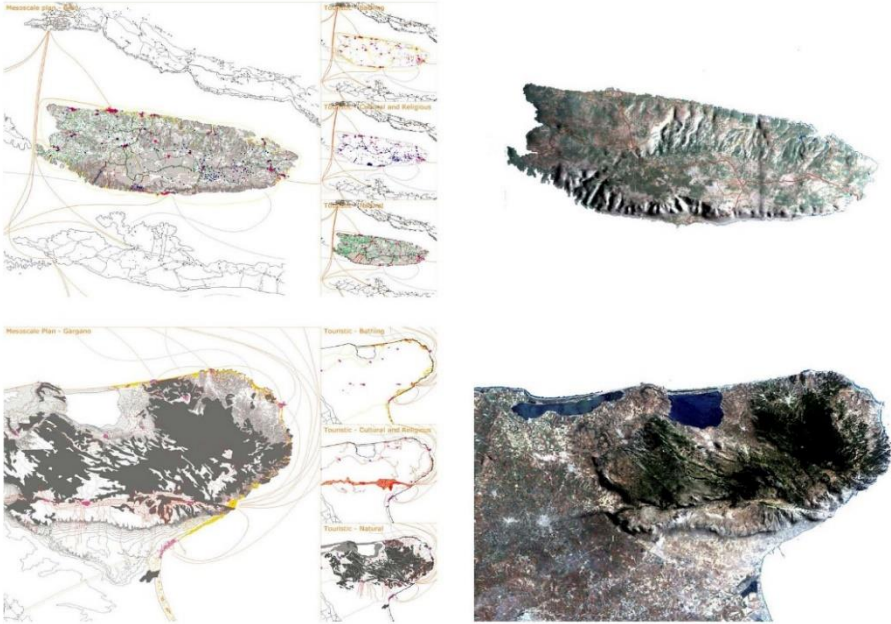


Figure 2: Landscape project

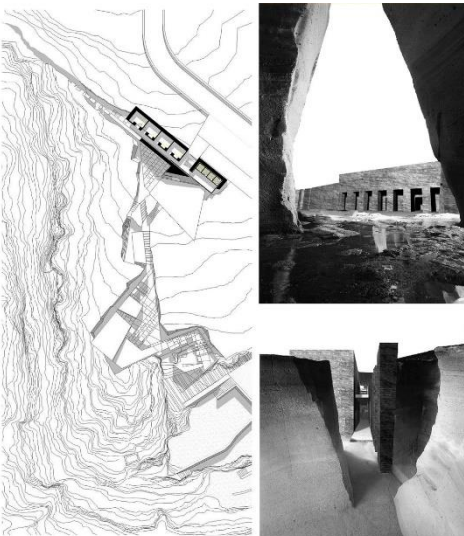


Figure 3: Santa Maria of Pulsano project

The stone and the relationship with it are the essential features of the landscape. The valley is an incision into the rock, and everything seems to form a part of it. The agricultural system is arranged in terraced farming in dry stone; the first settlements, ancient monasteries, places of solitary life in the search of the ascetic, bear witness to the long history of coexistence between man and stone: the search for a shelter, a natural cave, the excavation work on it and the next partial closure through a wall. The next monastic facility tells is a wonderful example of a philosophy of building in stone. Here too, the first settlement was a cave; after the building of the monastery came to pass on it for layers and layers through the use of stone. The project enhances this place as a cultural site of great interest and provides for the development of the ancient paths carved into the rock that can reach the hermitages scattered throughout the valley.

On the right side a guesthouse equipped conference and museum exhibits has been designed. The prospectus analysis of the monastery suggests how all the buildings set against the rocky ridge never exceed the level of the plateau behind except the last buildings of the 60s or newer; In fact, once arriving at the monastery, its presence is hidden by the cliff. The project is being positioned on the right side of the monastery, visibly unresolved as a margin. It is linked to the system of terraces below through a system of lifts which lies on a natural concavity gaining the perception of the landscape. The main theme of the guesthouse respects of the portion of the land which coincides with the covering and consequently grows inwards by an excavation under the open sky in which the building fits. The project interprets the theme of structural material continuity through a yard of stone to build through a plasticity of form and a constructive large form, deliberately cyclopean, to emphasize the potential of the material.

The path from the holy shrine of Pulsano continues with a trail that leads from Monte Sant'Angelo to appear on Punta Rossa and through a road that descends to Mattinata. Here there is the chance to sail to the Dalmatian archipelago, the sacred places of the 'deserts' sacred Brac, which is one of the most richly evocative. The network of connections designed identifies four countries of landing on the island: Supetar, Sumartin, Bol and Milna. From these four centers branches off a series of coastal trade along the coast, reaching the other countries of the sea and secluded bays, and an extensive internal network that identifies the same routes described in the Gargano. The cultural route linked to monastic settlements is drawn through a mesh of roads and trails that allow the observation of the landscape by visiting different

places rich in cultural and historic value. Among the most interesting destinations linked to the sacredness is the area of the so-called 'deserts', which translates in an exemplary manner the mix of cultural and natural routes. The draft prepared by the valley of Blace is an application in micro-scale of the overall strategies undertaken in the project area on the island.

The site is characterized by the presence of natural and cultural values; in a particular context are natural geomorphology next to the component represented by the major erosional valley Glagolitic monastery on the island of Blace. It is on a spur about two and a half kilometers from the bay and evokes the ancient monastic presence. Browse the valley ran a river of stones stands, interspersed with vineyards, which flow into the slopes of olive trees, cliffs shaped by water, forests of Aleppo pines. Currently, the monastery is accessible from the hinterland to the sea while the path is closed to those not using a private boat.

A system of cabotage around the island and the inclusion of the Bay of Blace within this route allows you to rethink the ascent from the sea towards the monastery, the monk's once Glagolitic beaten track.

After landing at the new redesigned pier, the journey continues through the valley, walking alongside the natural images and almost always compromised by the presence of man; the only interventions assumed in the valley provide for the redevelopment of some of the ruins present, the rehabilitation of some dikes and trails in the valley, and the arrangement of equipment and places to rest.

The monastery project is seeking to create a guesthouse in addition to the existing museum, with a view to establish a center that will support sustainable, once fervent, agricultural production, through the entire area surrounding the relocation of the levees, and the planting of orchards, vines, and the water supply.

The design of the guesthouse has the intention of preserving the external perception of the site, an excellent summary of the building into the landscape. Without adding volume, it was decided to be built by digging in the basement consists of a wall that contains part of the fill and occlude the bed of rock which rises from the monastery itself.

The project is, therefore, an excavation and construction on the rock made by shaping a ditch from which we sight the landscape and the monastery above.

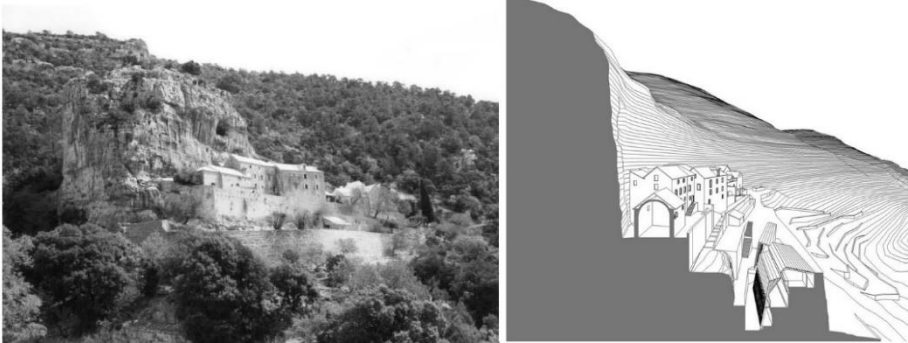


Figure 4: Santa Maria di Blaca project

CONCLUSION

Why is this important today? It is not only a matter of interest to scholars, historians, enthusiasts, but also because culture in the broad sense, is now a great potential for the so-called tourism industry. Throughout the ages, there have been questions about the past and somewhere, someone has tried to revive it with precise aesthetic and cultural intentions. Our age has a varied attitude towards the past. It is an era that inherits great opposing ideas regarding ancient and modern history; in the avant-garde of the first half of the twentieth century and supports those who argue the value of a continuity between past and present. Today however, what most affects the relationship with history is the possibility to create a sort of 'time machine'. The time machine is a pipe dream as old as the world. In reality, however, no one has ever approached it like us, the men of the twenty-first century. We have not the means to bend time, but now we can build a good approximation of any context or history of the past. The ability to virtualize the history of modern man in the digital world has reached unimaginable levels only a few decades ago. One of the shocking goals of the electronic era. Now is the time to rebuild a real tourism economy, especially in those areas with not only a profitable geo-climatic context, but are imbued with signs of stories, all waiting to be told.

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URBAN-BUILDING PHYSICS AND TECHNOLOGY

EMPHASIZING THE 'GREEN' PROPERTIES OF ETFE FOILS AND VISUALIZING ITS SPECTRUM OF IMPLEMENTATION IN ARCHITECTURAL BUILDING ENVELOPES

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ABSTRACT

ETFE (Ethylene Tetrafluoroethylene) membranes or differently called the transparent foil is a new material in architectural applications which makes it moderately explored by the professionals and academy. Recently it has been the selection of many pioneers that seek various alternatives in materials and techniques for increasing the building's efficiency and their Green impact on the environment. ETFE as a very light material attracts the attention of many designers for integrating them in the building. Apart from the lightness of the foil that asks for less heaviness on structural support some other properties that makes it relatively a Green selection are the lesser maintenance cost and time through their lifetime, it's 100 % recyclability, lighting transmission properties, its expanded lifetime that has increased recently by many manufacturers, its high resistivity to degradation from severe outdoor conditions etc. These up-mentioned properties have been illustrated and displayed by the case study approach and are concluded in the later sections for highlighting further those characteristics and putting into observance the parameters that need to be improved deeper for achieving a wider applicability in architecture.

KEYWORDS: ETFE (Ethylene Tetrafluoroethylene), Green, transparent foil, light material, recyclability

INTRODUCTION

The consumption of energy for the built environment is covering $\frac{1}{3}$ of the total consumption of energy in the world. Meanwhile investigating the energy consumption for specific building cycles, figures out that 85-95% of the total energy used by building is consumed during its operation phase which raises the concern of this phase in the forefront. (K. 2010)

The material selection is a key step for improving the energy efficiency by the built environment and this selection can be measured upon the environmental impact of the material, cooperative properties among selected materials, lifespan and certainly without dimming the maintenance requirements.

ETFE results as a new material in architecture with its own limitations that is still being worked on for their improvement but doubtlessly providing its enhanced characteristics when used adequately in the building systems. They have been initially developed by DuPont in the service of aerospace industry in 1980's. (www.birdair.com 2017). Its first implementation as a building envelope started as covering for greenhouses. The first prominent buildings using ETFE foils as main covering envelope are Eden zoo project in Cornwall in 1998 than in 2006 is the construction of Allianz Arena soccer stadium in Munich, Germany and then the "water cube" in Beijing Olympics in 2008. (www.wikipedia.com 2017)



Figure 1: Eden Zoo in Cornwall, 1998 (www.pinterest.com 2017)



Figure 2: Allianz Arena Stadium in Munich (www.to-experts.com 2017)



Figure 3: Beijing swimming pool hall (www.constructionphotography.com 2017)

To all of the up-mentioned projects the quality of space and energy efficient approach are key generators of designing with ETFE cushion membranes. (www.birdair.com 2017) Some of the key characteristics of the membranes are: lightness, slenderness of supporting materials in need, complexity of the structure solved effortlessly, colourfulness, 100% recyclability, high transmissivity, high thermal insulation properties when arranged in more than one layer (inflated cushions), high temperature resistivity, low maintenance cost and low embodied energy. (K. 2010), (Kowalski W. 2016)

The objective of the study is to highlight the characteristics of the ETFE foils for acquiring energy efficiency and Green performance on the applied building. For achieving the expected outcome from the study a review on the provided literature and a thorough extraction of the fundamental properties from various implemented projects is endeavoured to be achieved. The expectation is displayed in a

retrospective paragraph referring to past literature and accomplished implementations.

OVERALL CHARACTERISTICS OF ETFE FOILS IN ARCHITECTURE PERSPECTIVE

ETFE is the abbreviation of Ethylene Tetra Fluoro Ethylene so it is fluorine-based plastic. It has been manufactured for possessing properties such as resistance to relatively high temperature variance, corrosion resistance, electrical resistance, chemical resistance and radiation resistance. (www.wikipedia.com 2017)

STRUCTURAL AND INSTALLATION CHARACTERISTICS

For the application techniques and installations there is need for a specialised group of workers. The integration of the membrane with the supporting skeleton or structure is realized by specialized labour forces which makes the unique joint connection happens. For the membranes to fit perfectly on the supporting skeleton there is need for precise design and calculations through the manufacturing process to preparation of individual elements and assemblage in the site.

The elements vary according to the character of space they are covering performance which is pretended to be acquired in the final product. They can be a single layer of ETFE membrane, double layer, triple layer, 4-layer and 5-layer membranes. From 2 layers to 5 the membrane is provided in cushion form or in stretched condition which is rarely used due to its complicated calculation on form finding. (Lombardi S. 2015), (Wu M. 2011) For the cushion elements to be constantly pressurized there is need for some helping appliances such as sensors and air pump. (Wu M. 2011)

ETFE reaches the same span dimensions with the equivalent glazing at a weight of less than 1%. Due to this feature the weight of the supporting skeleton is reduced drastically and the span between the supporters is increased enormously, approximately four times the glass covering. (Wu M. 2011) The lightweights of the membrane are associated with less time consuming through the mantling process. (Kowalski W. 2016)

OPTICAL PROPERTIES

ETFE membranes possess very high sun light transmissivity and IR radiation which enhances the greenhouse effect in the indoor space and need for advanced strategies is emerged. In the case of multiple membrane cushions optical characteristic is dependent on the

curvature of the last ETFE layer of the multi-layered membrane. (Lombardi S. 2015) The intensity of solar radiation can be controlled by: multi layered cushions, printing on film, colour in the mixture of polymers and additional shading elements installed between the layers. ETFE has ability to transfer long wave radiation of electromagnetic waves (IR), a feature which is not possessed by the glass, so due to this reason it behaves differently compared to the glass and there is no calculation machines that provide results for the effect of IR into them. (Lombardi S. (2015) Combination and optimization of opaque surfaces and transparent ETFE membranes would enhance the qualities of the space in terms of lighting. (Masih D. 2015)

THERMAL PROPERTIES

ETFE as a thin material possesses low thermal resistance as its thickness varies from 0.1-2 mm. (Lombardi S. 2015) Providing air cushions of ETFE would reduce the heat transmittance to acceptable levels. A Triple layer of ETFE cushions perform close to the glazing characteristics by improving the U-value to 20%. In the tables below are displayed the ETFE thermal transmittance properties when the layering of the cushion changes and glazing topologies & characteristics as a matter of comparison.

Table 1: U-value of different layer cushions (Lombardi S. (2015))

ETFE layer cushions	U-value (W/m2 K)
2 layer	~2.95
3 layer	~1.96
4 layer	~1.47
5 layer	~1.18

Table 2: U-value of different glazing types (www.yougen.co.uk 2017)

Glazing layers	U-value (W/m2 K)
Single layer	~5
Double layer	2.2 - 1.2
Triple layer	1 - 0.6

The two factors that affect the thermal resistance of the cushions are the convection (heat transferred through air circulation) happening within cushions and surface resistance of each of the layers towards the thermal flow. By printing on surface of ETFE the total g-value (solar radiation transmitted by a material in this case the ETFE foil) can be reduced to a level of 0.48 and by using triple layer of ETFE it is reduced to 0.35. (Lombardi S. 2015) In the figure 4 are shown some different printing textures on membranes which possess specific lighting transmittance coefficient.

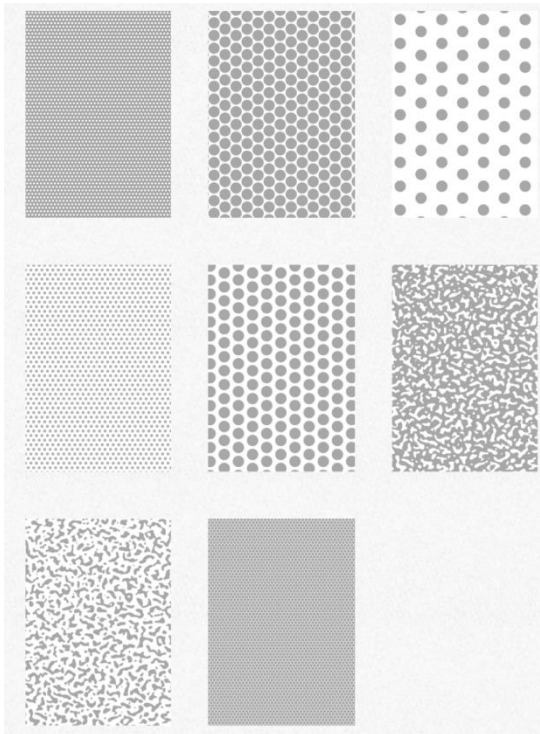


Figure 4: Printing textures on membranes

ACOUSTICAL PROPERTIES

At low frequencies ETFE fully transmits the sound while at middle and high frequencies it absorbs at most 30% of the sound generated and reflects most of it. It has deficiencies in many aspects while the sound that is produced from within the ETFE covered space can be easily transmitted to the nearby facilities and buildings and the sound

generated outside can rapidly penetrate through. Also, the raindrops cause drumming noise within the space which has been an important challenge for manufacturers to be fixed. In general, the drumming effect is reduced by rain shield noise suppressors which in general are applied on outermost layers. In the figure below is shown the application of sound suppressors in ETFE cushions.

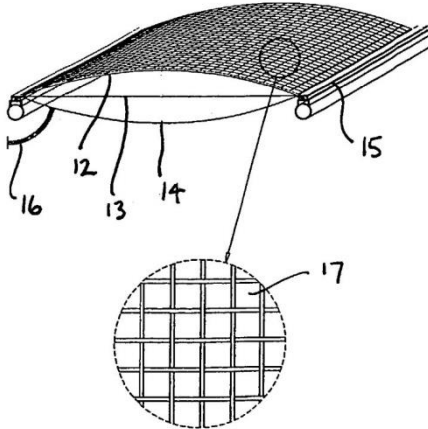


Figure 5: Influence of acoustical suppressors in rain drop damping. (www.google.com 2017)

In the figure 6 is shown the effect of the sound suppressors in the acoustical performance.

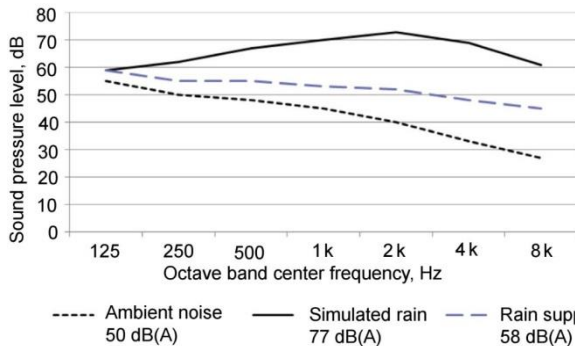


Figure 6: Influence of acoustical suppressors in rain drop damping.

In some cases, the manufacturers are producing triple layered cushions where a plexiglass and an interior perforated pillow is incorporated within the ETFE cushion system. Past researches have

shown that ETFE membrane with noise suppressors for the rain drumming effect is highly approaching the performance of glass surfaces in terms of acoustics reflectance and absorbance. (Chiu S. 2015)

In spaces with background noise such as environments with a couple of machines working within, helps in reduction of background noise because of being acoustically transparent, this works in low frequency noises. (Chiu S. 2015)

The main milestones to be accomplished at some of the implemented projects is the reduction of the noise caused by the raindrops by analysing the rain flow rate, droplet size, surface area of the acting rain and velocity of the droplet. Some of the currently experimented solutions that would fix the acoustical effect induced by rain droplets are the addition of an extra covering layer, adding an insulating layer in the middle of the air filled cushions and reducing tension to the outer most layer by increasing damping. Some of the factors that should be taken into account from acoustical point of view during the design of the ETFE membrane are the transit systems such as aircrafts, vehicular, rail, watercraft. The reaction of the membrane to the noise acting on it is directly related to the design of the membrane. (Chiu S. 2015)

APPLICATION OF ETFE IN ARCHITECTURE, A SERIE OF REPRESENTATIVE REALIZED PROJECTS

DOLCE VITA TEJO LISBON, PORTUGAL

Dolce Vita Tejo Shopping Center after construction completed in 2009 was the biggest shopping mall in Portugal in city of Madeira and the first shopping center where ETFE is been used. Designed by RTKL, London in co-partnership with Promontorio, Lisbon this project has a building area of 46000 m². (www.facadeworld.com 2017), (www.architizer.com 2017) The structure of the building is reinforced concrete covered with an ETFE roofing membrane, the integration of the system was one of the objectives of the project. There are totally used 346 cushion elements with approximate dimensions of 10m x 10m. Is been used 200000 m² of different ETFE membranes for the whole covering. (www.ptprojects.co.uk 2017), (www.gravidade.pt 2017) To realize the objectives of having an inside well enlightened space and good performance on heat exchange the designers proposed distinctive coating systems (high performance selective filters) on ETFE inflated cushions integrated with low-E treatments of the layers. The north light

was preferable for this project and the need for shading elements was provided by well-coordinated coatings. (K. 2010) By maintaining the design integrity a considerable reduction in cost was achieved. By the three dimensionality of the cushions and several different coatings and treatments the principle for achieving the “north light” was fully realised and eliminating the direct unwanted light and glare effect was met (Lombardi S. 2015) One of the effects of the interior is that it gives the impression as the walk is happening outside in the natural air and light due to the effects of the lighting strategy and slenderness of the structure.

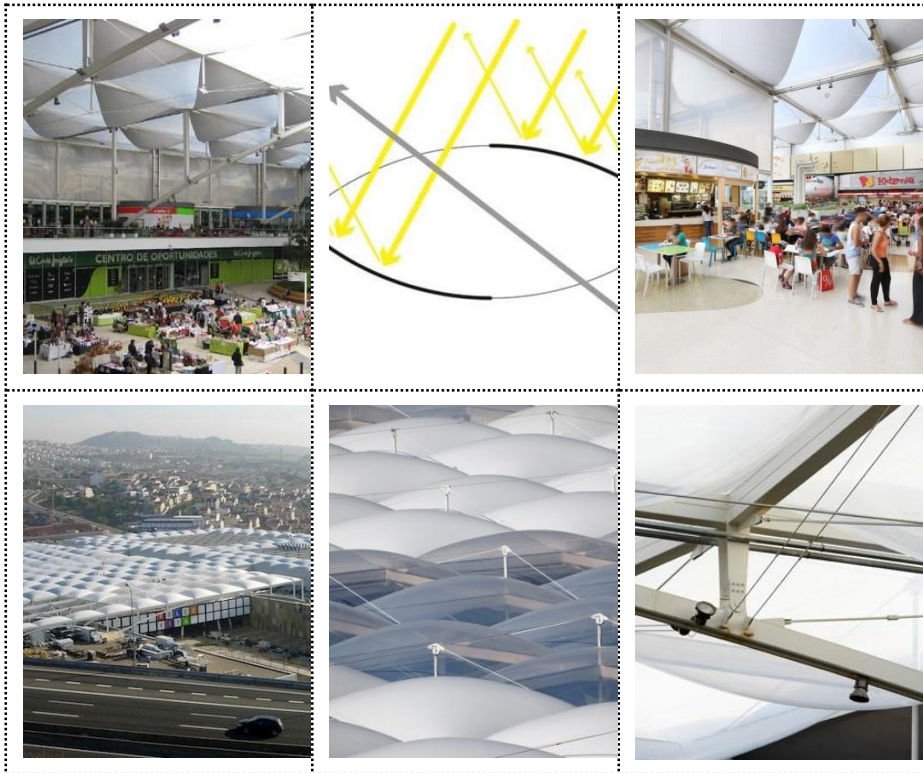


Figure 7: images of Dolce Vita Tejo shopping mall from the interior, exterior, joint details, from the top and sketching showing the special properties with respect to daylight control. (www.pragma.pt 2017)

GERONTOLOGY TECHNOLOGY CENTRE, BAD TOLZ

Located in South of Germany the Gerontology technology centre is the first building where is been used in facade a single layer of ETFE transparent film constructed in 2003. It is a spiral building which is

comprised by a shopping area on the ground floor and office space on the upper floors. One of the most inspiring characteristics of this building is the walkway between the outer facade made of ETFE and the glazing of the interior. The space between the glazing and ETFE acts as a buffer zone with its own physical characteristics. The space can be ventilated by the upper and lower parts of glazing.



Figure 8: Figures of Gerontology technology center in Bad Tölz from inside and outside the double skin facade. (www.kochmembranen.com 2017)

The total area of the ETFE facade is 1550 m² and is completely a pre-stressed layer supported by very slender elements. Apart from being the first case that a single layer of ETFE is used in building facade it is also the first case that an ETFE film is been used as the outer skin of a double facade system. The sun protection and light scattering is provided by the silver dot fritting surface applied on the foil. The life of the membrane is expected to reach more than 20 years if the material is treated as on specification. The ETFE is flame retardant and due to

the minimal thickness, that accompanies the material the danger for elements falling in case of fire is diminished. The optical impact provided by the membrane is impressive and possessing unique characteristics. (Knaack U. 2009), (www.kochmembranen.com 2017)

NEUES GYMNASIUM BOCHUM, BOCHUM, GERMANY

Construction finished in 2012. The atrium consists of an under-floor heating system and is lit from above by 1000 m² roof doom. The covering is made by triple ETFE layers spanning on very slim steel structure. To be protected from much sun and from glare effect generated on sunny days the outer film of the membrane was printed from inside without reducing the lighting properties of the atrium. The triple layer possesses very good thermal insulation properties which makes it an appropriate material for this specific case.

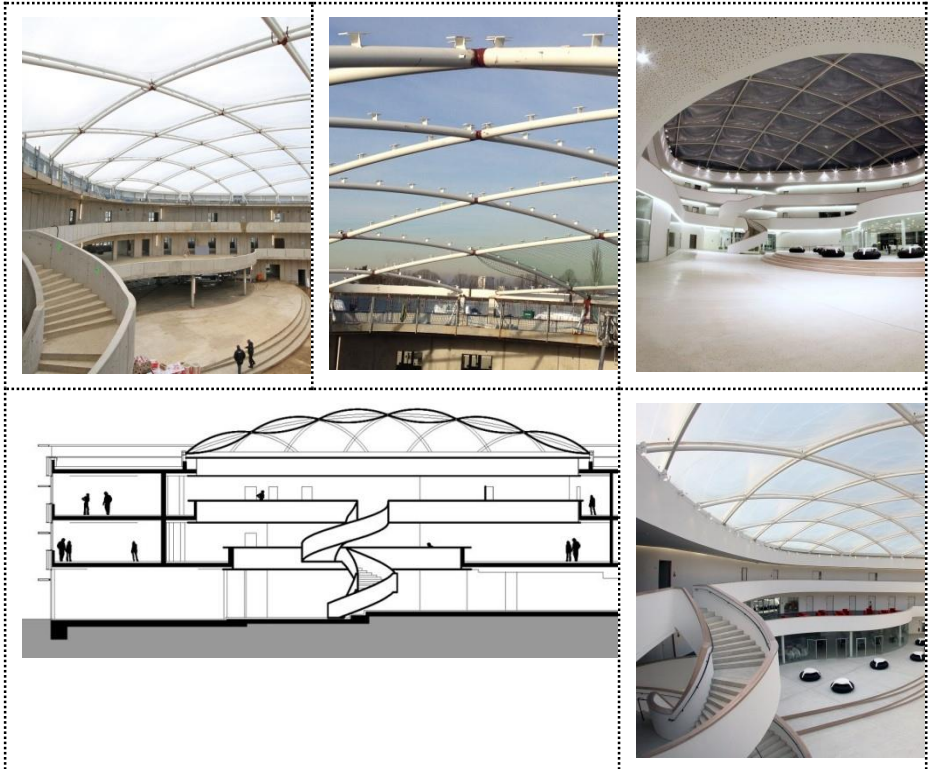


Figure 9: Figures and section of Neues Gymnasium Bochum in Bochum from outside showing the structure of the atrium foils. (www.neues-gymnasium-bochum.de 2017)

MULTIPURPOSE DOME AT FORUM HOTEL IN VERONA

It is a multipurpose dome shaped building at the forum hotel in Verona. It is a building where the state of art of automotive systems is been used for increasing the energy efficiency in the indoor environment. This is one of the first cases of buildings totally covered with ETFE cushions in Italy. The main purpose of the area is for meeting hall or just for relaxation. The winter garden has an ellipsoidal shape and a curved envelope. The structure of the building is composed of concrete foundation where the wood arches are fixed on. Over the wood structure is been fixed the tubular steel profiles where the ETFE membrane is sticked on with the help of aluminum profiles. The distance between the arches is 4.5 m and the maximum span of the arches is 27.2 m and they cover a total area of 625 m2. On the two sides of the ellipse are concentrated the technical room and in the other side the entrance as the two poles of the structure where the steel secondary structure ends up.

The ETFE structure is inflated by a suitable machine that adjusts the pressure into the cushions according to the climatic conditions. The cushions are made of 4 foil layers.

Cushions are also printed differently according to their position in the structure for controlling better the internal climate. The cushions positioned at the top of the structure have a very dense printing concentration and they reduce while they fall aside till the last element that is positioned at the lower base that is perpendicular which is fully transparent. To arrive in this solution engineers and architect have done several experiments for optimizing the printing on the ETFE membrane. On the top of the whole structure are provided openings for natural ventilation as skylights in case of very high temperatures.



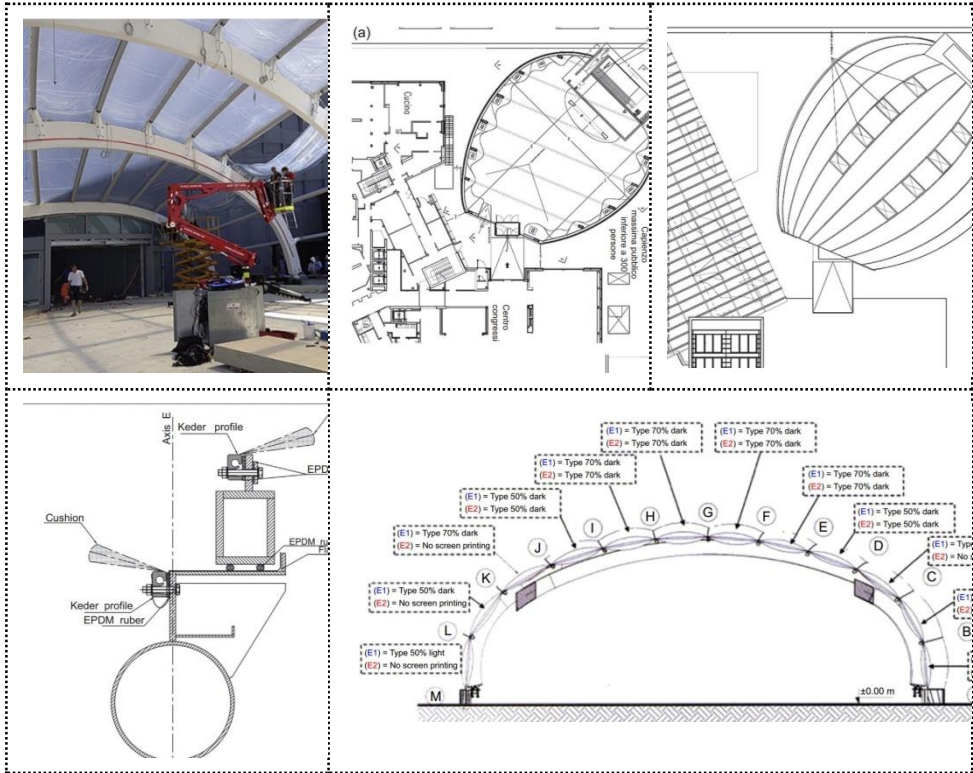


Figure layout 10: Figures and drawings showing the interior, exterior, the application details and structural member positioning. (Lombardi S. 2015)

The represented projects are shown intentionally to highlight the potentials of ETFE foil material that can be managed through several different techniques and structural combinations. Starting from its first implementations in architecture the ETFE foils found space only on greenhouse coverings then spread exponentially in larger projects when the foil inflated cushions were discovered. In the first Dolce Vita Tejo shopping mall the characteristics of ETFE are the managing of the overall covering with ETFE which would require slender supportive structure and the integration of the foils with several treatments for enhancing the comfort parameters of the space and providing a diffused enlightened interior space far from glare effect. In the second case study the characteristics of the foils are tended to be emphasized by their application as the outer layer of the double skin facade where the intermediate space acts as a buffer zone with its own characteristics. In the third case the structural benefits and the controlled light which penetrates through the foil are the issues that characterize remarkably

the project. For the last case the purpose of selecting among others is that it is an overall representative of the application of ETFE on buildings because every part of the structure is covered by the foil and the performance of the material in an enclosure is comprehended thoroughly.

DEFINING THE SPECTRUM OF APPLICABILITY BY RETROSPECTIVE ANALYTICAL APPROACH

Referring on the literature provided for the ETFE foil (single layer and cushion forms or other techniques for assembling together multiple layers), the limitations which convoy the transparent membrane applications restrict the vast implementation of the material for several purposes and in different building with any various character of usage. Its limitations for providing good acoustical insulation and optical clearance in single layer and cushion applied forms, keeps it away from applicability on housing facades, office buildings and any other building character where the visual communication with the outdoor environment is fundamental. Due to these reasons the implementations are seen in large roof coverings and facades where the visual qualities have not been the primary issue for the edifice. In many cases for obtaining the best qualities in the indoor environment and dimming the greenhouse effect that is a characteristic of the materials with high U-value, the integration with other transparent glass which possesses enhanced characteristics from the optical point of view and opaque surfaces is seen as the best solution for many applications for achieving the required performance from the design selections.

Focusing on the implementations already mentioned in the previous paragraphs the ETFE transparent foils find its spectrum of applicability in enclosures where the need for reduction of the supporting materials is very essential such as the shopping malls where the huge covering of the roof top can easily be affordable and it would double the reduction of the cost of supporting structure. This not only would reduce the cost but also would give the sense of freedom to the space escaped from the massive elements that a glass supporting structure would require. By treatments of the foils with different printing techniques and integration of other systems for controlling of thermal, acoustical and lighting comfort, the energy efficiency can be increased hugely. The treatments can afford for the indoor space a diffused lighting distribution which would reduce the glare effect and overheating from direct radiation. Application of the membrane as the outer skin of the multiple layered facades happens rarely by applying a single foil

which would not reduce the optical quality if the interaction of the space with the outside environment is required.

The resistance to severe climate conditions makes the ETFE foil a good choice as an outer skin. Meanwhile the ETFE is been used as an outer envelope for many building typologies the integration of the systems with artificial lighting makes them visually attractive and this kind of systems is been used for promotion purposes related with the activities of the building. In this chapter is merely discussed about the possibilities of application of ETFE foil as an outer envelope for enclosures where the need for thermal, lighting and acoustical comfort is required and referring to these parameters is argued about the performance of the foils and their possibilities to be integrated in the system with their bads and goods and the issues for further improvement are positioned in the forefront. While the target is given on structures that need to perform as sheltering base, the ETFE foil is really a smart choice made by the designer because the performance in terms of thermal, acoustical and lighting comfort is demanded on a reduced scale upon the function of the shelter. Due to this reason the focus is concentrated on the lightness of the structural members, its maintenance and installation of the element and opportunities for applying various striking forms in the building envelope.

As a sum up in the table below is shown the adoptability of applying ETFE foils in various building topologies.

Table 3: U-value of different layer cushions (Lombardi S. 2015)

Adaptability level	Type of building structure
high	Roof top coverings (Atrium covering, transitory spaces between buildings, greenhouses)
	Large spanning structures (terminals, shopping malls, stadia, swimming pool hall)
	Outside sheltering structures
medium	On vertical multi layered facades as the outer layer of the buffering zone
	As material in advertisement facades integrated with lighting devices

low	On facades of housing, offices, and any other building facades where the activities last longer during the day
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DISCUSSION, CONCLUSION AND FUTURE PERSPECTIVE

The spread and extension of ETFE membrane textile usage in architecture is increasing by leaps and bounds. Its 100 % recyclability makes it a very friendly material with the environment. Its cautious footprint helps a lot all the branches of design and engineering that do take part on a project to derive on much effective solutions in terms of the cost but also in the space values that are achieved by the exclusive characteristics demonstrated by ETFE membrane foils.

Exploration for lightly materials especially for high span structures and vast space coverings makes it one of the very first selections of the designers and this concern is shown in prominent examples like gaming stadiums such as Allianz arena in Munich and water cube in Beijing Olympics in 2008. Providing air inflation for the cushions that are comprised of more than one foil is a task to be executed through the usage of active devices such as air pumps, sensor etc, but new systems are being tested and performed which work completely passively by relying on exploration of the tensile strength and elastic modulus of the material.

The material's properties only by focusing in its simple form of application and treatments perform low with respect to thermal and acoustical comfort and display enhanced properties with respect to lighting, nevertheless the integration of the material in its simplest form with other systems and constellations appraise the last by-product to a high rate with special distinctive properties in the market. Recently the applications are concentrated on the rooftops or skylights where no optical performance is required and the direct light is controlled properly by the diffusive parameters of the ETFE foils induced by the air inside the cushions and the treatment (fritting, printing or coloring during production phase of the material). For improving the thermal resistance without preventing the light penetration through the ETFE layers, researches are concentrated on transparent insulation materials that would augment thermal insulation properties.

For understanding the role of the ETFE in the near future the selected projects that have been explained above are intentionally chosen for understanding the spectrum of implementation in the future of this kind of material. So the selection's objective is to display the

potentials of implementation that go beyond the roof topping or skylight for sport hall coverings and integrating them in more delicate design structures such as in double skin facades, main envelope on gathering halls, in spaces where the artificial air conditioning is a crucial issue to be solved such as shopping malls etc, so for purposes that go beyond the provision of shelter against rain and wind. As envelopes for outside structures where no parameters for thermal and acoustical comfort are required ETFE foils have been more extensively incorporated in the structures where their benefits for seeking more slender supportive elements are obviously comprehended.

Application of intelligent systems integrated in the foil structure is very compatible due to the lightweights and flexibility of the polymeric foil. In general requiring half of the elements compared with a normal glazing supportive structure makes the ETFE foil membranes to rise in the forefront of the selection pool for specific cases. As an overall by applying the ETFE transparent foils in relation to the context and in proper systems of the buildings would result in really Green solution due to the enhanced properties of ETFE for particular characteristics.

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ENERGY EFFICIENCY FUNCTION OF INTEGRATED PHOTOVOLTAIC MODULES INTO FAÇADE AT PUBLIC ADMINISTRATION BUILDINGS

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ABSTRACT

Application of integrated photovoltaic panels at existing architecture offers the possibility to design an energy efficient and environmentally friendly building. The aim of this paper is to rebuild the existing public administration buildings in the North-western area of R. North Macedonia. The research analyses the existing public buildings fund in the R. North Macedonia. During the renovation, a double glass structure with integrated photovoltaic systems mounted in the existing structure, taking into account the need for daylight and natural ventilation. When it comes to R. North Macedonia, the integration of photovoltaic systems is not researched enough. Specifically, three public administration buildings in different municipalities of R. North Macedonia are studied. In this paper, the renovation of the existing façade of the buildings made through the installation of a double-glass facade with integrated photovoltaic systems.

The building with a newly designed envelope and its verified parameters designed as a low-energy building represents a modern way of managing existential processes based on energy efficiency and environmental protection. Optimal solution for the energy-efficient building envelope model also represents the new architectural identity of the building.

KEYWORDS: Energy saving, photovoltaic systems, double facades, integration of photovoltaic panels, energy efficiency, low energy building model, environmental protection

INTRODUCTION

The building envelope is the main element responsible for the energy needs of the building. There are many types of envelope that improve the thermal and energy performance of the building. Among the most complex and commonly referred to are double facades.

In this paper will be explored integrated photovoltaic systems as part of a double facade with the function of energy efficiency. The facade implementation includes a vertical suspended facade and a serrated folded facade. According to *Hachem et al., (2012.)* “Geometry of the building and the urban context in which it is located directly influences the availability of solar radiation “.

CONCEPTS OF SOLAR RECONSTRUCTIONS IN MACEDONIA

Although North Macedonia has a small area (25,713 km²), it has a very diverse climate with eight climatic regions. The Energy Status Rulebook lists three climatic zones that vary by days and degrees/days with different temperature values. The data on the three zones are shown in Table 1.

Table 1: Data on climate zones of the Republic of Macedonia (Magyar et al., 2015)

Climate zone:	1	2	3
Average outdoor temperature in January (°C):	-1	-1,1	-2,3
Average outdoor temperature in August (°C):	25,5	24,6	23
Average global horizontal radiation (kWh/m ² y):	1478	1482	1383
Number of sunny days per year (°C d/god.):	1900 - 2400	2401 - 2650	>2650

Climate conditions allow North Macedonia to build buildings known as Plus Energy Buildings. The territory of Macedonia is rich in solar radiation. The estimation of the insolation and reception of solar radiation on differently oriented surfaces shows that the use of

photovoltaic modules for electricity generation in North Macedonia is promising. The optimal tilt of the module is 42° - 57°. According to (Aronova et al., 2015) the building module's power rating estimates that even in the worst period of solar radiation, in December, solar modules will not produce less than 17 kWh of daily electricity consumption.

Double glazed facade

Double glazed facade means technological advancement in architecture. The double-glazed facade is extremely suitable for photovoltaic lighting integration because it consists of a closed surface, and the modules can provide a sun shelter.

Facades with integrated photovoltaic system

Photovoltaic system can be integrated in the building either by means of its deposit (wherein the system is laid on the existing building envelope) or by incorporation (integration), wherein the system forms a part of the building envelope. The photovoltaic system is used as an architectural element and a device for generating energy. Transparent and semi-transparent photovoltaic modules have been developed, and they are used as suspended facades to control the light output along with energy production. Semi-transparent glazing prevents sun rays from entering the building, which reduces the load for cooling and shining. Facades offer a great space for the integration of photovoltaic modules, which, besides generating electricity and looking attractive, they protect the building from the climate conditions. In order to achieve a multi-purpose benefit, systems that are unable to light and shade can be integrated.

Plus, energy buildings

Plus, energy building is defined as follows: "Plus an energy building is a building that produces energy from renewable sources to meet the total annual primary energy needs for heating, cooling, ventilation, lighting, transportation and all electrical appliances used in the facility itself, as shown by Leeb et al. (2011)".

Primary energy demand for energy production includes all factors of primary energy production with upstream processes, transport and distribution of energy sources.

ANALYSIS OF SELECTED BUILDINGS

While selecting a category of buildings in the Republic of North Macedonia, Public Administration buildings will be considered. The research covers three buildings in different municipalities in north-western North Macedonia.

Three buildings which belong to the subcategory Regional and Local Government in the different municipalities of north-western Macedonia have been selected in the category of Public Administration Buildings. The buildings are located in three different municipalities such as Gostivar, Tearce and Zhelino.

Analysis of the existing building of Regional and Local Government located in Gostivar

The building is located in the town of Gostivar, at Braća Ginovski no. 61, and belongs to the earlier historical period of construction. It was built in 1975, the architect of the building is K. Muratovski and so far, there is no renovation project for the building's envelope. The Conservation Center of the City of Gostivar did not protect the Regional and Local Administration of the City of Gostivar, which means that there are no restrictions in terms of changing the design concept of the existing building.



Figure 1: Regional and Local Administration Building located in Gostivar, west façade (photographed: 08.08.2017.)

Analysis of the existing Regional and Local Administration Building located in Tearce Municipality

The Regional and Local Administration Building of the Municipality of Tearce is located in the central part of the Municipality of Tearce. The architect of the building was D. Rafajlovski and was built in 2004. The Tearce Regional and Local Administration Building is not protected by the Tetovo Conservation Center, meaning there are no limitations in terms of changing the design concept of the existing building during the renovation of the envelope foreseen in this paper.



Figure 2: Regional and Local Administration Building located in Tearce, south façade (photographed: 08.08.2017.)

Analysis of the existing Regional and Local Administration Building located in Municipality of Zhelino

Regional and Local Administration Building is located on the territory of the Municipality of Zhelino. The architect of the building was A. Hazari and was built in 2007. During the planned reconstruction of the building there are no limitations on the design and visual concept, because the building is not protected by the Tetovo Conservation Center.



Figure 3: Regional and Local Administration Building located in Zhelino, north façade (photographed: 08.08.2017.)

DETERMINING TYPES FOR SOFWERE ANALYSIS

Two different double-glazed facade systems that will be explored are different at the position of photovoltaic modules in relation to the building envelope. Photovoltaic systems are such as:

- System A: Vertical walls with integrated photovoltaic modules
- System B: Vertically - toothed walls with integrated photovoltaic modules

Determination of types according to system A

During the integration of photovoltaic modules into vertical walls (system A) it is possible to determine some variations regard to the building category. Different categories of objects will be considered as types:

- Tip A1: Vertical wall with integrated photovoltaic modules at Regional and Local Administration Building located in Gostivar



Figure 4: Appearance of the west facade of Regional and Local Administration Building located in Gostivar: provided (partly coated) double facade panels with integrated photovoltaic system A

- Type A2: Vertical wall with integrated photovoltaic modules at, Regional and Local Administration Building located in Tearce;



Figure 5: Appearance of the southern façade of the Regional and Local Administration Building located in Tearce: provided (partially coated) double facade with integrated photovoltaic panels of system A

- Type A3: Vertical wall with Integrated photovoltaic modules at Regional and Local Administration Building located in Zhelino



Figure 6: Appearance of the North Facade of the Regional and Local Administration Building located in Zhelino: a partially coated double facade with integrated photovoltaic panels of system A

Determination of types according to system B

Depending on the category of buildings, while integrating photovoltaic modules into vertically toothed walls, variations are the following types:

- Type B1: Vertically toothed walls with integrated photovoltaic modules at Regional and Local Administration Building located in Gostivar



Figure 7: Appearance of the west façade of Regional and Local Administration Building located in Gostivar: provided (partly coated) double facade panels with integrated photovoltaic system B

- Type B2: Vertically toothed walls with integrated photovoltaic modules at Regional and Local Administration Building located in Tearce;



Figure 8: Appearance of the southern façade of the Regional and Local Administration Building located in Tearce: provided (partially coated) double facade with integrated photovoltaic panels of system B

- Type B3: Vertically toothed walls with integrated photovoltaic modules at Regional and Local Administration Building located in Zhelino



Figure 9: Appearance of the North Facade of the Regional and Local Administration Building located in Zhelino: a partially coated double facade with integrated photovoltaic panels of system B

DATA ANALYSIS AND RESULTS

The method of interviewing the building user enabled the calculation of the total needs of the electricity user.

Computer Software PVSYST is a software for analysis, formatting, dimensioning and data analysis of photovoltaic systems. The PVSYST 6.4.3 program provides a tabular representation of the data obtained for a one-year period.

Results at Regional and Local Administration Building, Gostivar

The values shown in Figure 10 clearly show the ratio of output and electricity required for different types of newly designed double facades at Regional and Local Administration Building, Gostivar the amount of electricity produced meets the needs of the user. The energy surplus is 55.60 – 73.80 MWh.

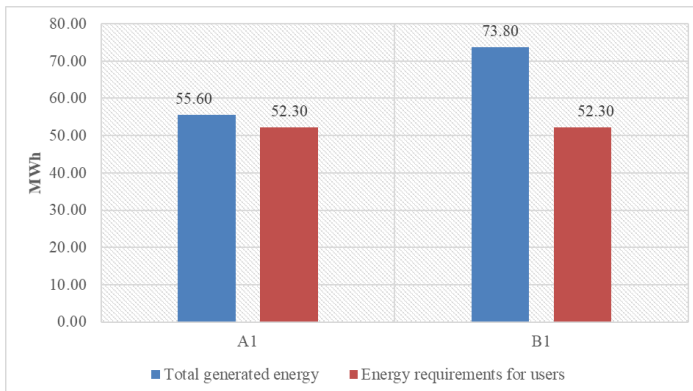


Figure 10: Comparison of the value of produced and consumed electricity at Regional and Local Administration Building, Gostivar

Results at Regional and Local Administration Building located in Tearce

Figure 11 shows the electricity values produced according to the needs of Regional and Local Administration Building located in Tearce. For type A2 there is not a quantity that meets the needs of the user. The total generated energy does not meet the requirements for users.

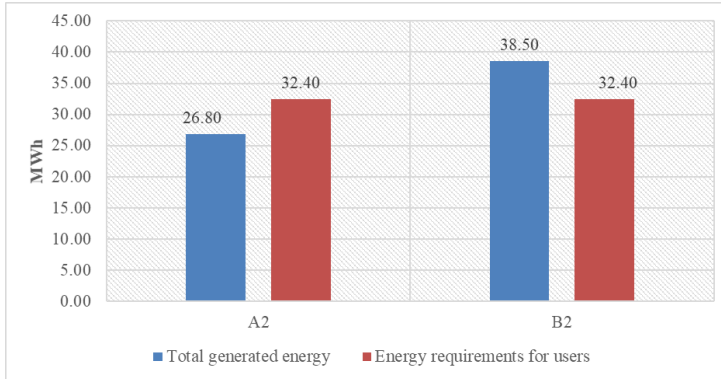


Figure 11: Comparison of the value produced and consumed energy at Regional and Local Administration Building located in Tearce

Results at Regional and Local Administration Building located in Zhelino

The value of electricity produced in accordance with the needs of the Local Administration Building located in Zhelino are shown in Figure 12. Type A3 does not meet the needs of users.

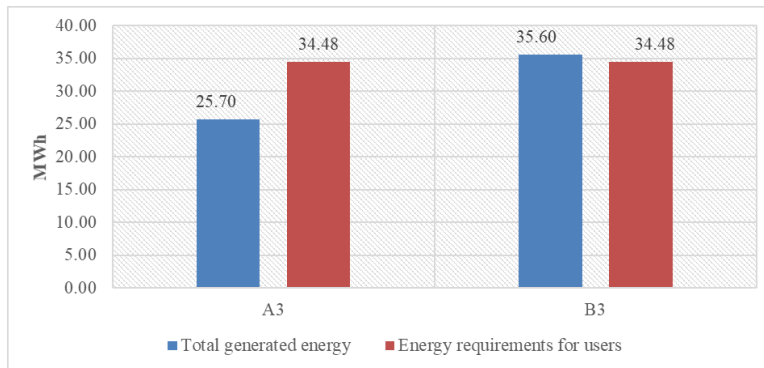


Figure 12: Comparison of the value produced and consumed energy at Regional and Local Administration Building located in Zhelino

CONCLUSION

The results obtained with graphs give a clear insight into the optimal double glazing system, vertically toothed, with integrated photovoltaic modules, a B system. This type of envelope in further consideration is the optimal solution for a low-energy building model that will serve Administration buildings that have high energy requirements when renovating the building envelope. According to

software PVSYST total assessment of the investment of a B system integrated above the entire envelope reaches a value of 222.700 EUR at RLA Zhelino, 251.100 EUR at RLA Tearce and 445.808 EUR at RLA Gostivar. The optimum solution for the model of a more energy-efficient building can be applied to many buildings but must be subjected to the renovation of the envelope according to conventional energy recovery methods. Created an optimal solution for the energy-efficient building envelope model in the form of vertically toothed walls with integrated non-transparent and semi-transparent photovoltaic modules represents the redesign of the envelope not only for energy saving but also for architectural attitude. In terms of the transformation of existing identity, the new form also represents the new architectural identity of the building.

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RECYCLING OF BRICK DUST/GROUND MORTAR MIXTURES AS PARTIAL REPLACEMENT OF PORTLAND CEMENT

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ABSTRACT

This study investigates the effect of brick dust and ground mortar mixtures as partial replacement of Portland cement in mortar production. Masonry is one of the most important and most widespread building methods in our country. Different advantages such as: low cost, versatility and resistance to atmospheric conditions has made masonry so widespread and a technique of choice. Despite the resistance to different atmospheric conditions and other physical and chemical factors, there comes a time that masonry is amortized or loses the state of its initial stability. For that reason, the reuse of these deteriorated materials has increased the interest for further research studies. Therefore, the aim of this research is to recycle masonry materials and evaluate the possibility of reusing them as components in composite cement in mortar production. For that reason, seven series of mortars with different replacement levels of brick dust and ground mortar were produced. The water to cement ration was kept constant at 0.5 w/c for all the mixtures and limestone sand was used as aggregate. The samples were tested for water absorption, flexural and compressive strength. The test results showed that ground masonry can be effectively used as cement substitute in the production of mortar mixtures. The brick dust has a greater impact than mortar dust in increasing the compressive strength values. But when combined in controlled replacement levels higher strength result compared with the case when these ingredients are used separately can be achieved.

KEYWORDS: Recycle, cement, mortar, brick dust

INTRODUCTION

Masonry has been one of the most widely used construction technique in Albania for the construction of low rise and midrise buildings. During the Communist period up to 1990, masonry structures were built using typical blueprints. Masonry was used both for residential and public buildings as a low-cost construction method. Today these buildings are still in use and mainly serve for residential purposes (Guri, 2016).

Albania is one of countries most prone to seismic action in the Balkans. The recent destructive earthquakes in neighbouring countries (Italy, 2009, Greece and Turkey-2008-1999) have shown that masonry buildings have suffered the maximum damage and are responsible for maximum losses of life. Due to reasons such as seniority, human-made interventions, and improper design code of that time, these types of buildings are endangered by earthquakes.

On the other hand, the construction sector is one of the greatest generators of inert wastes in Europe, approximately 900 million tons per year (Torres-Gómez, 2016). An important part of these wastes is masonry which in some countries is still underutilized. Every year 3000 Mt (metric ton) of waste are produced in the European Union, of which 90 million are considered hazardous. The construction industry generates in the EU around 900 million tons per year of wastes. Therefore, this waste flow represents around 25% - 30% of all wastes produced. CDW (construction and demolition waste) have a very heterogeneous composition. The most important fraction corresponds to inert material, i.e. between 40% and 85% of the overall waste volume discounting excavation soils. The main sources of inert material are concrete and ceramic materials. Researchers reports that the amount of "concrete, masonry and mortar" in inert material, accounts for 58% and 67% in Portugal and Norway, 85% in Italy and Spain, respectively (Torres-Gómez, 2016). The amount of waste from the construction industry used as filling material or illegally dumped in vacant lots has been increasing over time. This has led to an increasing lack of landfill areas, useful lands becoming dumping yards and highly increased dumping costs at landfill sites. So, handling wastes has become one of the most important environmental issues in developed countries. In 2010, around 75% of all CDW (construction and demolition waste) produced in the EU were dumped. However, reuse ratios over 80% have already been reached by countries such as the Netherlands, Denmark and Germany. The Community Directive 2008/98/EC establishes that the EU state members must take the necessary

measures to reach until 2020 a minimum of reuse ratio 70% (in weight) of the CDW produced (Bravo, 2015). Currently, in Spain, the fine fraction obtained from the recycling process of masonry waste is underutilized, and in most cases, it is deposited in landfill or stored in recycling plants (Torres-Gómez, 2016).

On the other hand, in Mediterranean countries, the main components of masonry waste are ceramic bricks and mortar, and roughly estimating the ratio of brick to mortar for a portion of masonry is 1.5/1 by weight.

For that reason, research on development of different methodologies to recycle these types of wastes has become a necessity.

MATERIALS AND METHODS

Preparation of the Specimen Mixtures

Seven mortar mixtures of different combinations of (PC Portland Cement/BD Brick Dust/MD Mortar Dust), 1350 sand and 0.5 water to binder ratio were produced. The materials used for the preparation of the specimens were weighed separately on an accuracy scale. The ingredients used for the mixture are shown in table 1.

Table 1: Preparation of specimens

	(MD/BD/PC)	sand (g)	PC (g)	water (g)	BD (g)	MD (g)
1	450/0/0	1350	400	225	0	0
2	400/25/25	1350	400	225	25	25
3	375/75/0	1350	375	225	75	0
4	375/0/75	1350	375	225	0	75
5	350/50/50	1350	350	225	50	50
6	325/25/100	1350	325	225	25	100
7	325/100/25	1350	325	225	100	25

Casting of the Specimens

Every mortar mixture is mixed in the Hobart mixer according to EN 196-1. The specimens were cast into prismatic moulds of 40 x 40x 160 mm dimensions. 24 hours after casting, the specimens are

removed from their moulds and cured for a period of 3, 7 and 28 days in water at 21±1 °C.

Determination of the Water Absorption

The sample were weighted in saturated surface dry conditions (SSD) and completely dry (CD) in the oven at 105°C for the next 24 hours. After that, the specimens were taken out of the oven. They stayed in the room temperature until they cooled up. The water absorption followed the equation, where:

$$WA (\%) = ((SSD-CD)/(CD)) * 100 (1)$$

WA: Water absorption (%)

CD: Mass of the completely dried specimen (g)

SSD: Mass of the saturated surface dried specimen (g)

Determination of the Flexural and Compressive Strength

The flexural test of the specimens requires a performance according to the (EN 1015–11) Standard. The specimens were strength tested for 3, 7 and 28 days under three-point loading and the span used among in order to support is 100 mm. These tests are developed in two fineness levels of the brick dust and mortar dust such as 0.250mm and 0.125mm. Whereas the compressive strength test was performed based on (EN 196-1). The loading area is 40 x 40 mm.

RESULTS AND DISCUSSION

Water absorption results

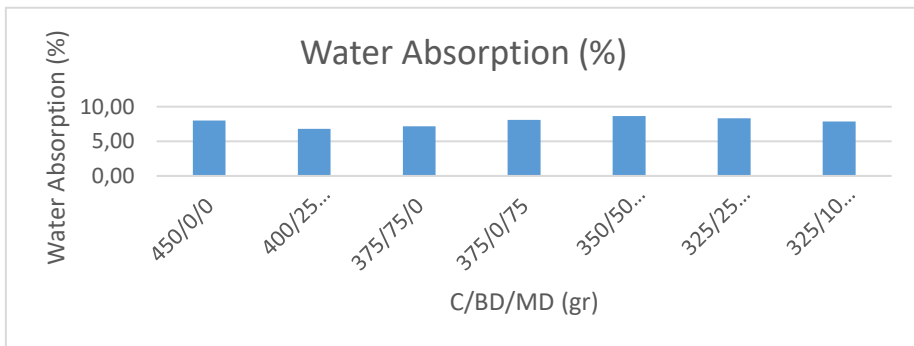


Figure 1: Water Absorption

Figure 1 shows the Water absorption values of the mortar series. It can be noticed that the highest percentage of water absorption is found in No. 5 (350/50/50). The water absorption values vary between 6.8% and 8.6%. this graph it can be concluded that the ground mortar absorbs more water than brick dust. While the lowest percentage is found in No. 2 (400/25/25) where the amount of additional materials is at the lowest rate.

Flexural Strength Results

The Flexural Strength test was performed on 3,7 and 28-day with two different Brick Dust and Mortar Dust fractions. The values were compared with the control mixture. Two different fractions were used to study the change of results and to reduce the processing cost of Brick Dust and Mortar Dust. In the graph we have seen both types of materials to conclude and compare the change of the values achieved.

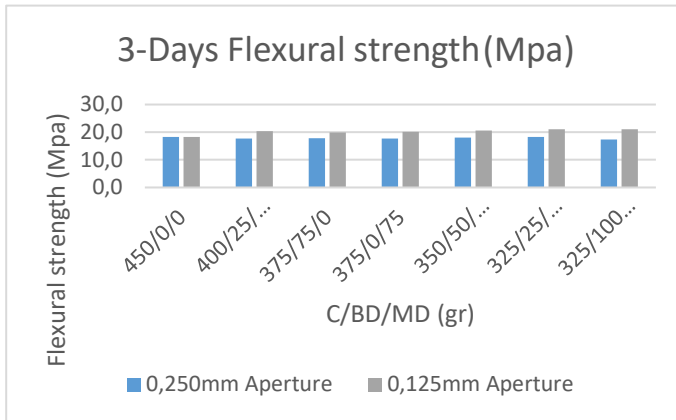


Figure 2: 3-Days Flexural Strength

Noticed that the examples used with the 0.125mm sieve opening have a Flexural Strength increase compared to the examples used with the 0.250mm opening. Concerning cement mortar, there is an increase in Flexural Strength of other compounds when we used the 0.125 mm aperture fraction while the maximum value in relation to cement mortar is 3.3 MPa larger. The highest maximum values achieved in the 3-day tests are examples 5 (350/50/50) and 6 (325/25/100).

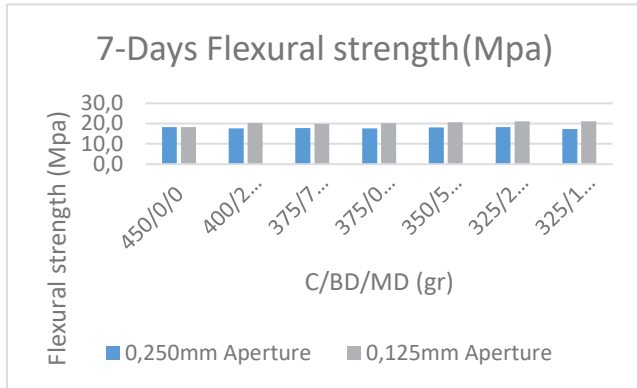


Figure 3: 7- Days Flexural Strength

Even for the 7-day tests, the same difference is observed from the fraction of the material used. The increase of Flexural Strength appears even in the 7 days- tests, where the finest material makes the difference. The highest values are reached in series 7 (325/100/25) and 6 (325/25/100) where there is a difference of 2.8 MPa compared to cement mortar.

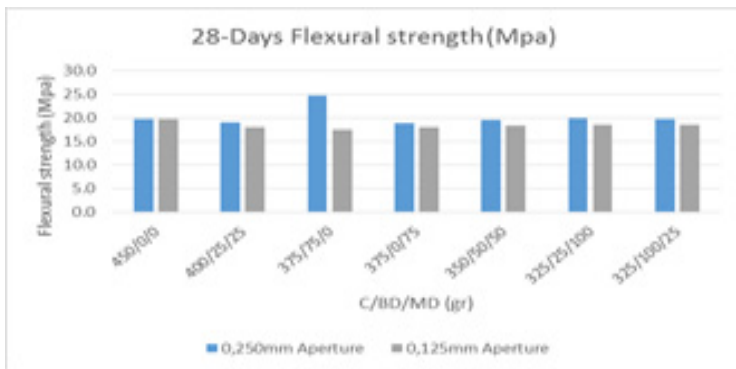


Figure 4: 28- Days Flexural Strength

Unlike the 3- and 7-day results, the material fraction does not show an increase in the Flexural Strength, meanwhile there is a decrease also of Flexural Strength compared to the control specimen.

Compressive Strength Results

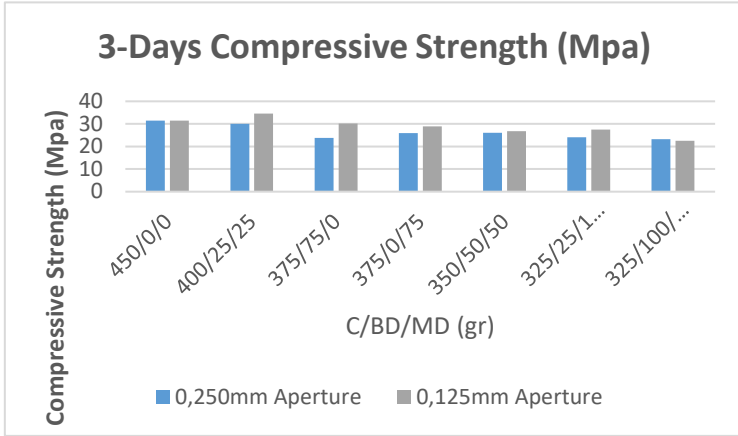


Figure 5: Results of 3-day Compressive Strength

The 3-day test shows that the Compression Strength values of the composite mixes, are lower than the value of cement mortar itself. Only series 2 (400/25/25) with a 0.125 mm fraction shows an increase of 3.2 MPa. While the lowest value in relation to the cement mortar is that of the series 7 (325/100/25) with a difference of 8.87 MPa.

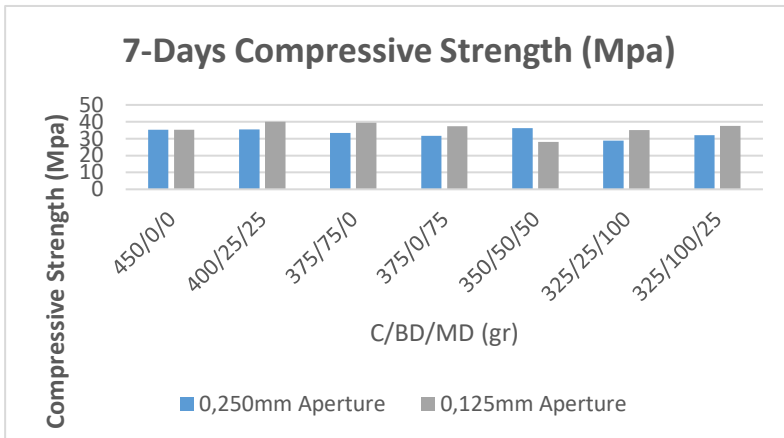


Figure 6: Results of 7-day Compressive Strength

The 7-day test values have a significant increase. Some of them show higher values than the ones of cement mortar. But this increase occurred in the 0.125 mm fraction and is noticed in all the samples except for series 5 (350/50/50) where there is a 7.2 MPa decrease. The highest value is again series 2 (400/25/25) where this time, it reaches 4.8 MPa higher than cement mortar.

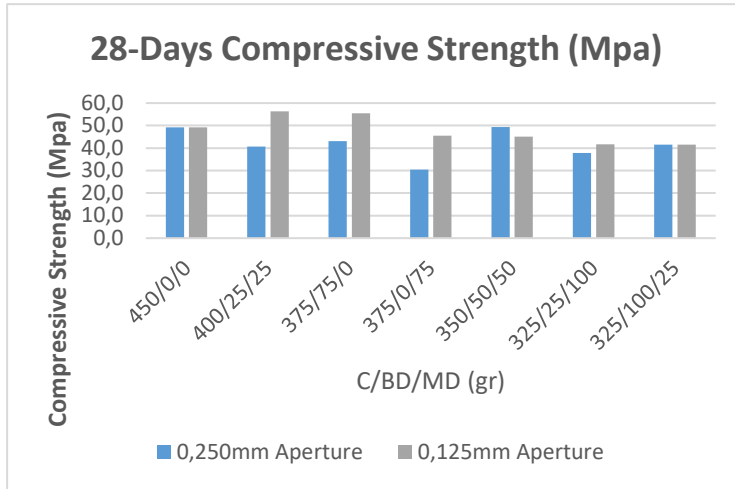


Figure 7: Results of 28-day Compressive Strength

On 28-day compressive test results there is an increase of series 2 (400/25/25) and series 3 (375/75/0) of 0.125 mm fraction. Series 2 and series 2 values are 7.1 MPa and 6.3 MPa respectively higher than the values of cement mortar. While another series, that is similar to cement mortar is series 5 (350/50/50). These results show that Brick Dust increases the value of Compression Strength. While in cases where the amount of Mortar Dust is greater in relation to Brick Dust, we do not have any increase in value compared to cement mortar.

CONCLUSION

In this experimental study the partial replacement of brick and mortar dust in cement mortar has been analysed.

From the conducted test of the water absorption, it is observed that if used in controlled amounts the use of these waste materials can improve the water absorption values of the mortars.

The particle size of the supplementary material has an important effect on the increase of the flexural strength result during the 3- and 7- days period, but in the 28 days test there is a decrease in these values.

The results show that Brick Dust increases the value of Compression Strength. While in cases where the amount of Mortar Dust is greater in relation to Brick Dust, we do not have any increase in value compared to cement mortar.

Based on these results, it is concluded that masonry can be used as cement substitute in mortar and also give high and acceptable results. In these mixtures the brick dust has a greater impact than mortar dust in increasing the compressive strength values. But when combined in controlled quantities higher result can be achieved.

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SIMULATION-ASSISTED DOUBLE SKIN FAÇADE ANALYSIS OF AN OFFICE BUILDING IN TIRANA, ALBANIA

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ABSTRACT

Double-skin façades are becoming more required compared to conventional façade systems, due to the introduction of new materials, building technology and especially due to economic viability in a long-term expectation. DSF systems can be highly transparent and energy efficient if designed properly. On the other hand, still as a relatively new system, data and research about energy performance and occupant comfort of double skin facades is limited. A well-designed facade envelope of an office building is considered to reduce the energy consumption of the building and generate comfort, healthy and productive work environment for occupants. The present study analyses indoor environment quality of office buildings in Tirana and investigates the appliance of DSF in the existing buildings. Computer simulations with Rhino (Modeling Software) and DIVA 4 Rhino (Simulation software) were used to computationally simulate and analyse the daylight and thermal performance in existing and retrofitting scenario. Results showed that the use of DSF considerably reduces the glare and energy consumption in the office buildings.

KEYWORDS: Double-skin facades, Daylight, Energy Consumption, DIVA 4, Thermal Comfort

INTRODUCTION

The external building envelope is a critical parameter of energy design, determining the level of protection against outdoor conditions and also controlling the indoor environment. The trend of the DSF is mainly driven by the aesthetic result of a transparent and light envelope; the creation of a buffer zone for improving acoustics in noise polluted areas; the reduction of the occupational energy use of the building through reducing the heating and the cooling demand during winter and summer and through reducing the artificial light utilizing natural day lighting as much as possible, while avoiding glare problems. According Koinakis (2007), DFS systems could be implemented during the refurbishment without affecting significantly the operation of the building. Compagno (1999) classifies façade typologies according to the number of glazing layers and location of the shading devices. Boake and Harrison (2001) mentions several properties such as natural ventilation, daylighting, transparency and energy efficiency that should be optimized in the office façades design. Saelens (2001) defines the multiple skin facade as an envelope structure, which consists of two transparent vertical planar elements separated by a cavity. Salens (2002) distinguished three key elements: the envelope construction, the transparency and the cavity airflow. Arons (2000) summarizes the complexity of the system and extracted it under ten parameters. Whereas Li (2001) classifies the elements for the configuration of the DSF systems that affect the overall performance. The integration of façade systems implies a design that balances a wide range of performance parameters, which responds to energy concerns (Stec et al. 2005).

METHODOLOGY

Case study Description

European Trade Centre (ETC) office, a high-rise multifunctional or multipurpose building, is selected for study analysis. The western façade is oriented toward the main street, and totally exposed to the city view. Offices ($9000m^2$) are placed in the western part of the building. The façade is fully glazed and there are limited shading devices, positioned along the volume perimeter with a width of 80 cm. The 16-storey building (Figure 1) represents an effort to develop a new technology façade and the indoor layout. The façade skin offers visible separation of different volume, which hosts different occupancy uses commercial, residential and office space. The west wing consists of the

volume (*N-S and W-E orientation*) containing mainly offices as shown in the plan in Figure 2, while downstairs in the first floors it is situated the shopping mall area. The shopping mall, ($8000m^2$) is placed on the ground till the third floor. The outside façade of the first storeys is designed in grey ceramic tiles. This volume is connected with the residential block, which compose the greater volume of the overall complex building. Based on their position, dimension and configuration, the shading system can be considered as a decoration element in terms of aesthetics rather than shading devices in terms of functionality to protecting against sun exposure. The building is equipped with heating ventilation and air-conditioning system.



Figure 1: ETC exterior

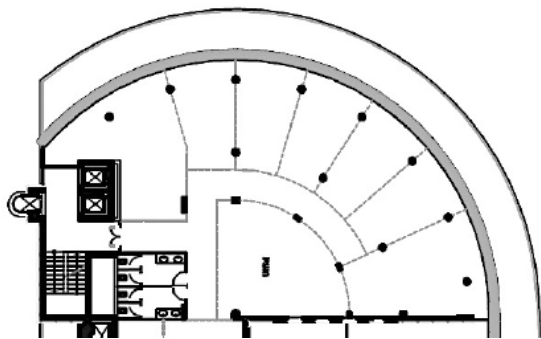


Figure 2: Office plan ETC

Questionnaires

In order to have a real impact of indoor workplace environment, despite physical measurements and field observation, the study involves direct questionnaires. The participants were asked to evaluate their working environment using the perceptual evaluation and preferential judgment. Each employee had to estimate the interior air, thermal comfort, lighting and the overall comfort in the indoor environment. Another section includes question about the influence of the physical environment (*daylighting, comfort level, temperature*) on the employee's productivity to find out if their efficiency is connected to the surrounding workplace. The last section asks for information about any use from occupants of thermal environment control means such as fans, devices used, daily working hours and some demographic data.

Simulations

DIVA simulation tool is used to evaluate the current and proposed IQE. DIVA is an environmental analysis plugin for Rhinoceros 3D modelling program and Grasshopper plug-in. DIVA-for-Rhino is a highly optimized daylighting and energy modelling plug-in for the Rhinoceros modeller. DIVA performs a daylight analysis integrating Radiance and DAYSIM (Reinhart et. al. 2011). Radiance and Daysim engine can do both dynamic and static daylight analysis. For glare study, DIVA with the use of Evalglare can generate point in time and annual glare study. DIVA-for-Rhino allows users to carry out a several building performance evaluations and urban landscapes including Radiation Maps, Photorealistic Renderings, Climate-Based Daylighting Metrics, Annual and Individual Time Step Glare Analysis, LEED and CHPS Daylighting Compliance, and Single Thermal Zone Energy and Load Calculations (diva4rhino.com, 2016). DIVA-for-Rhino operating system is shown in Figure 3. ETC was chosen for simulation in the existing conditions with one curtain wall layer and no shadings and after the refurbishment suggestion with DSF. Daylight analysis and Thermal Analysis are carried with DIVA 4 Rhino. The façade proposal for the refurbishment of the existing building includes: the existing inside layer, an additional curtain wall layer in at least 80 cm distance, ventilation flops louvers at the top of the building which are adjustable (Figure 4), movable aluminium sheets at the bottom of the building (Figure 5) to let fresh air in, and sunscreen shutters as shading devices

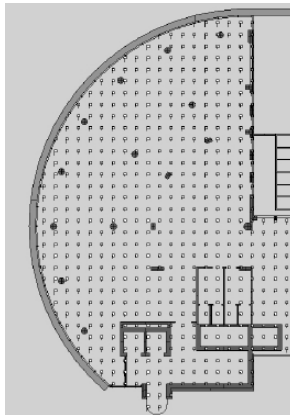


Figure 3: ETC plan showing DIVA-Created Nodes

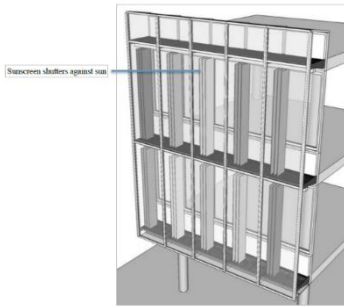


Figure 4: DSF refurbishment model - Air exhaust DS

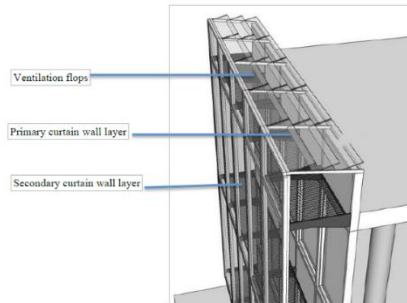


Figure 5: SF refurbishment model (envelope layers), top part of the façade

RESULTS

Questionnaires

According to the questionnaires (Figure 6) employees are satisfied with the lighting system. Most of them admit that lighting affects their concentration during the work time. They have plenty of natural lighting, and this is understandable given the fact that the building has a fully glazed façade. On the other hand, they are not protected from sunlight exposure or glare occurrence. This result explains the non-effectiveness of the ‘buildings’ shading devices. Meanwhile overheat in summer season is not avoided, despite the use of air conditioning and ventilation system.

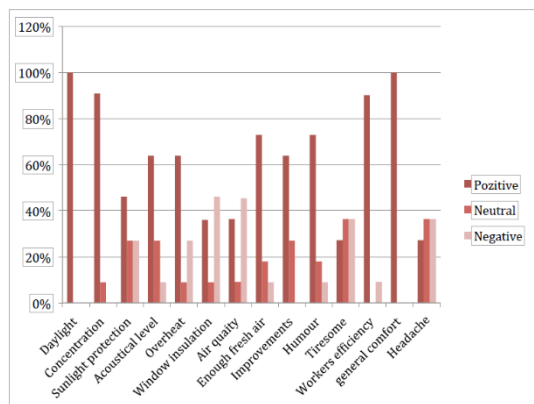


Figure 6: Results of indoor workplace performance based on questionnaires of ETC

Daylight Simulations

Based on the simulation held in the building without shading devices (Figure 7) in the working place, the graph shows the presence of glare occurrence. The case of fully glazed façade of single skin without shadings allows sun to penetrate through the windows and create visual discomforts to the occupants. Most of the glare occurrence is the working panes close to the façade.

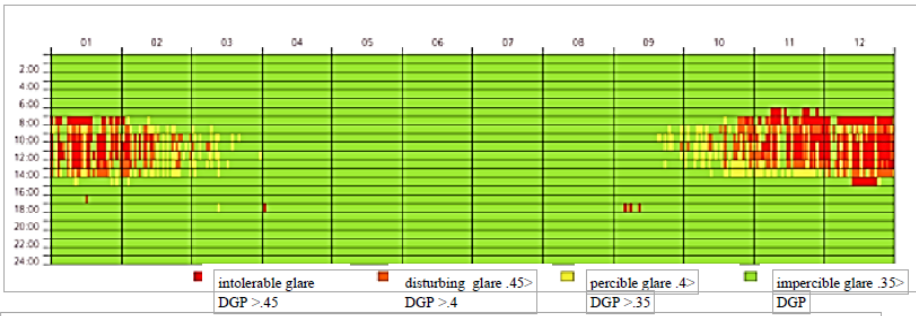


Figure 7: Output from an annual glare calculation with no dynamic shading devices.

After the daylighting simulation with static shading devices (Figure 8), the proposed model reduces glare occurrence by 80% during the sunny hours by adjusting its sunscreen shutters. During the winter, the sunscreen angle is 90° to the façade to let the radiation enter through the daylight and heat. While with the more detailed façade (Figure 9) it is possible to almost disappear the glare occurrence and improves the visual comfort of the users.

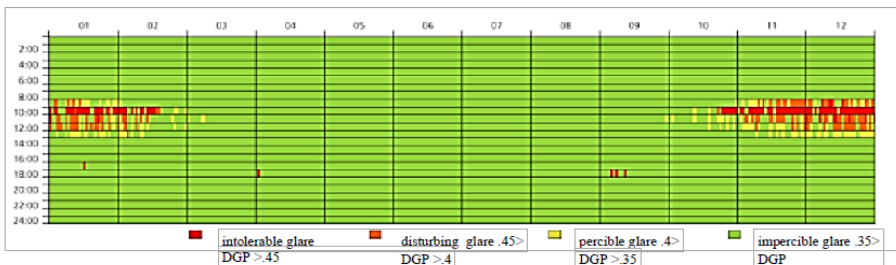


Figure 8: Annual Glare simulation of DSF with static shadings

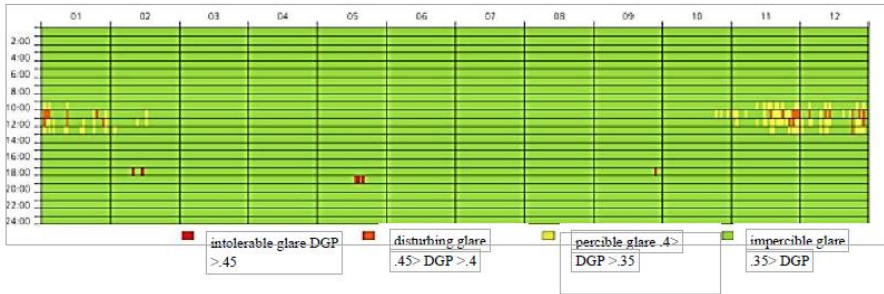


Figure 9: Annual Glare simulation of DSF with dynamic shadings

Thermal Simulation

In the case of the scenario of Single Skin Façade (Figure 10), the building consumes in total 39100 kWh (115 kWh/m²). Heating problems are reflected also in the energy consumption. More cooling loads are needed to ventilate the working place during midday hours. The lack of shading devices increases the energy consumption higher and overheat during the working hours.

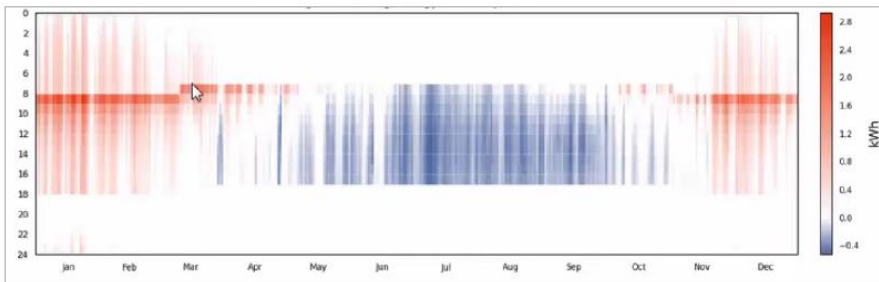


Figure 10: Hourly heating and cooling energy consumption (KWh/m²) of exiting façade system

The thermal simulation on Double-Skin Façade (Figure 12) resulted positive as well due to the successful natural ventilation it presents: the fresh that air enters from the bottom serves to cool the space and the hot air exhausts from the top louvers.

Meanwhile during summer, the air circulates inside the building and heats the space. This façade saves 30% of the energy. This is also due to the second layer of glazing and the cavity between two curtain walls who decreases the energy loss between outdoor and indoor environment. Comparing the graphs, it results that the double skin façade creates a better insulation against the heating exposure during the afternoon working hours, not allowing transmitting it solar radiation. This means that the cooling energy consumption is diminished. The overall energy consumption including heating and cooling, interior lighting and heat transfer is 27370 KWh.

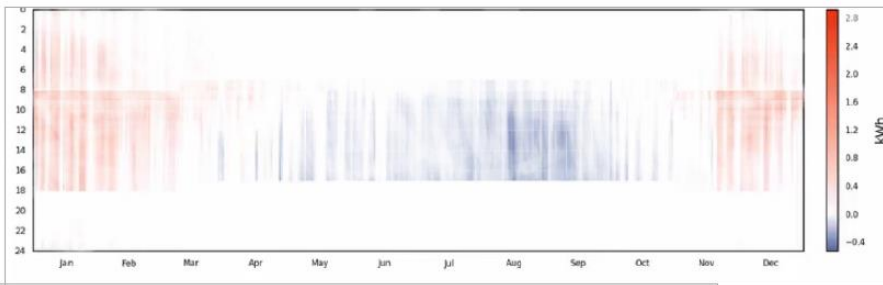


Figure 11: Hourly heating and cooling energy consumption (KWh/m²) of Double Skin Facade

CONCLUSION

This study investigated the indoor environmental quality of an office buildings in Tirana. A combination of data collection tools, questionnaires, interviews and computational simulation was used to evaluate the existing façade of the office building and DSF system optimization. Based on the questionnaire results employees tend to prefer a fully glazed façade. On the other hand, the lack of shading devices occurs the glare. To improve the indoor environment quality, a refurbishment solution via DSF system is proposed. Results showed high improvement in terms of daylight control and energy consumption. The analysis showed that DSF is a quite promising solution when it is combined with the appropriate designed shading devices to prevent solar heat gain and provide natural ventilation while decreasing the overall energy consumption for heating and cooling throughout the year. Nevertheless, the design should be specific for the type of building its layout, orientation and envelope.

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SUSTAINABLE SYSTEMS AND THERMAL COMFORT EVALUATION IN TRADITIONAL HOUSING

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ABSTRACT

Sustainable system strategies are an important characteristic of the traditional architecture defined by the local micro-climate. Gjirokastra is an important historic city and represents a successful example of vernacular architecture, with the usage of local ecologic materials, climate design and regional tradition design. The present paper explores the thermal comfort and sustainable system strategies in traditional housing in the city of Gjirokastra. The study analysis three housing typologies i) Zekate house ii) Kikino Hose and iii) Fico House. The three case studies are important examples of traditional architecture, as the material constructions are local, the climatic design strategies are used. Different strategies are explored in summer and winter period. In addition, the study creates a background knowledge about the vernacular dwellings in the city and the solar passive strategies used. The study aims to orientate the modern construction towards climate responsive design, following the strategies used in the existing vernacular dwellings.

KEYWORDS: Climate responsive design strategies, housing, Gjirokastra, traditional architecture

INTRODUCTION

Traditional housing reveals the combination of local climate conditions, locally available materials, simple construction techniques, living style, traditions and socioeconomic conditions of the region. (Halicioğlu 2012). It is an important example of adaptation of construction to the environment and to the place (Alba et al. 2013). The natural and human environmental adaptation is essential for preservation and traditional architecture used for solutions of adaptation to the new functional and technical standards. The traditional housing takes maximum advantage of the environment's possibilities with the optimal economy use (Yung, E. 2012). Building materials are available and taken near the construction site and defined by the natural and human characteristics of the zone, creating a regional type of architecture. Vernacular architecture varies widely with the world's vast spectrum of climate, terrain and culture (Zhai & Previtali, 2009) while representing good examples of optimal use of natural light and other renewable resources. Recent studies on vernacular housing have shown that bioclimatism is an integral part of vernacular architecture and an important parameter towards achieving sustainability of modern architecture (Dhar et al.2013). Several studies have revealed the good thermal performance of vernacular buildings in the Mediterranean climate context using both qualitative analysis and quantitative measurements for building performance, emphasizing the benefits of using local materials (Fernandes et al. 2014).

METHODOLOGY

Case Study Selection

The three houses chosen for the study are i) The Zekate house in Palorto quarter ii) Fico house located in Palorto, iii) Kikino which is in the Manalat quarter. The three case studies are important examples of traditional architecture, as the material constructions are local, the climatic design strategies are used (see Table 1). The dwellings are located in three different parts of the city in a distance from each other, which represents a specific house plan organization adapting to the site of the location (Figure 1). The Zekate is situated in Palorto quarter and being isolated from other buildings in a hilly landscape following the typography. Kikino is located in the Manalat quarter, in the suburban, with many trees around. Fico house is positioned in an urban area with entrance directly from the street. The Zekate and Fico house are

representatives of two-sided variant, with two rectangular blocks connected by a central block. The Kikino is a one-side variant, with two rectangular blocks connected angularly. The three case studies are declared monuments of the first category.

Table 1: General information of the case studies chosen

House type	Location	Year	Historic period	Architectural style	Variant	Monument category
Zekate House	Palorto	1811-1812	Ali Pasha Rule (1811-1822)	Ottoman style	Two-sided	1 st category
Kikino House	Manalat	1825	The end of Empire (1822-1912)	Ottoman style	One-side	1 st category
Fico House	Palorto	1902	The end of Empire (1822-1912)	Barocco-rococo	Two-sided	1 st category

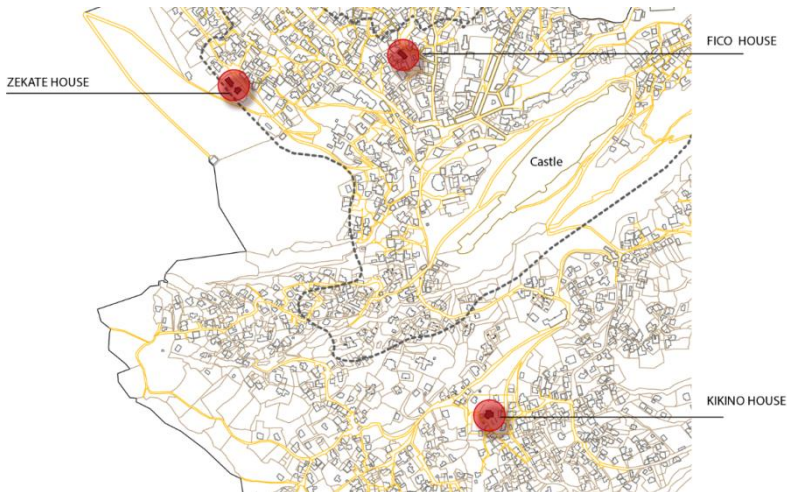


Figure 1: Map of the location of the case studies

Description of Selected Sites

Case Study A - Zekate House

The Zekate is a typical fortified tower-with a central block that connects two sided towers built at varying heights. The design of the house follows the steep gradient of the hills, being oriented towards north-east (Figure 2). The main entrance to the house is through the

main courtyard by stairs. The house is surrounded by three paved stone black courtyards which are connected by gates. The second courtyard is entered through a one –wing gate and encircles the main house. The third is found on the northern end of the central yard and continues into the house garden. The roads to the site were narrow, steep and winding. The yards of the Gjirokastra houses are surrounded by thick stone walls which define the property line.

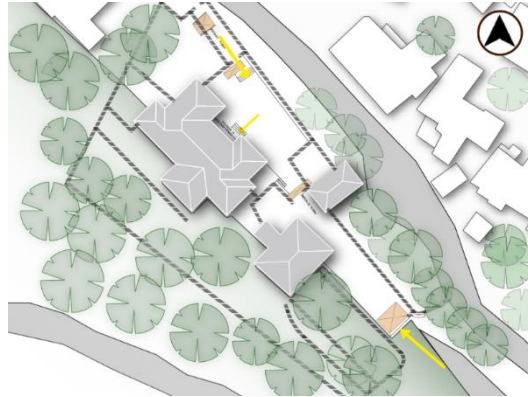


Figure 2: Landscape plan of Zekate House

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The Zekate has a small footprint and is extended in verticality, following the hill topography. The house is composed of three floors. The central staircase goes upwards through the building. The first floor has two rooms that were used as living quarters for branches of the family, while the third floor has a grand reception room and two other smaller rooms.



Figure 3: View of the main façade of the Zekate house, the main entrance to the house and the cobblestone paved courtyard



Figure 4: The wooden entrance gate of Zekate

In the ground floor, the front door indicates to a lower hallway and in the right of the door is located the cistern head for drawing water. The cistern is fed by rainwater via a system of gutters around the roof. On the left is a large vaulted storeroom which would be used to store militing facilities (Figure 5). In the first Floor, the main space is the lower divan, or chamber for receiving guests. The other rooms are used mostly by the women for household and the cooking facilities. A door leads to a floor storage area for food, which is kept cool by the water cistern below (Figure 6). The second floor is composed of two main rooms leading off from the central divan. The winter rooms are positioned in the stone section of the tower, each containing a small toilette. These rooms used fireplaces for heating (Figure 7). The third floor includes a timber gallery occupied by the head of the family and his main guest to sit and enjoy. The walls are wooden lath covered with a special plaster compound produced by aged lime, goat hair, egg whites, and fine sand, mixed with straw. The mixture dries to a flexible, fabric-like skin (Figure 8). The main north-east façade has small openings in the ground and first floor and larger windows in the second floor. Because of the defensive character of the building and the typography design, the other facades are fully closed or with very small openings.

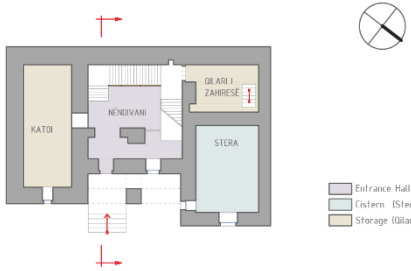


Figure 5: Ground Floor plan of the Zekate house

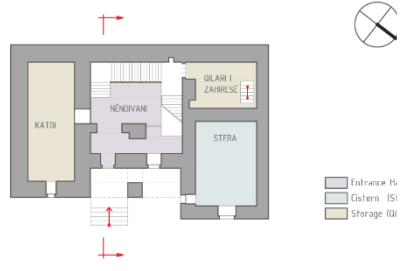


Figure 6: First Floor plan of the Zekate house

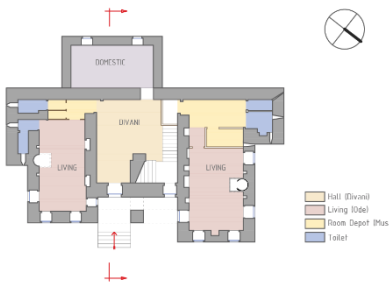


Figure 7: Second Floor plan of the Zekate house



Figure 8: Third Floor plan of the Zekate house

Case Study B– Kikino House

Kikino House is located in the Manalat quarter, which is in the suburban areas. The location is a topography hill, with dense trees in the north, west and south. The building is oriented towards north-east and has two entrances, from which the main one is from east, towards the courtyard. The second entrance is from the back part following the topography of the site (Figure 9). Today the house is an example of the well-preserved structure, but its interior has had changes, from which the most important one is the change of the guest chamber.

The house is of the variant with one side. The composition is distinguished by the compactness, clarity and dynamic development of compositional units. (Figure 10) A characteristic of the Kikino house is a closed chamber in the main view. In the plan development, the two inhabited floors are expanded against the ground floor, adding to each of them a cooking environment.



Figure 9: Landscape plan of Kikino House

An unusual solution is the placement of the qilari zahirese in the wing block. The plan scheme floor of the two inhabited floors is the same. In each of them we find three living environments, and through an interconnecting passage it is passed between the two end areas, from the sofa and the cardak to the cooking facilities. Another important characteristic of this dwelling is the second intake of water from the stera, through a pit road that leads to the driveway of the end environments of the first floor. The chamber environment has a chimney. In the interior decoration, there are decorations with murals, with plant ornaments and everyday life. A special case is also the coverage of two doors that connect the cardak with the guest chamber (Figure 11).

In the Kikino house, the ground floor is used for storage with the qilari i zahirese, katoi and the stera. (Figure 12). The first floor is used for winter accommodation and the second upper floor is an opened cardak structure with the divani and living areas (Figure 13). The main north-east façade has small openings in the ground floor and the side facades have fewer apertures is used for winter accommodation and the second floor which is composed of timber structure (Figure 14).



Figure 10: The main façade of the Kikino house

Figure 11: The main entrance to the Kikino House and the main stone stair

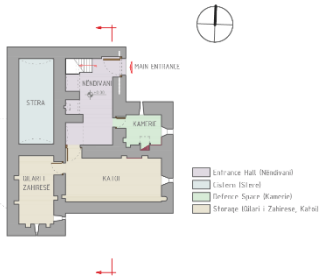


Figure 12: Ground floor plan of the Kikino house

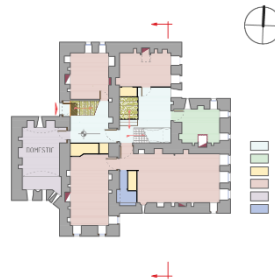


Figure 13: First floor plan of the Kikino house



Figure 14: Second Floor plan of the Zekate house

Case Study C - Fico House

The Fico house is located in the Palorto quarter (Figure 15). The main entrance is through a courtyard directly street and the other from the typography in the back part (Figure 16). The Fico house is located in a denser urban area compared to other case studies and the entrance is directly from the street. The building has an orientation north-east and with trees mainly located in the east west part (Figure 17).



Figure 15: Landscape plan of Fico House

In the compositional plan, the building repeats the simple variant with two wings, adding a block in the right part. In the ground floor there are positioned the nendivani, katoi, stera dhe qilari zahirese (Figure 18). In the first floor there are positioned two living areas, the main central connecting part and a cooking area (Figure 19). The second floor repeats the same scheme (Figure 20). The main façade north-east has larger windows in the upper floors, which are used as summer living areas. The upper floor is a special volume called “musander”. The side facades have fewer openings.



Figure 16: Entrance of the Fico House



Figure 17: Tunnel connecting the building with the other part

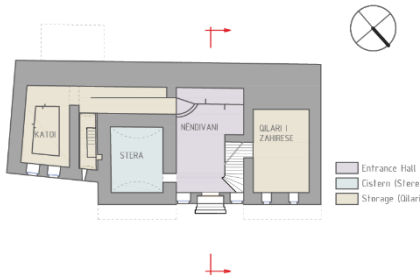


Figure 18: Ground floor plan of the Kikino house

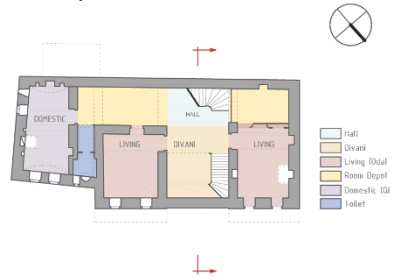


Figure 19: First floor plan of Fico House

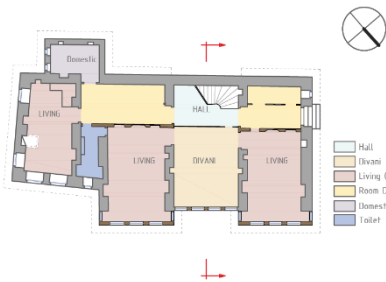


Figure 20: Second floor plan of Fico House

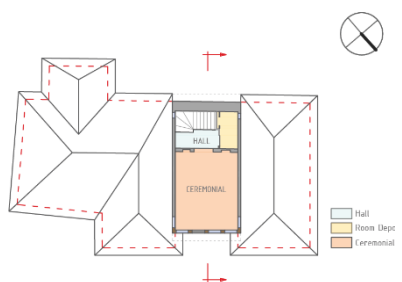


Figure 21: Third floor plan of Fico House

CONSTRUCTION MATERIALS AND TECHNIQUES

Case Study A - Zekate House

The façade is composed of stone in its original condition. The presence of the chimney and its height were symbolic and represented the wealth of the household (Mezini, 2014). The House façade is uncoated and includes architectural elements such as: round arches, pillars, stairs, doors and windows in stone relief arches. Because of the rocky terrain the foundations are not very deep: the nest is built directly and on it the wall frame. The construction forms two distinct parts – a stone lower story topped by a wooden gallery of several rooms to house the extended family. Side facades have fewer openings than the main façade. The stone walls are 1 m thick at the base of the house and are bound with limestone mortar with an in-built band of wooden beams to give the house flexibility in case of earthquakes. The stone is local. The two tall columned arches, a structure called “kamerie”, are aesthetic and from the construction aspect carry the weight of the upper rooms. The walls are made of limestone painted with a layer of mortar in the inside part. The stone on the façade is left in its original state. The staircase that winds upwards through the centre of the building is paved with grey slates outlined in a red paint that protects the soluble lime cement from being washed away by frequent cleaning. Wood, as an important element in construction and décor, can be seen in the window frames, serving both to protect and add an aesthetic element to the outlines of window fences. The floor is paved with red and black tile stone. The mezzanine floors are composed of wood tiles supported on wood trusses (Figure 22 and Figure 23).

The roof is composed of stone slates organized like a puzzle using only their weight to hold them. On the truss are put the battens in a distance 5-8 cm and on it the stone slates. The material used for the roofs is the timber wood. The “testekë” (*wood frame support sunders the roof connecting the roof and windows*) are structural elements. They reach sustainability of the wooden material, which is, in this case, the load bearer for the shelter and roof. The stone slates for the roof have been found in the neighbouring “Mali i Gjere hillside” and they are placed to create watertight roofs (Figure 24 and Figure 25). The construction detail section shows the layers of stone, wooden floors and roof composition is shown in (Figure 26).



Figure 22: Wood floor in the Zekate house



Figure 23: Ground floor in the Zekate house and main stair



Figure 24: Roof of the Zekate and the testeke



Figure 25: Roof construction element in Zekate House

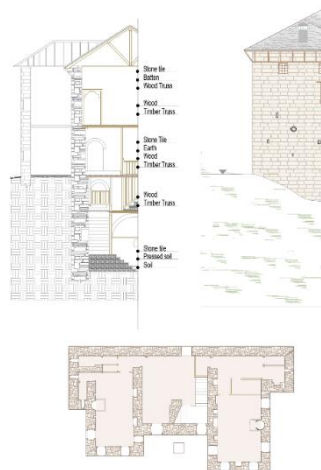


Figure 26: System detail of the Zekate House

Case Study B – Kikino House

An important architectural characteristic is the frame that runs through the two parts of the kamerie, as well as the top of the cardak frontal arcades. The house is covered by greenery on the walls which affects positively the indoor thermal comfort (Figure 27). The stone wall thickness varies from are 1 m thick at the base of the house and is diminished with 10 cm for each of the other two floors (*90 cm for the first floor and 80 cm for the second floor*). The walls are connected with limestone mortar with a band of wooden beams. The stone is local. The two tall columned arches, a structure called kamerie, are aesthetic and from the construction aspect carry the weight of the upper rooms. The walls are made of limestone painted with a layer of mortar in the inside part. The stone on the façade is left in its original state (Figure 28). The staircase that goes through the building is with stone structure paved in grey tiles. Different parts of the building have wooden floor such as the divani and the first floor. Also, other parts are stone tile floor pavement. As in other examples, the roof is made of trusses, the stone slates, standing on each other like a puzzle. Also, testeke are used in the divani area to support the roof (Figure 29 and Figure 30). They are a load bearer for the shelter and the roof. Wood is also used to frame the windows. In the upper floor, there are used Venetian coloured glass window in the living room. A system detail of the construction of the Kikino house is drawn in Figure 31.



Figure 27: The greenery used in the walls of the Kikino house



Figure 28: Facade of the Kikino House, the testeke and the unpainted stone facade



Figure 29: Roof of the Zekate and the testeke



Figure 30: Roof construction element in Zekate House

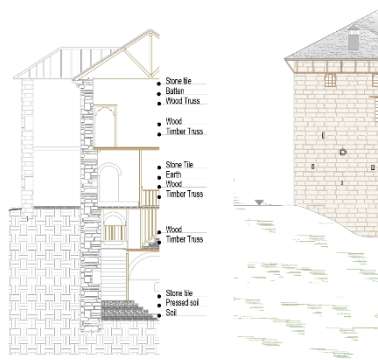


Figure 31: System detail of the Zekate House

Case Study C - Fico House

The interior and the external main façade illustrate the detachment from the old shapes. The main façade has two main volumes, two foreheads of the chambers of the second floor and the mansard. The main façade has wood decorations; the arched shapes of the erkens give to the house the characteristics of architecture with baroque influence (Figure 32). The stone wall thickness is 80 cm for the ground and first floor and 30 cm in the upper floor. The walls are stone

walls and are bounded with wooden trusses. The walls are made of limestone painted with mortar in the inside part and outer part. The floors are wooden and stone floors with wood trusses. Wood is also used to frame the windows. The roof is stone slate roof supported in wood trusses (Figure 33). The construction system detail has been drawn in (Figure 34).



Figure 32: Fico facade painted in mustarde colour in the outside: the upper windows are bigger



Figure 33: Fico facade painted in mustarde colour in the outside: the upper windows are bigger

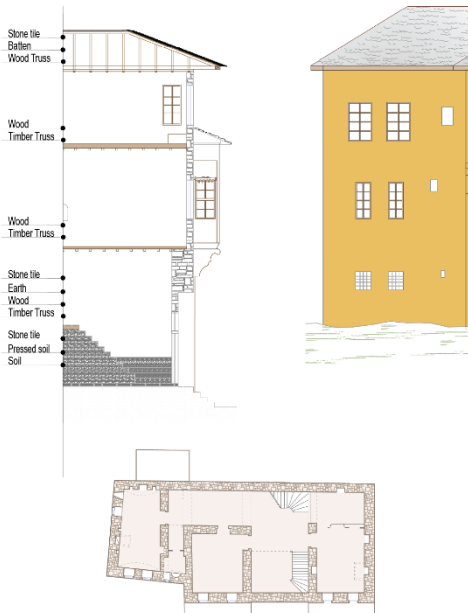


Figure 34: Fico system detail

A COMPARATIVE ANALYSIS

The main characteristic of these houses are balconies, verandas and courtyards. Also, they represent similarities in the construction aspect. They are characterized of thick walls with high thermal mass, wood and stone floor and puzzle structure roofs. Also, the foundation is not very deep in general because of the rocky foundation. The wall structure is heavy in the lower floors; stone composition with thickness decreasing and the upper stories are light wood opening structure or have more windows (Table 2). The three houses include different climate responsive strategies For summer season: i) The surrounding of the house with trees and design following the topography, ii) The deep roof eaves to provide shading, especially in the main façade, iii) Opened wood construction or large windows in the upper floor, which is used for summer accommodation. For winter season: i) Thick stone walls in the ground floor, for the thermal inertia and the wood structure in the upper floors. Also in the upper floors the thickness of the walls decreases, ii) The usage of natural materials such as wood, and stone (which is local and of a very good quality), iii) Orientation towards the sun and following topography design, iv) Small windows in the lower floors used for storage or winter accommodation. The north-east orientation of the main façade makes possible the penetration of a large amount of light. The usage of shading elements has contributed in the visual comfort of the house.

Table 2: Description of elements of the three selected houses

House type	Foundation	Wall system	Roof structure	Floor	Openings
Zekate House	Stone, not very deep, directly in the rock terrain	Stone wall, 1 m to 70 cm thick, decreasing with 10 cm for each floor	Stone slates free standing supported on wood truss system Roof slope 25-30 Eaves 50 cm to 1,4 m	Stone in the lower floors and wood in the upper floors	The “cardak”, a lightweight opened wood structure

Kikino House	Stone, not very deep, directly in the rock terrain	Stone wall, 1 m to 80 cm thick, decreasing with 10 cm for each floor	Stone slates free standing supported on wood truss system Roof slope 25-30 Eaves 1m	Stone in the lower floors and wood in the upper floors	The “divani”, a lightweight opened wood structure
Fico House	Stone, not very deep, directly in the rock terrain. The back part is 170 cm to support the structure	80 cm to 25 cm in the third structure	Stone slates free standing supported on wood truss system Roof slope 25-30 Eaves 50 cm to 1.3 m	Stone in the lower floors and wood in the upper floors	Large windows in the upper part

INDOOR THERMAL COMFORT ANALYSIS

Thermal comfort is a condition of mind that expresses satisfaction with the thermal environment. The primary variables of thermal comfort are: i) Ambient temperature (air temperature), ii) Radiant temperature (the temperature of the surfaces around us), iii) Relative humidity (*measurement of the water air in an air -water mixture*), iv) Air motion (*the rate at which air moves around and touches skin*), 5) Metabolic rate (*amount of energy expended*) (Raish, 2009). The field survey was conducted in Gjirokastra via a questionnaire evaluating thermal comfort and to gather information about the perception of people about the environment of the dwelling. Interviews were developed with inhabitants of the city during the visit of the Bazaar of Gjirokastra. The questionnaires were developed for 30 traditional dwellings in the city. The two parts of the questionnaire include information about the temperature inside the house, humidity, air movement and ventilation and mechanism for ranking thermal comfort. The graph of the indoor temperature in summer shows that most of the people perceive the house as a cool environment in summer. Only a little percentage perceives it is uncomfortable and warm. The temperature in winter season is mainly perceived as warm by the inhabitants (Figure 35). Most of the people interviewed perceived the humidity level (*in winter and in summer*) positively (Figure 36).

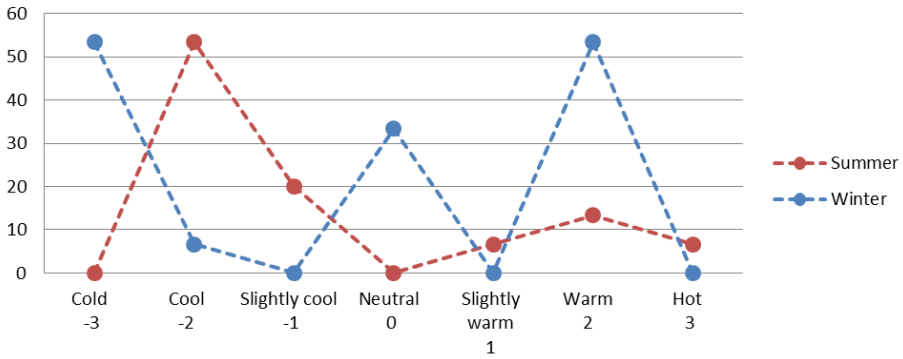


Figure 35: Subjective response on indoor temperature

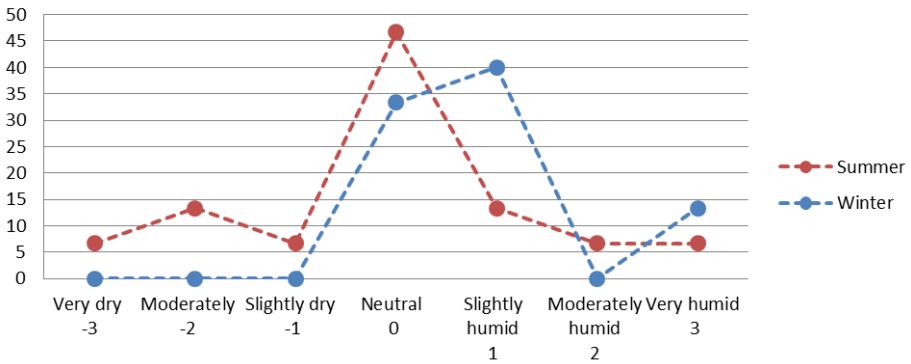


Figure 36: Subjective response on Humidity

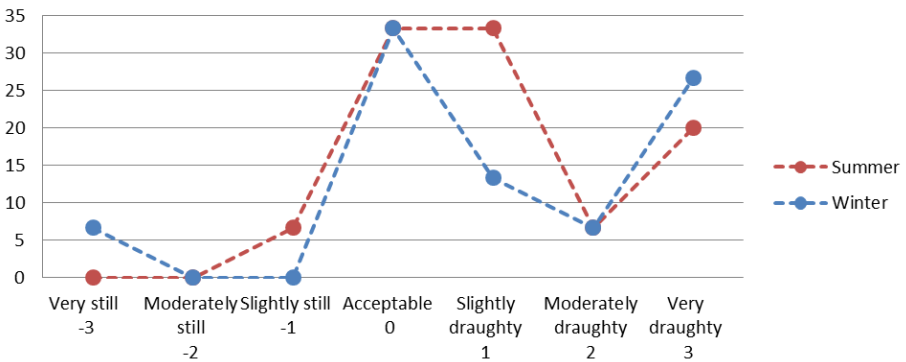


Figure 37: Subjective response on Air movement

An important variable which defines thermal comfort is the air motion and ventilation which can be perceived by visiting the traditional

houses in Gjirokastra, especially, the upper floors. The graph of the air movement in summer illustrates that during this season most of the people feel the air acceptable or slightly draughty, which means cool. The air movement and ventilation in winter is mainly felt as acceptable (Figure 37).

As a general analysis of the thermal comfort of the houses in Gjirokastra by the questionnaire, it is valued that the general comfort in summer and winter is evaluated as comfortable. Most of the people interviewed expressed that the indoor system of the houses was very well ventilated and shaded during the summer season (Figure 38). Almost 80 % of the interviewed felt the very well ventilated inside spaces in summer so there is no need for use of mechanism in the summer season (Figure 39). In the winter the inhabitants felt a little the cold environment and the main mechanism used for warming was chimney which uses wood as an ecological material. Also, other mechanisms for warming were the air conditioner and air heater. The air conditioner is used in houses which have been restored and reused as hostel or hotels (Figure 40).

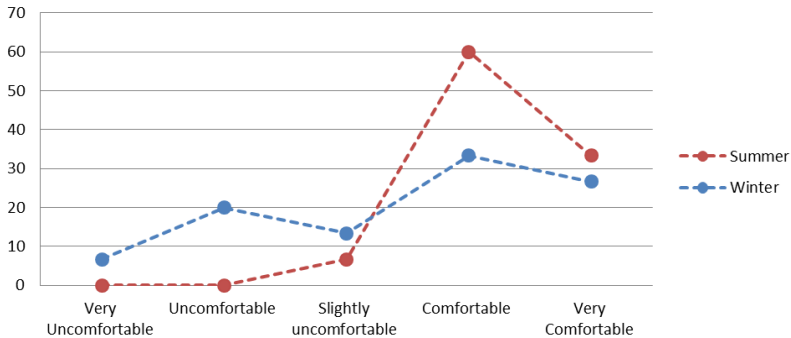


Figure 38: Subjective response on thermal comfort

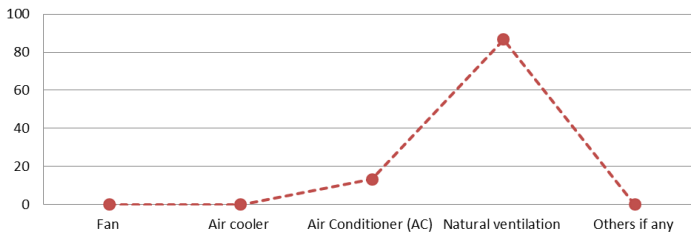


Figure 39: Mechanism used to overcome thermal discomfort in summer season

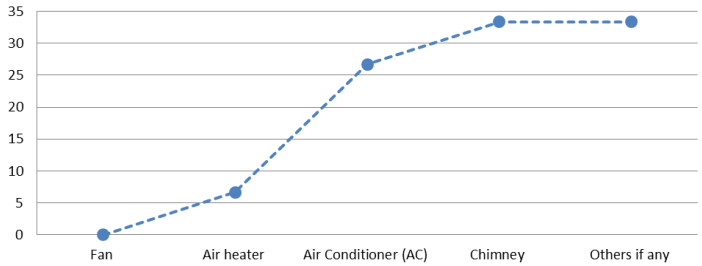


Figure 4. Mechanism used to overcome thermal discomfort in winter season

CONCLUSION

The main aim of the present research is to make an exploration of the passive solar strategies used in the vernacular dwellings of the city of Gjirokastra. The study has been conducted in three case studies: 1) Zekate house 2) Kikino Hose and 3) Fico House. The three buildings are monument of first category and are located in different landscapes. The main solar passive strategies for ventilation in summer have been studied in the level of the three main elements of building envelope: roof, walls and floors. A main characteristic of the Gjirokastra vernacular dwellings is the inter-seasonal design of spaces. The lower floors have thick stone walls, for high thermal mass and small openings. The upper floors are wood structure. The ground floors are used for storage the upper for summer and the below ones for winter accommodation. This division of circulation is followed by a specific design for heating and ventilation. High and large roof, deep eaves for shading mainly in the main façade and the light construction have contributed in the visual and thermal comfort of these buildings. The high thermal inertia walls, wood and stone floors and small openings in the ground provide a good warming in winter. The study aims to develop guidelines for climate responsive design and create background knowledge about the vernacular dwellings in the city.

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URBAN PLANNING AND DESIGN

IMPROVING THE QUALITY OF JAKARTA'S COMMERCIAL AREA THROUGH DESIGNING THRESHOLD SPACES IN A PUBLIC PLACE

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ABSTRACT

This The quality of any public spaces in the city should be able to become a public place that supports community activities within it. A Square; the heart of a city as one of the urban spaces has a big role for the community, because such space can be a place where people can socialize, interact, and carry out various activities together as a group or even individually. The problem of urban public space in Jakarta, aside from the lack of quality of space, are mostly defined by urban space that surrounded by stand-alone buildings which neither has continuous visual nor its spatial connections.

These conditions are found in several major commercial areas in Jakarta, one of which is in the main commercial area of Mangga Besar – this area is consist of shopping, hotel, culinary, restaurant and entertainment district. The urban public space in this area is not well connected, so it does not provide an urban spatial experience, socially, for people to enjoy this area. For this reason, the boundaries in and out of existing public places need to be improved by designing threshold spaces that can act and respond as both connector and an entrance for these commercial areas.

The study will be conducted in two stages, namely through literature and precedent studies, followed by observational studies on site surveys and analyses. The results of this analysis will be used as a basis in developing the design of public place as a threshold space. The purpose of this study is to find the criteria for public place as a threshold space that can increase the interaction and quality of urban space and make a commercial area more alive. This study also

produces several concepts for the development of public place as a threshold space in the commercial area.

KEYWORDS: urban space, public place, threshold space, commercial area

INTRODUCTION

The development of commercial areas plays an important role for the growth of a city. In addition to provide an urban economic growth, the growing of commercial areas can provide availability for a public space that is lively and reflect an identity of the city itself. Such condition can be seen in one of the main commercial areas in Jakarta, an area called Mangga Besar (Mangga Besar Street). This area is one of the areas in the city that has survived as a commercial area since its development as a cultural area along with artists' communities from the 1920s to the present. At the beginning of its development, the Mangga Besar area was known as a place for residential and cultural activities, with the emergence of cinemas, open public spaces for social and cultural activities in an environment known as Prinsen Park. This area is one of the development center along the Mangga Besar corridor. The surrounding area develops with commercial activities, trade, public facilities such as hospitals, train stations, hotels and so on. This area develops and becomes celebrated for people's entertainment area with various facilities for cultural recreation. After it went through several reconstruction, this area has developed into a very successful commercial area particularly for its culinary, shopping and nightlife activities – this area has an identity as one of Jakarta's nightlife center at that time and continues to grow and survive until now.

The development of this region, along the street of Mangga Besar, create centers for public activities which then have potentials to establish a public place and new urban spaces (Lerner, 2014). However, the development of these centers spontaneously attract problems, not only for the overall development of urban space in the Mangga Besar corridor in general, but also the threshold space in several main activity centers. The development of compact buildings and over-crowded activities of street vendors, especially at night, generate discontinuity within the existing public spaces and cause obscurity of the "entrance" from the main street of Mangga Besar to the main activity center. Not to mention the density of activities within the compact building makes the public space less public, especially for socializing and recreational area for its residents – which had been the identity of this neighborhood. For this reason, there needs to be a public place (Buildings and Public Spaces) that can integrate variety of public activities that function as a connector, threshold space, from the main activity center to the street of Mangga Besar. This paper aims to discuss what attributes/criteria need to be considered in context of establishing quality (next) urban places and how to improve the Quality of "Mangga

Besar" area as a commercial and public place through designing threshold spaces.

BRIEF HISTORY AND PROBLEMS IN MANGGA BESAR CORRIDORS

The The corridor of Mangga Besar is located in the Mangga Besar area in the West of Jakarta and is roughly 2 km from Jakarta’s city center, it is an area that widely known for its commercial and entertainment venues. In 1920 the Mangga Besar street’s corridor began to develop from one of the main activity centers in a public place known as "Prinsen Park" (cultural park). Behind this area is the residential area of “Tangkiwood” artists. They held various opera and performances in public places and in buildings that were centered in the area of Prinsen Park, which is currently known as "Lokasari Square" (a place for various people's entertainment). Since then this area has developed with a variety of supporting facilities, such as cinemas, hotels, inns, commercial shops, culinary venues, places for various people's entertainment such as shows, magic, aquariums and places for selling ornamental fish and so on.



Figure 1: Map of Jakarta, Source: Google map

The prestige of Prinsen Park and Tangkiwood faded in the 1970s until finally revitalized by the Jakarta’s Provincial Government in 1985. Prinsen Park was renamed to become Lokasari People’s Entertainment Place. At that time Lokasari became a place / square collection of several movie theaters, basketball courts, swimming pools, souvenir stalls, dance schools, bars, Happy World restaurants, and a number of restaurants serving menus of snakes, monkeys, mackerel, crocodiles and monitor lizards. Entering 1990, Lokasari turned into an area of nightclubs and restaurants that once again almost never slept. However, after being renamed Plaza Lokasari, the recreation area is

now merely a broad "market" with several identities as a cultural park that has disappeared (Kompas News, 2013).

Besides the fading of the identity of the Lokasari area as one of the largest and first public spaces on Jalan Mangga Besar, the Mangga Besar area also has other problems. The development of the area around Lokasari Square (formerly called Prinsen Park) creates small public spaces that are not well connected to each other. Continuity between one place of activity and another place is not well connected. At present, the Mangga Besar area consists of a dense commercial area with different activities during the day and night. Buildings along Jalan Mangga Besar Raya are designated as office and shopping areas during the day. But starting in the afternoon, a row of the storefront of the shop building was used as a place for street vendors to sell goods. At night, the Mangga Besar area is crowded with culinary areas that are crowded by the people who came from all around Jakarta. Selling tents and street vendors cart meets the front area of the building which is a pedestrian street and takes part of the street to the vehicle causing problems for the comfort of street users in the Mangga Besar area. Congestion and density of traders in the area are also reducing the quality of liveable cities, especially in this region.

Road and pedestrian access filled with street vendors & parking

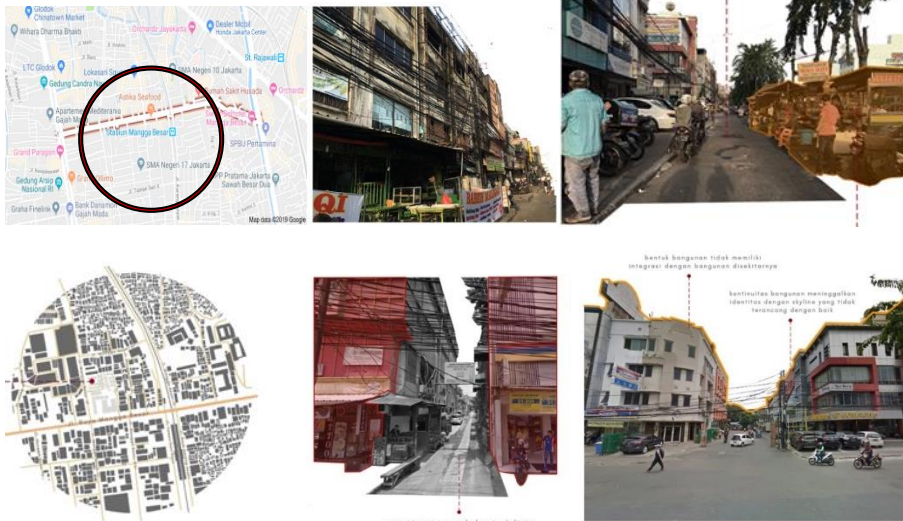


Figure 2: View of Mangga Besar Road, Source: Google map & private picture

The discontinuity of urban space in the Mangga Besar area which makes the face of the street irregular, the entrance to the Lokasari / Prinsen Park public space which loses its identity as the cultural center and decreases its lively level, and the chaos of the street vendors blocking the entrance to Lokasari is a major problem in reviving this area is a quality public space and contributes to the development of the commercial area in Mangga Besar. Addressing existing problems and to restore the quality of city space here, this paper takes a case study in the area around Lokasari as one of the important points that can generate continuity in the face of the street and at the same time constitute the transitional space and "gates" from the main street to the lokasari area.

URBAN PLACES AND (STREET) FACADE IN MANGGA BESAR AREA

Urban places are places where people do various activities, to socialize, recreation, sell / shop and so on (Carmona, et al, 2007,2008; Carr, 1992, Oc, 2003). Urban places are public places which besides accommodating social, economic and cultural interaction activities, can also create the identity of a city. The development and formation of urban places in Mangga Besar, especially around Lokasari, occur from human activities there by utilizing the functions of the buildings around them. These urban places are also formed from buildings, urban design elements in the vicinity such as: pedestrian, streetscape, street furniture, public open spaces etc., and daily activities of the people in that place. Night-time activities with culinary activities and street vendors are prominent activities.

Improving the quality of public spaces in the area around Lokasari needs to be seen also the connection between public spaces / public places and with buildings that form spaces that form edges / facades around the site and along the street. Seeing facades / edges along the street of Mangga Besar , especially the central area around Lokasari, can be found in some negative public spaces. This is due to the availability of pedestrians and street spaces, but most of them are occupied or occupied by street vendors. This condition besides covering the street, it also covers access to public places. The establishment of urban places (buildings and urban spaces) around the quality Lokasari will be a generator for the surrounding area, thus forming the face of a street that is integrated between buildings and city space into a place that is comfortable, safe, as well as having an identity. Processing of urban space in this area is in accordance with

the concept of developing urban space / city sections that pay attention to the semi-lattice structure where there is a combination of existing city network structures, such as buildings, roads, open spaces and others (Alexander and Mehaffy, 2015). Elements in urban places work together or continuously form a unity into a larger and more complex system, which forms a system of cities / parts of the city / roads that are intact. The diagram of the development of public spaces around the Lokasari area is as follows:

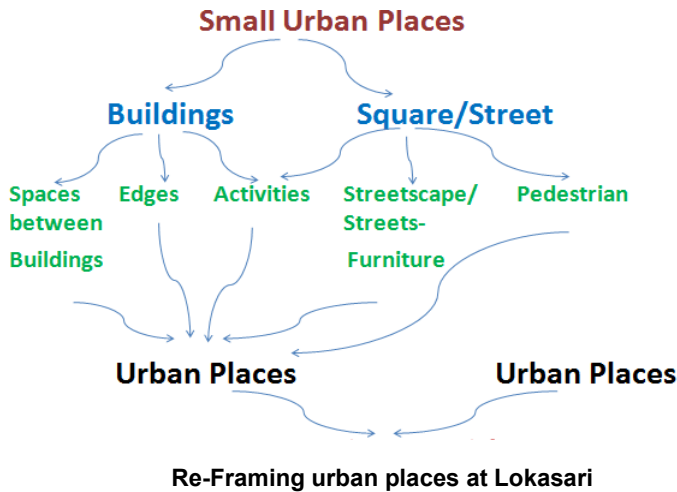


Figure 3. Semi Lattice Diagram of Small Urban Places

Based on a study from Srinaga, et al (2017) on improving the quality of "Fatahillah Square" in Jakarta, explained that there are three parts of city space that need to be considered in an effort to improve the overall quality of the city / square space to be a quality public place and lively. These three parts are: Square / urban places and Street connectivity, Square / urban places and Buildings, and liveability and publicness of the area. Seeing the conditions, location and problems in the Lokasari area in Mangga Besar, these three parts need to be considered into the design of urban public places, in regards to improve the quality of urban places in Mangga Besar.

As a quality public place, the establishment of urban places in this area must also meet several criteria as the quality of a good city public space, namely: Access & Linkage, Sociability, Uses & Activity, Comfort & Image (The Project for Public Space, N.Y Journal, 1999).A more comprehensive study of urban places' quality (Cho et al., 2016) puts forward three interconnected components. These components affect

the quality of urban spaces, namely **HARDWARE**, **SOFTWARE**, and **ORGWARE**. **HARDWARE** refers to physical/spatial values (design values of space) which are 1) accessibility, 2) connectivity, 3) mobility means, 4) legibility and edges, 5) spatial variety, 6) environmentally friendly design, and 7) user comfort. **SOFTWARE** involves usages, social and perceptual values of urban spaces, which are 8) diversity and intensity of use, 9) social activities, and 10) identity. Finally, **ORGWARE** relates to operational and management aspects of public space which are 11) provision of amenities and services, 12) safety and security, and 13) management and regulations.

From some of these studies and by looking only at the two hardware and software components of Cho's study (2016), it can be concluded that the criteria for establishing quality urban places are fulfilling several attributes as follows:

Table 1 Criteria for Public Spaces in Commercial Areas

Quality Criteria for Public Spaces in Commercial Areas
1) Access and Linkage/Connectivity a) Entry Access b) Pedestrian Access c) Building Entrance d) Circulation Flow
2) Usage and Activity a) Types & Functional Activities b) Diversity and Intensity of Use c) Spatial variety
3) Building Visual & Identity/Image a) Form b) Facade c) Openings d) Legibility & Edges e) Building Characterization
4) Integration & Sociability a) Uniformity towards surrounding context b) Public Spaces & Social Interaction
5) Liveable & Comfort a) User Comfortness b) Safety & Security

THE ROLE OF THRESHOLD SPACE AS AN URBAN TRANSITION

In response to the phenomenon of improving urban places continuity in the ManggaBesar region, this study will focus more on the concept of threshold space in an urban context. The case study on the site / area around Lokasari was designed as a public space as a threshold space that connects the pedestrian with the lokasari area as well as connecting the existing public space on the street of Mangga Besar. In general, a threshold is a transition from one area to another. A space bounded by a threshold can be entitled a threshold space. The definition of threshold space is a transition space between one space and another space and where humans move in space and between buildings (Boettger, 2014).

Boettger (2014) also describes several definitions of threshold space functions, including:

- Boundary, can be in the form of lines, areas, or volumes depending on context and dimensions, known as stylists and spacers.
- Space-defining elements, in the form of certain elements that are placed as focus or material differences. Threshold in this sense as openings or openings of the transition of a space
- Temporal transitional state and emphasizes the space experience in sequences. Threshold in this sense refers to the threshold spaces that are related to human perception of space.

In this study, the discussion of threshold space focuses on its function and role as an urban transition space. The threshold space as a transitional space has two functions, namely as a barrier to access or as an opening that gives orientation and direct access to a place (Boettger, 2014). The extent to which a person locks, blocks, opens, invites, expands, or limits the accessibility of one's spatial experience in that space / place.

In architectural buildings, the threshold space function has an important role as a delimiter and transition space from one room to another. In its function as a transitional space, threshold space requires its supporting elements. Elements that are usually used in the form of opening elements in the space divider, which allows the transfer from one space to another. The use of doors as a barrier is the most basic and common example in the use of a threshold space. A threshold space describes the opening of the space in which limited to cross its space (Boettger, 2014), so that the threshold space is essentially a transitional space that provides a spatial overview to its users

In this study, threshold space focuses on its function within an urban context. The threshold space, in the city context, has relatively similar role as its role within a wider architectural context. The threshold space in a city context can act as a transitional space connecting buildings / places (Aelbrecht, 2016). The transitional space then could become a connector between public and private areas. The transition can also be a public space for the community. Public space in an urban daily life becomes a primary need as a place for public interaction to happen. In addition to its function as a transitional space that is useful to a public space, threshold space has other practical use. It may answer the main problem that is often found in cities, which is the discontinuity of continuous urban spaces. In restoring the continuity of urban space, there are several steps in designing the threshold space in the urban transition space, namely by reviewing and implementing some typology of threshold space in the formation of quality city public spaces.

The following are the typology of threshold space that have been studied according to Boettger (2014) and Aelbrecht (2016) as a transition space, specifically:

- Entrance or gate, generally the threshold space is an opening in the wall that allows it to be passed or closed (Boettger, 2014). An entrance influences the nature of the transitional space whether it is inviting or closing itself.
- Difference in elevation, placement of stairs affects the experience of arrival. Level differences can indicate the boundary between two different functions (Boettger, 2014)
- Paths can be used for a large effect in slowing down travel and facilitating experience.
- Nodes, social nodes can also be created because they fill the 'in-betweenness' of a location. The form of open space that brings together and enhances social interaction is the atrium, plaza, square, etc.
- Edges, with only narrow paths on the edges can form areas that function as transition spaces or boundaries between spaces.

In this study, the determination of the design of the threshold typology used was based on site analysis and what threshold forms could be useful for the surrounding area. The threshold space must be used in accordance with the functions of the building to be designed, so it requires parameters that can help design to support this.

The threshold space parameters are being used in this study were taken from two sources. Parameters according to Till Boettger are more

directed towards threshold space in architecture, while parameters according to Jason King discuss more about threshold space in urban areas. The Threshold Spaces parameter proposed by Till Boettger (2014) consists of: Spatial Delimitation, Spatial Sequence, Spatial Geometry, Topography, Materiality and Furnishings. While the parameters proposed by Jason King (2012) consist of shadow & light, street configuration, square & plazas, building height, door & windows, and planting. The threshold space parameters of the two sources have similarities and similarities in the explanation. Doors and openings are closely related to spatial delimitation in the transition space, the entrance of a transitional space becomes a threshold that determines the nature of the transitional space. Table 4.1 summarizes the threshold space parameters that can be used as benchmarks in this study.

Table 2 Parameter Threshold Space

Threshold Spaces: Transitions in Architecture, Analysis and Design Tools (Boettger, 2014)	Transitions and Thresholds in the Urban Environment: Activating Space and Identifying Place (King, 2012)	Parameter Threshold Space
spatial delimitation	door & windows	entrance & openings
spatial sequence	street configuration	sequence
spatial geometry	square & plazas	geometry
	building height, shadow & light	building height & shadow
materiality		materiality
furnishings	planting	planting & furnishings
topography		topography


Source: Personal Analysis

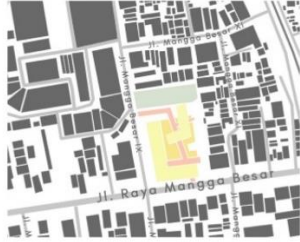
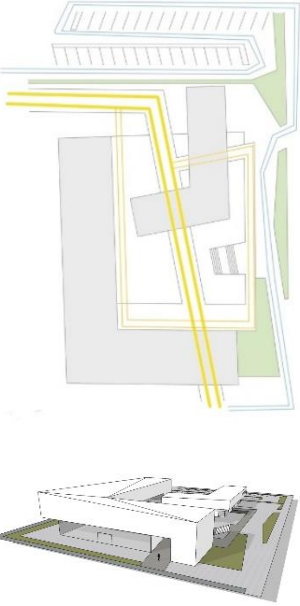
THRESHOLD SPACES AS A LIVELY CONNECTOR OF URBAN PUBLIC PLACES AT MANGGA BESAR AREA

In improving the quality of public space in the Mangga Besar area, especially in the area around Lokasari, this study presents several design concepts that are based on the quality of the threshold space as a connecting space and quality public space. The draft concept was

developed by applying the parameters forming the Threshold space that pay attention to the criteria of public space in the commercial area of Mangga Besar, so that it can develop the quality of commercial areas as lively and comfortable public spaces (Awoniyi, 2014; Poldma, 2014). The developed concept can be seen in the table below:

Table 3 Conclusion of Criteria for Public Spaces in Commercial Areas by Application of Parameters. Threshold Space

Criteria for Public Spaces in Commercial Areas	Parameter on forming Threshold Space	Concept Illustration
<p>1. Access & Linkage/ Connectivity</p> <ul style="list-style-type: none"> a. Main Entry Access b. Pedestrian Access c. Circulation Flow 	<p>Sequencing</p> <ul style="list-style-type: none"> • Freely selectable sequences make it easy to reach from outside the site • Location is placed in a strategic and prominent place • Facilitate access by means of transportation: cars, public transportation • Clear and regular circulation • Pedestrian access connected to the surrounding area • Transitional space accessible to everyone (including those with disabilities) <p>Topography</p> <ul style="list-style-type: none"> • Embedded topography from architecture has clear and regular circulation • Topography is closely related to the flow of circulation in the transition space, topography regulates the travel experience traveled by its users 	 <p>The map illustrates the Mangga Besar area with various zones and access points. A legend at the bottom identifies the following elements:</p> <ul style="list-style-type: none"> • area komersial (green) • permukiman (orange) • akses pedestrian (yellow) • akses kendaraan (blue) <p>Key streets shown include Jl. Raya Mangga Besar, Jl. Mangga Besar I, and Jl. Mangga Besar II. The map highlights pedestrian access points (yellow circles) and vehicle access points (blue circles) within the commercial and residential zones.</p>

<p>2. Usage & Activity</p> <ul style="list-style-type: none"> a. Types & Function b. Variety of Activities c. Social Interaction 	<p>Geometry</p> <ul style="list-style-type: none"> • Geometry in a free transition space produces a dynamic organization • Transitional spaces are between buildings with diverse functions to attract visitors • Alternative circulation paths can add to socializing activities • Diverse programs add to social interaction activities 	 <p>area parkir area komersial alur sirkulasi plaza</p>
<p>Criteria for Public Spaces in Commercial Areas</p>	<p>Parameter on forming Threshold Space</p>	<p>Concept Illustration</p>
<p>3. Building Visual & Image/Identity</p> <ul style="list-style-type: none"> a. Form b. Façade & Edges c. Openings d. Characteristics 	<p>Entrance & Openings</p> <ul style="list-style-type: none"> • Has its own unique form, not monotonous with the surrounding buildings • The entrance in a building determines the nature of the transitional space, whether the space can invite or even close itself • The characteristics of a building are determined by openings or openings in the building • Edges are not monotonous • Spatial continuity <p>Materiality</p> <ul style="list-style-type: none"> • The distinctiveness of the building is seen from the façade because visuals are the first part visible from outside the building • The use of glass material can be easily seen from the outside, to highlight its function as an attraction 	

<p>4.Integration & Sociability a. Continuity b. Intermediary Space (Public vs. Private Space)</p>	<p>Building Height & Shadow</p> <ul style="list-style-type: none"> • Integration between the height of buildings around it creates better visual interaction between pedestrians and buildings • Connected with surrounding buildings with shade elements to direct sunlight • Continuity of urban space must still be maintained by having integration between the height of the surrounding buildings and the integration of urban places on the site and surrounding areas. • Pedestrian networks connect to each other • Have positive space between buildings 	<p>A diagram illustrating building heights and shadows. It shows a series of rectangular blocks of varying heights. A horizontal line indicates the ground level, labeled 'ground level' and '-3.00'. Yellow lines represent shadows cast by the buildings, showing how they interact with the space below.</p>
<p>Criteria for Public Spaces in Commercial Areas</p>	<p>Parameter on forming Threshold Space</p>	<p>Concept Illustration</p>
<p>5. Liveable & Comfort a. User Comfortness b. Safety & Security</p>	<p>Planting & Furnishings</p> <ul style="list-style-type: none"> • Landscape elements reduce the potential of abandoned areas • Landscape and street furniture as supporting elements and have the potential to become a stimulus for public interaction • Landscape functions to reinforce the path and provide shade of transitional space • Furniture such as stairs or ramps in a transitional space can function as a barrier between spaces which helps in providing security • Circulation with a design that clearly affects security • Furniture in the transition space becomes the boundary of the transitional space 	<p>Two 3D architectural renderings. The top one shows a dense urban block with various building heights and a central courtyard. The bottom one shows a specific building entrance with a wide, open space in front of it, labeled 'Entrance threshold space.'</p>

	as a temporary stopping point	
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Source: Personal Analysis

The design proposal is done by integrating these concepts that integrate building concepts designed with the concept of quality public space that is formed through the design of threshold space.

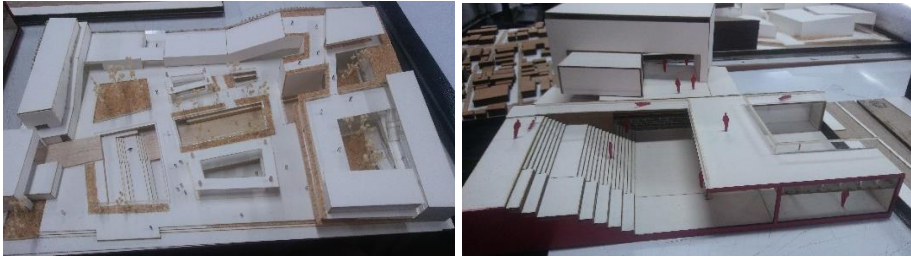


Figure 4: Model by: Felisa Dikwatama



Figure 5: Design and Drawing by: Felisa Dikwatama

CONCLUSION

The limited possibilities offered by the socialist construction industry and the socialist system of central planning in Czechoslovakia forced the country's architects in the post-war years to constantly try to

improvise and to engage in experimentation. In many cases, and in the inauspicious political circumstances, the outcome was resignation and a flattening of architectural production. A bright flash of greater freedom and wider opportunities arrived with the sixties. But after the country's occupation by Warsaw Pact troops in 1968 the political and social situation sharply deteriorated and the distress and shortages also an impact on architecture. However, architects were reluctant to give up their hard-earned space for creative work. Even in the normalisation era they followed developments in architecture and theory abroad and most notably there were still able through great personal commitment and extreme improvisation with limited resources to produce extraordinary architectural works (an important role was played, however, by the rise of a younger, more ambitious generation). These works (public buildings especially) consequently often acquired the hard to grasp features of late modernism, which mixes the rational architectural lexicon of the international style with the structural quality and rawness of brutalism, with the rhetoric and contextual nature of postmodernism, or with enduring intoxication with the rationalism of engineering and technological experimentation.

An interesting feature of the designs described here is that they are not directly tied to the typological structuring of the architecture. Despite the persistent effort to class, catalogue, and find replicable solutions, the methods the late modernism of socialist Czechoslovakia produced are of a freer nature. The criterion of quantity, practical functional analysis, and the selected building technologies favoured by the socialist centrally controlled economy continued of course to play a key role. But architects were increasingly turning their thought towards distinctively individual, more human-oriented, and contextual forms.

The architecture of the eighties in socialist Czechoslovakia is hard to class stylistically in any particular category and is difficult to interpret. We could see this as its weakness and a result of the lack of any central guiding theory or unifying ethos for that time. Current discussions on the present nature and the future of European cities suggests, however, that broad diversity and layeredness are actually a source of great potential that it would be a shame to overlook and undervalue.

ACKNOWLEDGEMENTS

The application of threshold space in designing public spaces in commercial areas is an effort to answer the problems found in urban space in Mangga Besar which is one of the commercial corridors that live in Jakarta. The design of urban space in the Mangga Besar area

has not yet integrated with the surrounding buildings, which has led to the creation of empty spaces between buildings. Empty space in city space in Mangga Besar causes the emergence of the main problems in the city, namely 'lack of continuity'. This phenomenon requires transition space to reinforce the relationship between the two buildings which can be solved by applying the concept of threshold space.

The design of the threshold space in the Mangga Besar Region pays attention to its function as a link to existing public space and the transition space to the Lokasari area. For this reason, the design is based on the design criteria of a quality public space with the application of threshold space parameters as an urban transition space. Processing this threshold space into a public place is bound in a whole frame with a vision as a place of social interaction, entertainment, commercial, cultural, by designing buildings and active public spaces and lively by adding supporting elements.

The re-framing of the Lokasari area as a commercial and cultural place is to rearrange the important center in Mangga Besar in the form of public places (buildings and exterior spaces) by: creating an entrance located on each side of the site that is adjusted based on the integration of the buildings around the site, creating opening, designing commercial buildings in the form of shops and culinary centers with comfortable pedestrian paths and forming strong edges, and designing public spaces that support social interaction by paying attention to floor levelling to provide a remarkable space experience. Space programs both inside and outside this building can also create a threshold space that is lively, as connector and asintermediary, thus creating a comfortable and lively space for the streets of Mangga Besar corridor.

ACKNOWLEDGEMENTS

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DEVELOPMENT AXES AS A CATALYST FOR REVIVING THE UN-INHABITED NEW URBAN COMMUNITIES EGYPTIAN WESTERN NORTH COAST DEVELOPMENT AXIS

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ABSTRACT

There is no doubt that the overpopulation urban problem worries all nations worldwide, that motivates to deal with by all means, thus, some follow establishing new urban communities' policy away from the densely populated regions, but unfortunately some of these communities have not been fortunate enough to achieve the desired purpose due to economic, social, environmental, political and even urban problems, which became a new challenge to join the steady population growth burden.

Many policies have been found for the revival of these uninhabited new urban communities, such as establishing development axes, which is considered as one of the most important strategies that focus on utilizing group of hard and soft infrastructure elements to motivate urban and socioeconomic development.

This paper deals mainly with the role of development axes as an urban development catalyst for the revival of uninhabited new urban communities, As It is considered as a developmental alternative for densely populated cities, therefore these axes should be characterized by strong social and economic incentives to give the ability for achieving this role, attracting population and revitalizing those communities.

Egypt as one of the developing countries suffers from the dilemma of inefficient new urban communities, which represents a major issue in light of the economic challenges facing the country. The strong backing and support of Egypt's political authorities for the western north coast axis to accommodate the predicted population growth through the next

coming years inspires to improve these development strategies to achieve the desired objectives leading to the futuristic visions.

Therefore, setting out criteria and principles of establishing a successful development axis capable of achieving the aims of its establishment is the main aim of the research.

KEYWORDS: Development Axis, Western North Coast Axis, Urban Development, Urban Catalyst, UN-Inhabited New Urban Communities.

INTRODUCTION

Background to the Study

The policy of establishing urban development axes today is one of the most important strategies that focus on utilizing group of infrastructure elements to motivate urban development and economic activity.

The development axes play an important role in the sustainable development of the cities placed on, in addition to provide new development potentials creating new urban communities, as well as those cities in turn activating the role of the Axis. It is a reciprocal relationship between the cities and the Axis while the Axis contributes at the economic development at the same time the city achieves socio-economic aspect which works as a catalyst for urban development.

Problem Definition and the Research Significance

This research main constrain is the limitation of the Egyptian urban extension in the Nile Valley and Delta region that is incapable of accommodating the predicted overpopulation which lead to unplanned urban extensions over the agriculture lands causing high pressure over the main facilities, infrastructure and services in the existing cities.

Urban development is the real indicator for any community development weather in the socio- economic or in the cultural and legal aspects. Egypt had

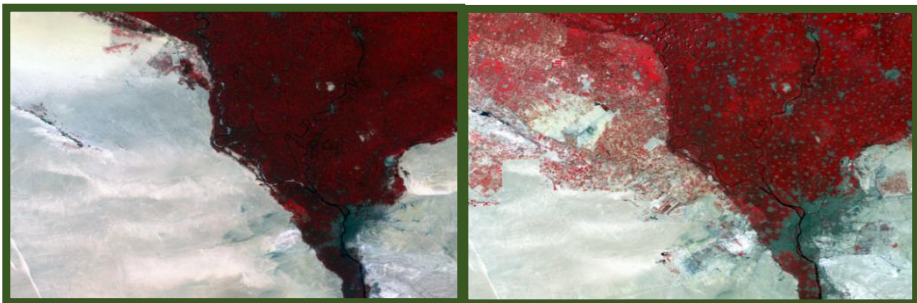


Figure 1: Map for the Delta shows the expansion of agriculture into adjoining desert areas.

undergone several development strategies in the past decades aiming to achieve developmental strategic aspects in the fields of urbanization, environmental, political, economic, and social. New cities

experience in Egypt as a main strategy to overcome this dilemma exposed to many evaluations and auditing carried out by scientific institutions at specified time intervals after its implementation in the seventies, where new cities theory appeared in France and England and other countries in order to relieve the pressure on capitals and overpopulated cities , then When the theory moved to Egypt, the goal was to go out into the desert away from the narrow valley, in which the new Egyptian cities was chosen in terms of form and not in the framework of regional schemes where different relationships determined whether with the existing or new urban communities , in which the failure of achieving the target of new cities establishment appears in the following:

- The emergence of the phenomenon of idle energies in the field of capital
- The emergence of the phenomenon of burning energies
- The continuation of the housing crisis and existing cities problems
- Slow population growth.

This failure occurs due to the followings:

- Lack of sufficient elements of attraction
- Failure in implementation of the original plan
- Enlarge targeted size of the new cities
- Random selection of new Cities locations
- The absence of an integrated development and the comprehensive planning of new cities.
- Lack of funding and Shortage in the new cities Management System.
- The emergence of the idle energies' phenomenon in the housing field.

So even providing the new communities not only fail to materialize but was so hard to sustain, as a conclusive evidence the updated strategic national plan of Egypt 2050 mentioned the following statistics:

- Population: 94.7 million
- Concentration of population in 7.4 % of the total area
- Poverty (27.8% of the population below the poverty line)
- (5.3% of the population is destitute)

- Illiteracy (30% of the total population)
- Unemployment (13% of the total labour force)
- Social disparities between regions in the income and standard of living and services.
- Scarcity of the traditional exhaustible resources (Ground water / oil / gas)
- Urban sprawl & erosion of agricultural land (13000 acres per year between 1984 to 2007)



Figure 2: the structure of the 3 generation Egypt's new cities program
 Source: <http://www.newcities.gov.eg>

Aim and Objectives

Aim

Motivate the population spatial displacement and mitigate the overpopulation on the Nile valley and delta region providing new development prospects through the principles of development axes to motivate urban development on the western north coast axis as a developmental alternative.

Objectives

- Define a clear concept development axes, requirements and roles

- Extrapolates success potentials of local and international experiences in development axes.
- Apply the concluded potentials on the New Borg El Arab city as a part of the western north coast axis to motivate urban development.

DEVELOPMENT AXIS CHARACTERISTICS

Axis development concerns connections that use different transport modes (e.g. car, train, tram, ship, aeroplane), and carry both passenger and freight transport links. while Priemus and Zonneveld refer to a Axis as consisting of “bundles of infrastructure that link two or more urban areas” (Warnich,2005). These can be highways (sometimes via different routes), rail links (high-speed trains, intercity lines, local trains or trams), separate bus lanes, cycle paths, canals, short sea connections and air connections at the same time encompasses things like ICT infrastructure, power lines and cables as well as pipes for drinking water, natural gas, crude oil, electricity and sewage (Priemus, 2003). Axis evolve from simple transport routes through to fully-fledged economic. Not all Axis are intended to become economic Axis, but intermediate Axis (trade, freight, industrial, agricultural, etc.) also contribute to increased economic activity. (Beer,2001)

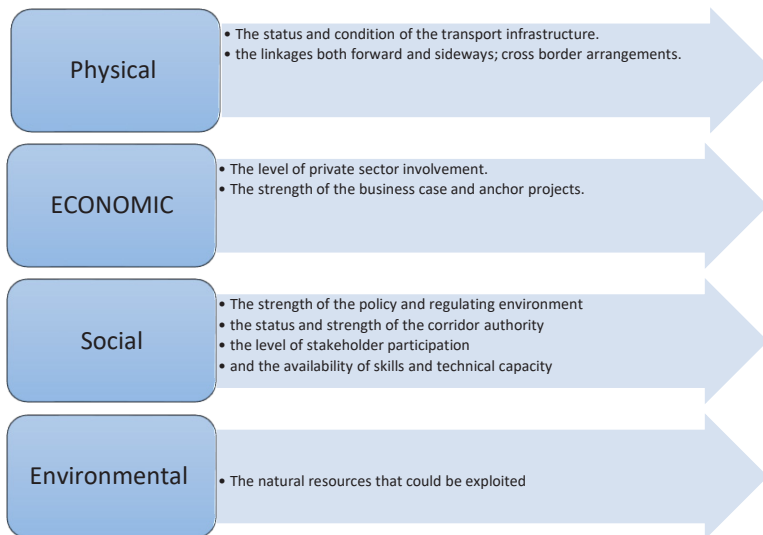


Figure 3: The major characteristics needed to be in place for a successful Axi to achieve its objectives (Hope,2015)

Evolutionary stages of development Axis (Mulenga,2013).

Physical development

- Development of transport policies
Strengthening the physical facilities needed for efficient transportation and trade by establishing and revamping transport links, improving the quality of infrastructure, increasing carrying capacity, and dealing with related safety issues.
- Support to Axis planning
Upgrading infrastructure associated with priorities such as rural agriculture, agroindustry, and tourism; encouraging multimodal structures; and upgrading border areas.

Logistical development

- Support to regulators
The right logistics can harmonize Axis policies, regulations and institutions, moving people and goods more efficiently and facilitating storage, warehousing, trucking, insurance and freight management, and related services.
- Support to Axis agencies
cross-border trade agreements; simplifying, standardizing and harmonizing immigration and quarantine procedures; promoting information and communication technologies; and establishing a logistics centre.

Economic development

- Trade facilitation
Investments in areas such as agroindustry and manufacturing, natural resource-based enterprises, small-scale industries, trade (including planned roadside shops), tourism (rest houses and hotels), schooling, and health facilities, all located near the Axi. Other interventions might include the promotion of innovative trade techniques such as fair-trade products and investment forums, again close to the Axis.

- Arranging investment forums and market business opportunities

The socio-economic development stage might also market business opportunities in key industries; establish special economic zones where appropriate; publicize investment policies, rules and regulations; offer micro-financing; implant special measures for approving business licenses efficiently and effectively; and address other infrastructure deficiencies, such as inadequate water and power.

Integration of cross-cutting issues

- Environmental concerns.

Environmental concerns can be addressed in a commitment to sustainable development and the use of mechanisms to protect the environment.

- Institutional development of governments and Axis agencies Institutional capacity building draws on:
 - human skills development;
 - changes in organisations and networks;
 - changes in governance/institutional context to remedy human resource constraints and enhanced service/product delivery in public and private sector organisations.

- Social development, working with communities

The social issues that affect Axis development are public awareness, trans-boundary diseases, social programs and traffic safety.

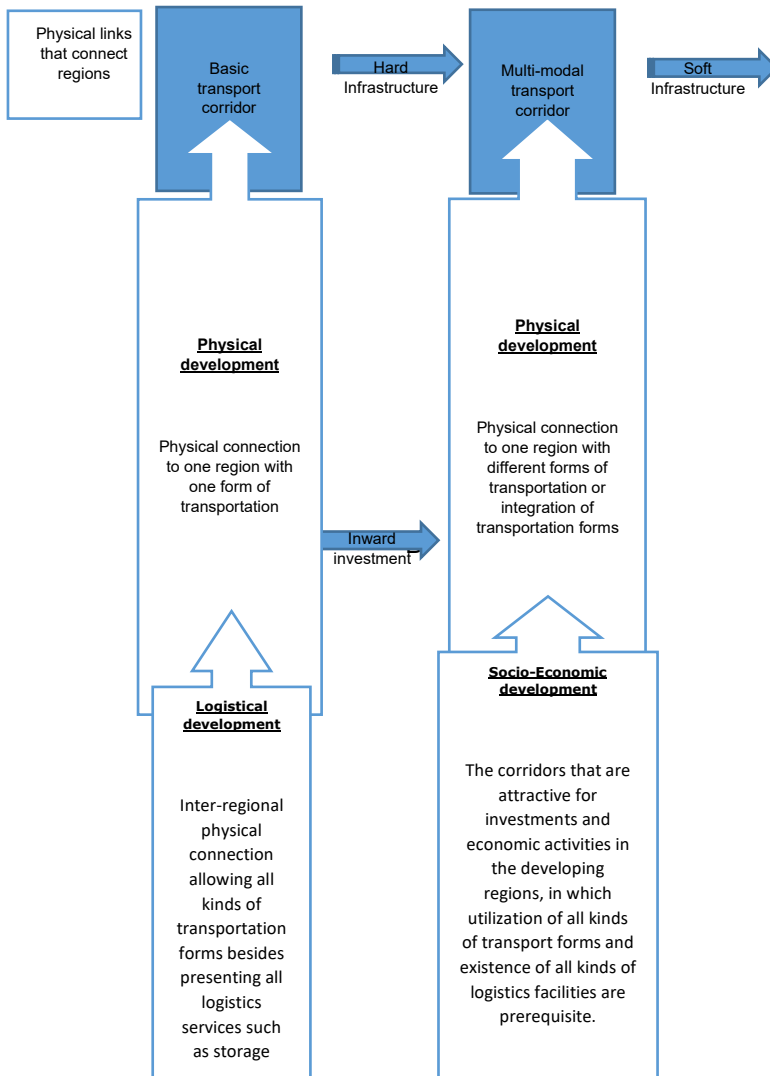


Figure 4: Stages of Axis development and possible areas for DFID intervention (Keser,2015)

The role of development Axis (Mulenga,2013)

Economic Role

- Development Axis link areas of supply and demand which enhance trade and economic opportunities.

- Development of economic Axis, as opposed to development of growth centres, recognises the wider economic trends of regionalism and globalism.
- The evolution of a transport route into a transport Axis, thence a trade Axis, and eventually an economic Axis involves cycles of improving hard and soft infrastructure

Physical Role

- Development Axis need a supportive transport network which facilitate the full development potential of adjacent land, therefore, accommodate momentum to urban restructuring initiatives.
- Development Axis increase markets to promote growth through higher densities, increased visibility, increasing access to facilities and amenities.

Urban Role

- The infrastructure network functions as the basis for the directions of future urbanization for residential and work activity. This definition is related to the aim of supporting public transport infrastructure. Axis have a considerable impact on spatial developments and spatial patterns. Especially areas through which large volumes of passenger and freight transport pass are attractive for the location of companies. This would lead to urbanization in places located between present urban centres, starting with some sort of ribbon development, and then giving way to new urban growth poles. Spatial policy is playing an important role.
- New urban communities' establishment in the desert states aims to open development Axis away from the housing zones, in which these new urban communities' projects aim to advancing the economic rate with a fast rate, focusing on the optimal usage of resources and natural wealth and creating a better environment for new residents. - Economic activities integration consider as a

prerequisite so as the new society do not depend on just one economic activity.

CITIES ON THE AXI DEVELOPMENT STRATEGY

The new cities development strategy based on a various element of economic, urban, social and population attraction development which aims to the coordination between these different elements for the optimal utilization of available resources through a single system.

Urban Development Strategy (Elawadi,2006)

This strategy aims to move from the current inhabitant areas to another one with a useful potential for urbanization, in which urban development means to improve the environment and provide the basic needs for housing, work, and community services, and elements of communication and infrastructure networks, taking into account the social values and cultural standards.

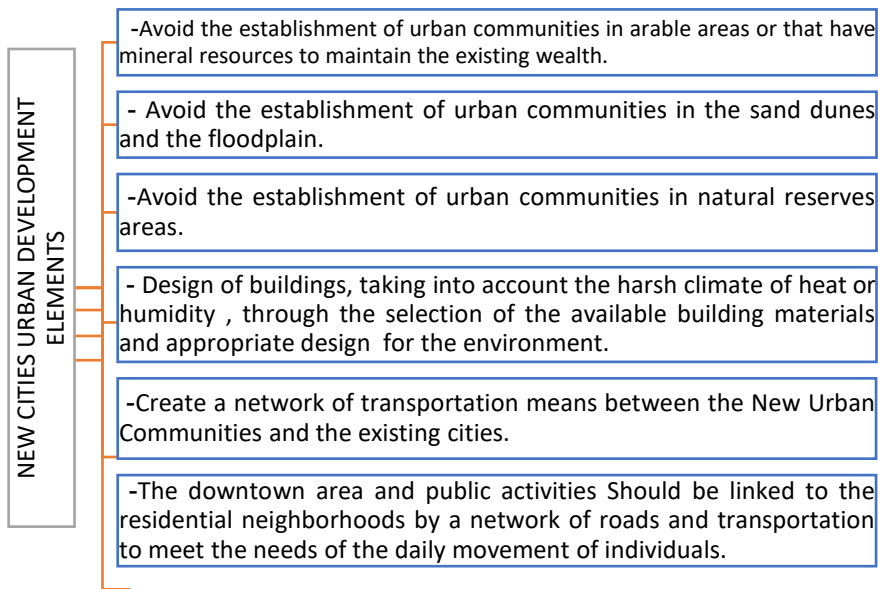


Figure 5: New Cities Urban Development Elements

The importance of urban development because it occupies the first place in terms of the investments volume, also it has a significant interest within the community.

Economic Development Strategy (Abbas,2007)

The economic development strategy cannot be separated completely from the strategies, but it has an active role in supporting the development process, as it includes elements that produce goods and services, such as natural resources, land, capital, means of production, cultural values, technical knowledge, organization, work, skills and techniques of individuals, industry and its Regulations.

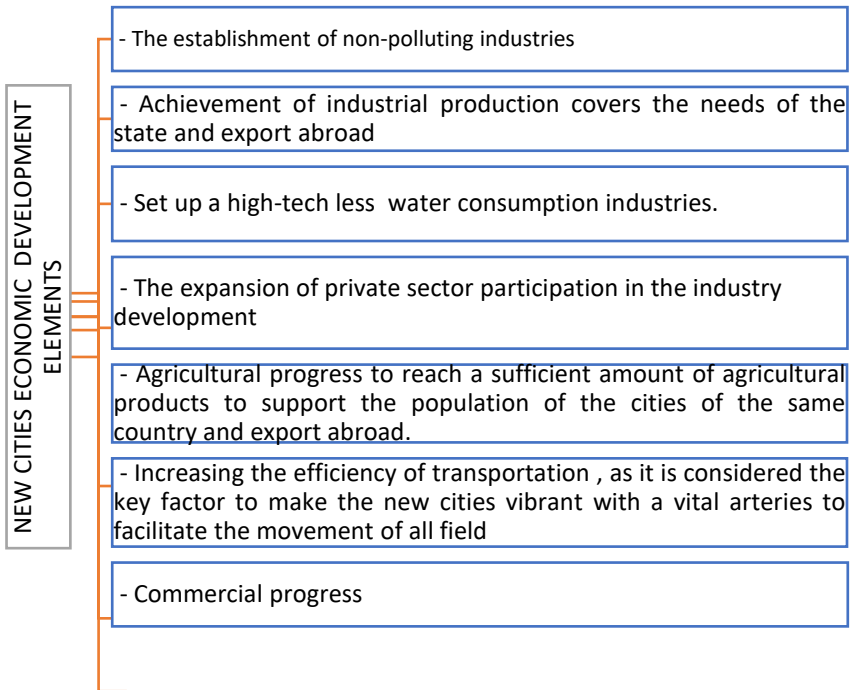


Figure 6: New Cities Economic Development Elements

Population attraction and Social Development Strategy (Abbas,2007)

The process of population attraction considered as a central axis of the development process, because Without the people there will not be development, and this process is a part of the social dimension, which is in turn one of the basic and vital components for the development of new cities, because of its characteristics that seems very complex, such as local features and behavioural standards for prospective society residents.

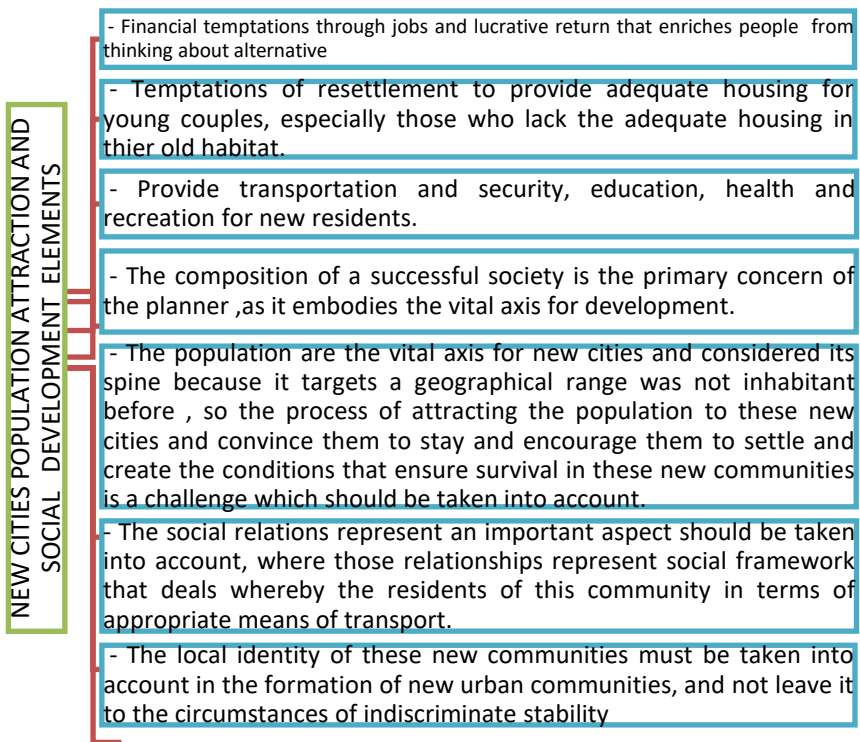


Figure 7: New Cities Population attraction and Social Development Elements

Table 1: Development Corridor Strategy Properties

DIMENSIONS		PRINCEPLES	STRATEGIES
Physical Axis	Infrastructure	Multi-modal transportation network	Highways (via different routes)
			rail links (high-speed trains, intercity lines, local trains or trams)
		Services and Facilities	Water line, Telecommunications and electricity links
		Trade Flow	Freight flow through the Axis
			Easy access and the flow of goods and people between countries Border
	Cross Border Arrangements	Reduced cross-border bottlenecks by providing a one-stop border control procedure	
	Urban Axis	Cities on the Axis development	Sustainable Tourism
			Sustainable Buildings and Construction
			Education for Sustainable Consumption
			Sustainable Lifestyles
Innovation & Process	Public participation		
	Stakeholder Participation		
	Axis Authority		
	Political Support		
Economic	Private Sector participation		
	Enhance the local Freight flow		
	Trade exchange		
	Magnet point for employment in various fields		
	Business Case / Projects and Linking economic strength		
Environmental	Efficient resource use	Re-use of materials	
		Agricultural Reclamation	
		Reduction of industrial waste	
	Renewable energy	Using wind and solar energy	

	Healthy ecosystems	Providing green areas and open spaces
		Eliminating pollution in water, air, and land.

THE MAPUTO DEVELOPMENT AXIS (CSMI, 2012)

The Maputo Axis is a transport Axis that connects South Africa’s Gauteng Province to Mozambique’s Maputo port. The Axis became a reality as a result of coinciding developments of infrastructure, including the upgrade of the Maputo port and the development of the N4 highway in South Africa. This, along with the existence of established subsidiary Axis to bordering South African provinces, and indeed also to neighbouring countries, makes the Maputo Axis one of the most ambitious initiatives undertaken within the Southern African region.

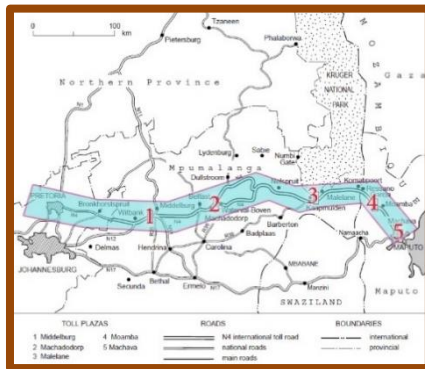


Figure 8: shows the Location of the Maputo Development Corridor

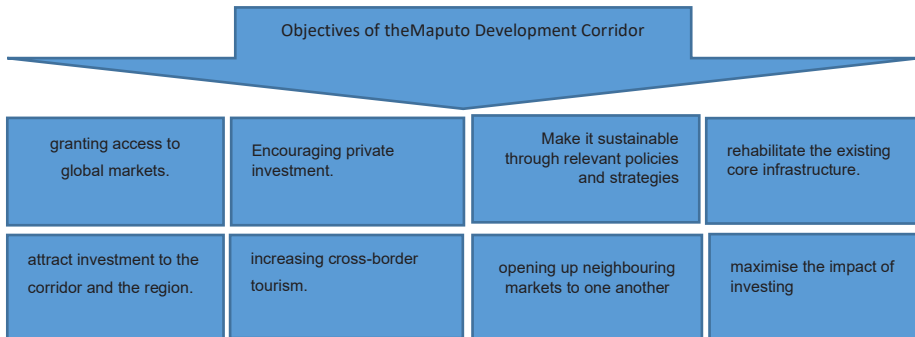


Figure 9: shows the main Objectives of the Maputo Development Corridor

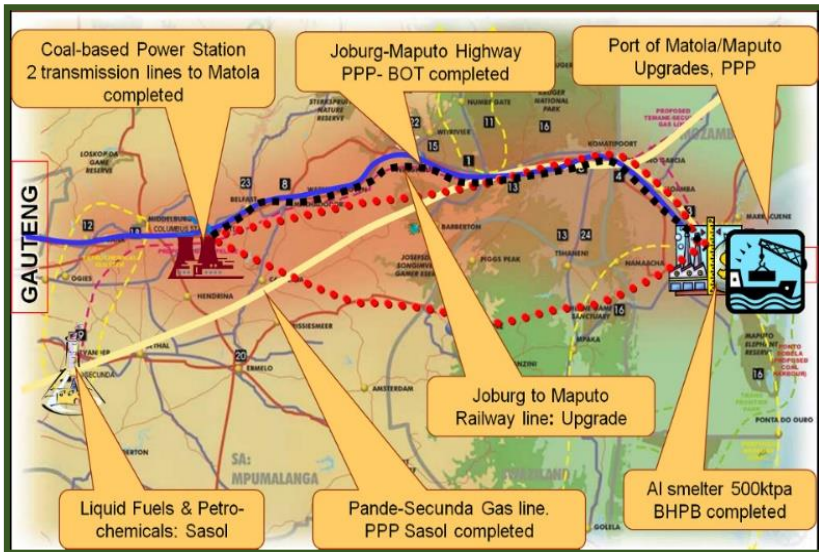


Figure 10: Map Showing the Extent of the Maputo Development Corridor. The aim of the MDC was to establish developmental alliance between the Maputo port and the Gauteng province of South Africa.

Table 2: Development Corridor Strategy Properties

D	PRINCIPLES	STRATEGIES
Physical Axis	Single Toll Road (The N4 from Witbank to Maputo)	Development of the N4 highway connecting southern Mozambique and South Africa attracts investment to the Axis and region, maximise social development, employment opportunities and the participation of historically disadvantaged communities.
	Maputo Port	<ul style="list-style-type: none"> Maputo port was rehabilitated, developed and managed by the Liverpool's Merseyside Docks and Harbour Company, an international association which improve the facility.
	Telecommunications, Electricity Links and a Sub-Station	<ul style="list-style-type: none"> The electricity and telecommunications lines were complimented by the building of a new sub-station next to the Mozambique Aluminium Smelter (MOZAL) project in Maputo. Furthermore, these lines have led to industrialization in Maputo through the establishment of the MOZAL smelter as well as the creation of an industrial park and other investments.
	Railway Links to Maputo	<ul style="list-style-type: none"> The Railways network comprising of main lines from Maputo Port to Zimbabwe (Limpopo Line), to Swaziland (Goba Line), to South Africa (Ressano Garcia Line) furthermore, the South Africa's rail service provider currently runs the whole line between Maputo and South Africa hence providing importers and exporters with a seamless transportation routes.

Urban Axis	• One-stop border facility	To facilitate easy access and the flow of goods and people between South Africa and Mozambique, the Komatipoort/Ressano Garcia Border post between the two countries were upgraded.
	Sustainable Tourism	– the main objective is the implementation of activities that promote sustainable tourism, providing supporting tools and existing initiatives that may inspire pilot projects and good practice in other countries. The Task Force focuses on three main topics: tourism and climate change, biodiversity, and protection of cultural and natural heritage.
	Sustainable Buildings and Construction	The main aim is to develop local and national policies and legislation to secure the sustainability of construction use and maintenance of the built environment. The Task Force addresses the question on how public policies and legislation can promote energy efficiency, energy savings and use of renewable energy in the built environment. The activities include mapping out the baseline condition and internal exchange of best and worst practices.
	Education for Sustainable Consumption	The objective is to achieve progress in introducing sustainable consumption and production issues in particular into formal curricula with the aim of supporting the Marrakech Process through initiatives, activities and pilot projects in this sector. A special focus of the Task Force is on the Mediterranean region, sharing its experiences globally.
	Sustainable Lifestyles	The main goal is to develop and support the implementation of sustainable policies and projects that enable the adoption of sustainable lifestyles. The main activities are to support the implementation of projects at the sub-regional and national level; to develop tools and capacity building on education and communication for sustainability; and to assemble results and inspiring examples on sustainable lifestyle
Innovation & Process	Stakeholder Participation	Well organized and involvement from private sectors and less organized input from CBO's and NGO's.
	Axis Authority	Strong authority with power to move project forward. Strong Project Managers appointed on both sides
	Political Support	Supported by South African and Mozambican governments via the respective transport Ministries and Heads of State.
Economic	Private Sector participation	The corridor is a success because of private sector investments (\$5billion). PPP was essential in ensuring success of this corridor.
	Enhance the local Freight flow	Easy access and the flow of goods and people between South Africa and Mozambique, the Komatipoort / Ressano Garcia Border post between the two countries were upgraded. Reduced cross-border bottlenecks by providing a onestop border control procedure. South Africans no longer require visas to enter Mozambique

	<p>Magnet point for employment in various fields</p>	<ul style="list-style-type: none"> • Aluminium Plant • The world's third largest Aluminium plant, the MOZAL plant developed near Maputo • was a joint venture between South Africa's BHP Billiton and the Industrial Development Corporation. • Natural Gas • The South Africa's SASOL and Mozambique's ENH developed the Pande/Temane • gas field. • Industrial Park • The development of the Beluluane Industrial Park which is a 600-hectare industrial free zone which attracts a combination of foreign, regional and local investors keen on heavy industry, manufacturing and hi-tech businesses. • Iron & Steel Complex • The development of Maputo Iron and Steel Plant through the use of magnetite obtained from Phalaborwa, in South Africa and natural gas from the Pande fields north of Maputo has being assessed.
	<p>Business Case / Projects and Linking economic strength</p>	<p>Strong business case with added local economic development, SMME development. Duvha Power Station, Mozal Aluminium, Sasol Pande gas pipeline.</p>

THE WESTERN NORTH COAST AXIS-EGYPT

The Western North coast region is blessed with cultural heritage, monuments, attractive shores, environmental reserves and sceneries that can serve as the basis for tourism development. In addition, the region has potentials for growing high-value crops; fishing and the reduction of power.

The strong backing and support of Egypt's political authorities for the western north coast axis to accommodate the predicted population growth through the next coming years inspires to improve these development strategies to achieve the desired objectives leading to the futuristic visions.



Figure 11: Map Showing Western north coast Region



Figure 12: Western north Coast Axis context

Table 3: Western north Coast Axis physical Strategy

DIMENTIONS		PRINCEPLES	STRATIGIES
Physical Axis	Infrastructure	Multi-modal transportation network	Road network (Costal road-Wadi El Natron road-el Betrol Road Alexandria Cairo road)
			The proposal of Dr Farouk El Baz Development Corridor
			Bourq El Arab airport
			El Dabaa airport
			El Alamein railway
			Power stations
			Water supply network
			Communications network
	El Alamein port		
	Services and Facilities	Opportunity for natural gas line	
Trade Flow	Strong trade flow due to the existence of El-Alamein port.		
	Providing opportunities for cities on the corridor to have a logistic outlet to enhance the trade flow commercial exchange.		

DEVELOPMENT STRATEGY FOR THE WESTERN NORTH COAST AXIS

The study area extends 465 km along the Mediterranean. It is part of the Governorate of Matrouh. It starts from the City of El-Hamam to the east to City of El-Salloum to west at the Egyptian-Libyan international borders. The width of the study area is 90 km to the south. The area of the region under investigation mounts to 21 thousand km². The planning team divided the region into three homogeneous sectors suitable for economic activities: tourism, agricultural production, and pastoral).

The proposed plan aims to settling five million inhabitants or more in this region through a scheme for integrated development in the three sectors by generating job opportunities to attract newcomers outside the Nile Delta and Valley and avail needed services to the locals.

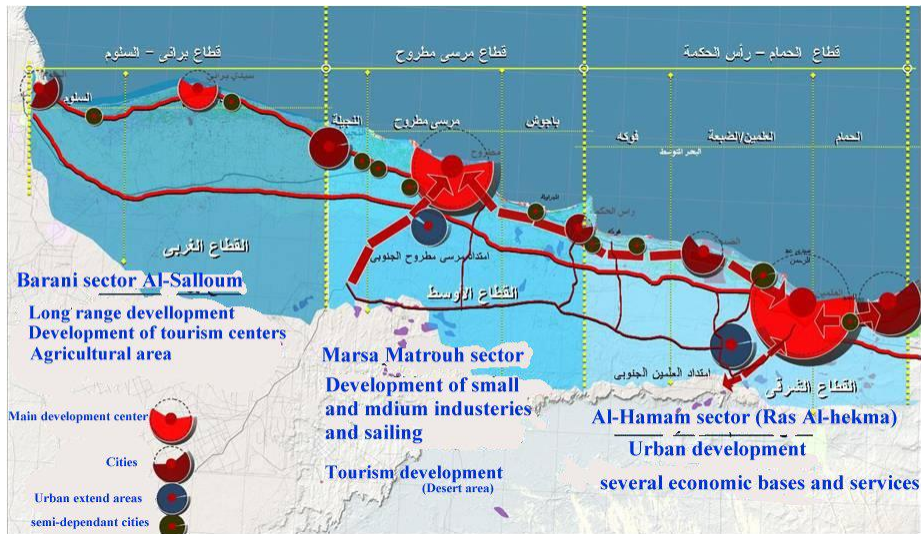


Figure 13: Development strategy for the Western north Coast Axis

WESTERN NORTH COAST AXIS URBAN STRATEGY

New Borg El Arab City (Helaly,2008)

The city of New Borg El Arab considered one of the first generation new cities that the new urban communities' authority started in its creation according to the Presidential Decree No. 506 of 1979, in which it is considered as one of the independent economic entities, that the need for its establishment emerged in the late sixties and turned into

executive plans at the end of the seventies and its construction process began at the beginning of the eighties. The mission statement of New Borg Al-Arab is to create an urban environmental entity that is self-contained—self-dependant—economically, socially, to absorb population migration to Alexandria and the over-population of Behaira, and also, as a service centre to the coastal area and a regional centre to West Delta in general.

The city has a total surface area of 200 square kilometres, of which the built area occupies 102 square kilometres. It is comprised of ten residential districts and five industrial districts, each residential district containing eight to nine neighbourhoods. The central hub of the city, in which the main services are concentrated, is situated in the middle. The city is planned to absorb 570,000 inhabitants (Before Modification) and provide approximately 160,000 employment opportunities, with 122,000 housing units.

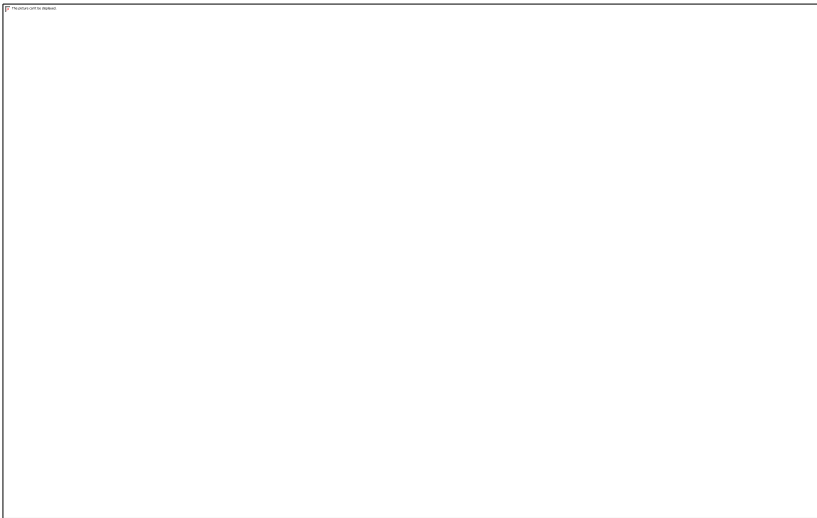


Figure 14: Map Showing Borg ElArab New City

The Housing Ministry has completed Borg El- Arab city new scheme until 2032, which aims to reach the residential area to 29,919 acres, and the housing space and its services to 11,553 acres and the population to 750,000 people, this new scheme includes the establishment of 16 new projects until 2017. This scheme states a number of projects that will be a priority until 2017, which includes the Technology valley, industrial free zone, logistics zone, the dry port and

the customs office, crafts and small – scale industries complex, workers housing, sugar beet factory, business hotel and training centre, in addition to the separation of the industrial zones entrances from the residential area and the establishment of a mass transit station. (Metwally, 2016). The planner put development strategy based on achieving several goals: (Elshafei, 2014)

- Reduce the growing population pressure on the region of Alexandria “North Delta” and the adjacent urban areas of the city.
- Increase the national income through an independent economic base and increase job opportunities and meet the growing demand to industrial projects lands.
- Planning of an independent city so that after a generation or two, about half a million people can stay and work out.
- This city created to be a radiation centre for the development of the northern coast of Western desert.

Strategic problems facing New Borg El Arab City: (Metwally,2016)

- Economic problems
- Environmental problems
- Housing and settlement problems
- Urban Structure and growth problems
- Urbanization and infrastructure problems
- Regional framework problems
- Board of Trustees problems
- Non – governmental organizations problems
- Industry labour problems

But the city of New Borg El Arab didn't achieve the goals required from its establishment despite it passes by several attempts for reviving, such as the establishment of the Army Stadium and the idea of turning the city into a major sports city and establishment of Borg El Arab international Airport to serve the coastal region and attract people to this area & many others ideas but all failed to revive this city leaving it as one of the UN-INHABITED New Urban Communities.

CONCLUSION

The development axes play an important role in the sustainable development of the cities placed on, in addition to provide new development potentials creating new urban communities, as well as

those cities in turn activating the role of the Axis. It is a reciprocal relationship between the cities and the Axis while the Axis contributes at the economic development at the same time the city achieves and important role to enhance the Axis which works as a catalyst for urban development. Thus, the western north coast axis catalyst will motivate the urban development for Borg El Arab new city.

Table 4: The Role of Egyptian Western North Coast Development Axis reviving New Borg El Arab City

DIMENSIONS		STRATEGIES
Physical Axis	Transportation	The Possibility of Linking the city with the surrounding communities & the north coast resorts
		The Possibility of Linking the City by the proposed International road with ElAlamein & Marsa Matrouh in the west and by the Existing international Road with North Delta.
		Linking the city of new Borg El-Arab by railway with Alexandria city in the east and with Cities of ElAlamein and Morsa Matrouh in the west. which pushes the economic development process of the city
		Strengthening Linking the City with Borg El-Arab Airport by roads and railway
	Urban Structure	The Connection Through Coastal and international Roads and Railway for Passengers and Cargo.
		Provides the Possibility of economic independence and Provides Multiple Activities economic base
		Easy Access Through the Airport and Seaport Of Alexandria
		Maximize the city's Competitiveness
		Attracting different regional services (touristic - educational-sports)
Social Axis	Motivating population mobility to Borg El-Arab new city.	
	Expecting High Rate of Emigration.	
	Expecting improvement of Characteristics of its population to be similar to Alexandria Population Characteristics.	
	Attracting mixture of socio-economic classes.	
	Expand job opportunities that support upward economic mobility, offer supportive workplace policies, and pay living wages so that all working people and their families can afford basic necessities.	
Economic	Tourism	Easy access through Borg Al Arab airport, as well as the proposed International highway and express train from Alexandria.
		The possibility of turning the city in to a regional center for tourism and touristic services for north coast resorts.
		The possibility to be an extension of the activities and touristic services from Alexandria.
		The possibility of integration with the stadium and the Olympic city.
		The possibility to be an extension of the activities and touristic services from Alexandria.
		The region surrounding Borg El-Arab new city is rich with touristic resources, whether archaeological, natural or environmental.
	Industry	The Possibility of linking the city and the Western North coast axis Economically
		Create Opportunities for industry through expanded production chain

	The Possibility of Attracting Industrial Expansions zones in Alexandria to the City Because of the urban and environmental deterioration in the existing areas
	Possibility of localization of the global Industries & free zones & logistics
	Possibility of linking the Industrial zone of the city with berg & mob airport by railway
	The Growth of Scientific & Research Activities, allow the Expansion of Technological Industries.

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PROCESSUAL AND TYPO-MORPHOLOGICAL READING METHOD.THE CASE OF BIRGU, MALTA.

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ABSTRACT

This paper focuses on a precise analysis method about the study of the urban form, through the typological and processual reading of urban fabrics and buildings that compose it. Studying the urban transformations that took place during the course of time, in a central Mediterranean nodal place, allows us to understand the ways in which the contributions of each new culture have been introduced and involved in the accumulation process, material and immaterial, that is typical of an isolated/insular territory.

The island of Malta, for its particular position, has always been a singular point, a crossroads of cultural exchanges in the Mediterranean. At the same time, isolation contributed to maintaining and conserving the characteristics of places and materials that man transformed. The interest of this research is about the way of transfer and sedimentation of constructive experiences that merge between them and finally find, in the island, a new place of experimentation.

The case study is the city of Birgu, located in the Grand Harbor of Malta. Reconstructing the formative phases of the city means investigating the way in which the indigenous constructive culture has accepted external needs and habits, merging into a new urban unity. It is interesting because it presents singular episodes related, for example, to the development and adoption of the *Palazzo* type inserted into the masonry urban fabric. It presents element of interest for the urban changes caused by the bombardment trauma occurred during the World War II too.

Therefore, through the reading of the formative process of routes/paths, through the identification of urban polarities, through the recognition of the building typology and finally through the study of the fusion and transformation process of urban fabrics, it is possible to prepare a base of knowledge useful to the future project, to the successive and physiological transformations that the city will necessarily have to undergo.

KEYWORDS: Urban Form, Process, Reading Method, Typo-Morphological, Malta.

INTRODUCTION

The contents of this essay are part of a wider research on the relationship between building types and urban fabric, concerning the area of the Grand Harbur in Malta. The analysis method is related to the typo-morphological school: the 'operating' history, the history that helps to compose the basis of the events through which the community takes shape, gives form to the architecture that it produces. The formation of a city, and in particular of a Mediterranean city, cannot be separated from the study of the main historical events that have characterized its phases of evolution. The historical events together with the data recovered in different archives, relating to the buildings and the transformations they have undergone over time, allow the conjectural and logical reconstruction, instrumentally and appropriately divided into different phases, of the city formative evolution. The application of this method to the city of Birgu in Malta produced interesting, albeit partial, results which try to hypothesize the formative phases of this city.

HISTORY OF BIRGU, VICTORIOUS CITY

The existence of the 'Borgo a mare' (Castrum Maris) is known as early as before 1530, the date of the arrival of the Knights of the Order of St. John in Malta, as a fishing village and also as a small port city. Following the arrival of the Order on the island and the conspicuous fortification and rebuilding works, the village was renamed 'Città Nuova', then called 'Vittoriosa City' following the events of the siege of the Turks in 1565.

Birgu is spread over a peninsula just 800 meters long and has a maximum width of 400 meters. Without considering the area of the fort, one could associate the shape of the promontory of this settlement with an isosceles triangle. To the north, on the Manderaggio side, it faces Calcara Creek, while to the south the St. Lawrence Valley overlooks the Dockyard Creek. The highest points of this area are about 25/30 meters above sea level (St. Philip Hill and Cavalier Hill).

The formation of one of the oldest cities in Malta on a small peninsula is witnessed, since ancient times, by the presence of the 'Forte a Mare', later called 'Forte Sant'Angelo', and is suggested by the hidden position inside a natural reservoir, ideal for sheltering galleys, sailors and merchandise. The Arabs, who called this port Port of the Galleys, were the first to build on the most extreme point of the Birgu peninsula, sheltered by the natural limit of the sea, a castle with

stone blocks obtained from the remains of an ancient Phoenician temple dedicated to the deity Astarte, later dedicated to Juno by the Romans. The castle itself will be known as 'Castrum Maris', 'Castello a Mare' or 'la Rocca'. The village, sheltered from this fortification, was named the 'Borgo del Castello', hence the name Birgu, which indicates a city or neighborhood built near a guard castle (from the Maltese Borg). The peculiarity of the promontory on which the castle stands resides in its ability to control a wide visual range of the harbour invasion system for the sighting of possible enemy incursions.

The scarce attention of the ancient authors to the events that involved this settlement, at least until the arrival of the Knights, helped to consolidate in the historiographical tradition the opinion that this place was a fishing village built on the slopes of a large and imposing fortification, in which the population took refuge in case of pirate raids. In fact, beyond the objective lack of documents that can testify and verify this news, it is clear that this is the most protected and therefore adequate area of the whole island for ships entering the port. From archaeological finds it is thought that this area was inhabited long before the Romans conquered Carthage and the Maltese archipelago during the Punic wars of 216 - 218 BC.

All historical information prior to 1530, documented and related to this settlement, actually concerns the fort and its castellan, imposed from time to time by the dominant dynasties, and the diocese of the village: many lords of the castle were responsible for the security of the Great Port until the arrival of the Knights.

After the defeat of the Arabs (in 1090) by the Normans, and then with the re-conversion of the population to the Catholic religion, the church dedicated to the Mother of God and then to the Nativity of

the Virgin was built, carved into the rock of the fort. According to some historians, this church was one of the oldest in the whole island, the first diocese in the Maltese islands together with that of Mdina, the ancient capital. During the period of Angevin domination substantial works were carried out inside and outside the castle (and above all on the church of Santa Maria and Sant 'Angelo).

After the occupation of the islands by the Aragonese in 1283, the church of San Lorenzo a mare, dedicated to the Aragonese martyr saint, subsidized by the Spanish kings, was built by the Spanish sailors. In this period the fort was renamed 'di Sant'angelo', perhaps in honor of the Count Angelo de Melfi who had ruled the island since 1352. Furthermore, the population reaches 4000 inhabitants and the expansion of the Borgo begins, probably facilitated by the strategic

position of the port and by the shelter that offered the fort in case of pirate raids. Inside the castle was built the house of the castellan, in Sicilian-Norman style.

When Malta passes to the Catalan-Aragonese kingdom, from 1392 to 1395, the Maltese baronial families oppose the new sovereigns; from the fort of Birgu the castellan opposed to the new kingdom, but the last resistance to the new domination are conquered. Fernando de Podio becomes the new lord of the castle. The chaplain of Castrum Maris was assigned to the chaplain of King Bernard Ginestre, while the governor of Sicily had the count Antonio Ventimiglia imprisoned in the fort of Birgu, where he died in 1413. In 1423 a rebellion started in Gozo and spread throughout the island, in Birgu the castellan Monroy and his wife remain stranded in the Castrum Maris, but in 1427 the siege of Monroy ends. From 1430 the Castellania del Forte belongs to the de Nava family. The last Aragonese lord of castes 'de Nava', who built a chapel dedicated to Saint Anne, built inside the fort before the arrival of the Knights, had to leave it to the Order's Grand Master L'Isle Adam, who on 26 October 1530 arrived in Malta and took up residence in the de Nava palace inside the Fort.

Seven years after the expulsion from Rhodes by Suleiman the Magnificent, the Order of the Knights of St. John settled in the Maltese islands on the initiative of Pope Clement VII and Emperor Charles V. According to many historians and writers members of the Order and not, among which Bosio, Abela, Quintinus and Slade, the conditions of Malta at that time were miserable and bleak and the lifestyle of its inhabitants was compared to the troglodytes: "placed mainly in poor huts, in need of almost all the things necessary for life, cooking their food with dried manure and like the knights expressed in their Report, certainly excited by the fresh remembrance of their fertile Rhodes, whatever they observed, caused them disgust". In fact, Malta appears to many Knights as "a rock in the middle of the sea, far from help and every comfort". According to a Maltese writer of the nineteenth century these 'assertions' were caused not only by the hostility of some French members of the Order towards Charles V, who wanted to show that the donation of the archipelago to the Knights was not of any value, but also by the inability of the Knights to resign themselves to the idea of never returning to Rhodes.

The Clients report that Malta had a single large fortress opposite the harbor mouth, Forte Sant'Angelo, which was half in a state of decay. Although the castle occupied a high position, it could easily be

struck and conquered by the side of a small village inhabited solely by navigators. The fort, which had about 40 rooms, had been identified in the area of the Collacchio for the Knights, within which the Auberges of the various 'languages' could have been placed. But it was too small, so it only became the seat of the Grand Master.

According to Jean Quintin, the settlement of Birgu was dug into the rock, a practice that would be consolidated with the Arabs: this is conceivable through a comparison with Sicily, where the greater availability of documentary material and better archaeological research have contributed to establish the existence of different troglodyte communities with which the Normans came into contact right at the beginning of their Sicilian adventure. Also, in Birgu, outside the walls of the Castello a Mare on the Porto Grande, where the Knights of St. John established their headquarters in 1530, there were fields to harvest among the buildings, whose misery caused dismay to Jean Quintin of which he wrote in 1536.

The historical sources agree in affirming that in 1530, at the arrival of the Knights, Birgu is nothing but a small village of small houses aggregated along the path parallel to the coastline reaching the walls of the small fort, characterized by small winding roads. The Knights of St. John preferred the ancient capital Mdina for their settlement, but this important center was not coastal and therefore would not have allowed them to carry out the tasks proper to a maritime military order and the role of defenders of Christianity in the Mediterranean.

The modernization of the village, which however maintained its structure, began in 1531: the first construction ordered by the Grand Master was the walls that would have enclosed Birgu, flanked by small ramparts; the Grand Master also lowered the moat between the peninsula and the fort. Very important was the positioning of the shelter of the war galleys on the seafront that goes from Forte Sant'Angelo to the church of San Lorenzo, the first attempt to develop the waterfront. In these early years, the hospital, armory, Castellania and many Auberges were built. The Knights acquired the existing buildings and transformed them enriching the facades and modifying the interiors.

Between 1530 and 1571, the year in which the Knights moved to Valletta, Birgu underwent several changes: the church of San Lorenzo became the conventual church of the order; the convent of San Domenico was used as a parish church until the church of San Giovanni was built in Valletta; Piccini and Ferramolino were called from

Italy to restore and fortify the castle of Sant'Angelo and the Old City; the construction of the Castellania on the main road began, then transformed into the Palace of the Inquisitor in the current conformation dating back to 1767; the foundation stone of the Infirmary was laid, in front of Monte San Salvatore, which from 1652 was transformed into the convent of Santa Scolastica; the weapons depot was built, which in 1880 the English turned into a naval hospital; the Bishop's Palace was built.

The request for property was in excess, as the Knights from Rhodes had also brought servitude and workers with them and for this reason the Court of the Office of the Houses was established with the task of regulating the rents of houses and shops. Bosio (Bosio, 1602), in a paper of the time, asserted that there were several dwellings, but not sufficient for the whole population and many people were forced to settle initially in tents. According to another document of the time, when the Knights arrived at Birgu they found only 150 houses, but in just 3 years more than 500 houses were built on the peninsula outside the walls. The demographic increase placed the need to find a new city: L'Isla, later known as Seneglea.

In 1565, from May to September the Turks attacked Malta as the island hosting the Gerosolimitano Order, in order to eliminate the "threat" of the Knights who opposed the Saracen raids and create a base for the invasion of Italy. This war event, known as "The Great Siege of Malta" and widely documented by the authors of the time including Matteo Perez d'Aleccio and Francisco Balbi da Correggio, took place between the Grand Harbor and the port of Marsamuscetto. Birgu and Forte Sant'Angelo suffered several attacks. In "The Great Siege: Malta 1565" E. Bradford says that following the siege most of the village was demolished, and the narrow and winding streets were full of damaged buildings "not a single house was free of damage" and rubble. Even the walls built at the arrival of the Knights suffered several damages from the bombings of the Turks. Moreover, for defensive purposes, the Knights themselves demolished "everything that was outside the walls of Birgu and Mdina", in order to allow any shelter to the Turks who were besieging the island. At the end of the conflict, won by the Knights led by Grand Master Jean Parisot de La Vallette, the three cities of the Grand Harbor were renamed Civitas Vittoriosa (Birgu), Civitas Invicta (Seneglea) and Cospicua (Bormla). The sword and dagger of the valiant Grand Master were kept in the Greek church located on the main path that connects the main door to the Fort, in memory of the events of this conflict, then stolen by the French when

they conquered Malta in 1798.

In 1800 the Maltese, rebelling against the French, invoked the help of the English, their rivals in the conquest of the route to Egypt. During the occupation phase by the English, Vittoriosa maintained the urban structure formed on the structure of the medieval city but, following the conversion of the Fort in a naval base, the entire seafront facing Senglea was redeveloped with an important project by William Scamp, which transforms the old Galee refuge into an imposing building: the Bakery. The city is transformed with the introduction of numerous palaces and churches; interventions are attempted to contain the situation of the degraded poor neighborhoods (in the area of St. Philip Hill, in the Mandraggio area and near the convent of San Domenico) and of the Jewish ghetto in the Via del Vecchio Palazzo del Governatore.

In 1940 the Dockyard Creek became an outpost of the Royal Navy, which is why during the Second World War the three cities and the surrounding port areas were the target of almost daily bombings by the Italian-German aviation from 1941 to 1943. As reported by Joseph Micallef in "When Malta stood alone", a detailed description of all the war events that affected Malta during the great conflict, there was very serious damage and a huge bloodshed. Much of the built-up area of the peninsula on St. Philip Hill, the Mandraggio area, the church of St. Anthony, part of the church of San Lorenzo, part of the Bakery, the Auberge d'Italie and the adjoining church of Santa Caterina, the old prisons are demolished or seriously damaged, because they are important places for the Royal Navy's activities. Most of the population that abandoned Vittoriosa and the other port cities during the conflict, never returned to the same place, but preferred to settle in new coastal areas further north, such as Sliema and San Julians.

After the end of the conflict, the Maltese government, thanks to A. Harrison and R. Hubbard, drawn up a report and a plan for the reconstruction of Valletta and the three cities heavily affected by war damage. This report is based on surveys of the existing conditions of a large circular area that incorporates the Grand Harbor and also analyzes its demographic aspect. An impressive figure that emerges is related to the population of Birgu which has always been exponentially increasing since the arrival of the Knights up to 1939. Furthermore, this important document reports the different proposals for reconstruction of the affected areas in a detailed manner, useful for understanding the transformations made since the 1950s on the

peninsula.

Despite the reconstructions of the second half of the twentieth century, the population density is no longer grown and still many houses in the Collacchio area are uninhabited and in a state of neglect. Recently all the Dockyard Creek has been the subject of the project "Cottonera waterfront" aimed at the recovery of the historic buildings of the area of the Three Cities and which led to the construction of the marina for "superyacht", the Casino, restaurants and some modern residences on the Vittoriosa pier.

FORMATIVE PHASES: HYPOTHESIS OF BIRGU URBAN FABRIC TRANSFORMATION

The hypothetical phases of Birgu urban formation over time have been reconstructed starting from the reading of the morphology of the territory and from the analysis of the urban fabric carried out on the cadastral map dating back to the period before the bombing of the Second World War. The study of the aggregate, and its temporal structuring, was performed on the cadastral.

The reference cartography was created on the basis of information obtained from documents coming from: archives of the CD Office and Public Works Department of the Maltese government, government offices that deals with public works in Malta; the Malta State Archive "Santo Spirito"; the "Valletta and the Three Cities" report written in 1945 by A. Harrison and R. Hubbard; the reliefs of the Cabreo (inventory of the assets of the great ecclesiastical administrations) carried out in 1734 for the foundation of the Grand Master Manoel of Vilhena; the Old Sheet Survey, the reliefs of the whole Maltese territory executed by the English school of military engineering Chatham for the War Department between the end of the nineteenth century and the beginning of the twentieth century; the surveys of the Land Registry, the recently established Maltese land register; some documents of 700 - 800 of the notarial archive; maps and surveys of the collection of the National Library of Malta; the surveys carried out during the internship in Malta in the housing units located in Triq Tramuntana.

The archive of the CD Office was certainly the most important source, as it provided detailed surveys of the demolished blocks and new alignments, with indications of openings and properties on every street front (almost like a land registry), with the reliefs of the paths that disappeared after the reconstructions and those of the blocks and paths still existing, with housing units and specialized buildings having

public function (schools, institutional buildings). The other archives mentioned were useful for finding reliefs of individual housing units and individual specialist buildings that were assembled and inserted in the reconstructed cadastral.

The final assembly was compared with the map compiled by Carapecchia in the 1700s, with historical maps drawn up in 1694 by De Fer and with images of the great wooden model, currently exhibited in a room of the Inquisitor Palace, executed at the beginning of the 19th century from Ruzer Calleya, citizen of Vittoriosa who at the time carried out surveys of the houses of the Borgo. We have also chosen to use this type of document because it reproduces an urban configuration preceding the subsequent events of the 1950s and, in this sense, it was very useful, despite the “three-dimensional” comparison.

Considering that the formation of a path can't be separated from the construction of its margins and starting from the recognition of the bands of pertinence, which tend to be constant along a path when it is built up around a certain time, verifying the orthogonality of the walls on the street front and comparing the “step” as a module coinciding with the distance between the walls of the area in order to identify the size of the “cell”, that is the fundamental unit of the structure of the urban fabric, it was possible to elaborate the hypotheses of formation.

The reconstruction of the first phase, dating back to the Middle Ages I, is distinguished by the recognition of a first path that, parallel to the coastline, runs along the Birgu peninsula and reaches the pole formed by the Forte Sant'Angelo. Comparatively to what is found in other urban contexts having similar typo-morphological characteristics and making use of logical considerations, it is possible to hypothesize that the fabrics settled on this path start from the proximity of the pole. This path could be identified as a ‘matrix path’ because it pre-existed the urban fabrics formation and, as conditioned by the morphology of the soil, it presents a curvilinear course having to mediate the need to overcome natural impediments with the need to be straight. In addition to this, two other spontaneous crossing structures can be recognized: the first, which tends to reach the small connecting port with Senglea (Mandraggio area) as little as possible, is located in the NE part of the peninsula and, recognizable in the next zone to the future sixteenth-century walls, it coincides with the current path defined by the *intervallum* located before the wall; the second, which partly runs through today's Triq Hilda Tabone, also influenced by (albeit not very accentuated) the morphology of the place, starts from the hypothetical

matrix path and, structuring itself in the lower-level part (ie the place that is conforms as a “saddle”), reaches the old port generating urban fabrics that has progressively hit the peninsula’s margins. Another route was probably to reach the Castrum Maris starting from the Cavalier Hill; in the initial part it could have coincided with the main viability of Birgu, known today as Triq il-Mina il-Kbira, and then, at today’s Ir-Rebha square (Victoria Square), a secondary road along the same height which bends towards the side of Calcara Creek, today’s Triq Santa Skolastika, and then continues towards St. Philip Hill, the current Triq il-Palazz l’Antik tal Gvernatur. Also, along this route, the presence of a fabrics aggregate near the fort was hypothesized.

The structure of the reconstructed urban fabric allows, moreover, to conjecture the existence of a further spontaneous path that was to branch out from today’s Triq Antika and head towards the ancient port of Mandraggio, crossing the area later occupied by the conventual complex of Santa Skolastika. To support this supposition, we could recall the historical sources that highlight the birth of the cenobitic structure of Santa Scolastica, initially used as a hospital and sacred infirmary, built after the arrival of the Knights.

Other routes, as represented in the table (Fig. 1) that describes the first phase of formation of the village, must have been formed even if, later, partly deformed or clogged especially with the Knights settlement who favored the transformation of the part next to the Collacchio with specialized buildings. These paths have been represented with dashed lines.



Figure 1: Birgu urban organism; formative phase 1: Medieval I.

The second formative phase of the Birgu urban fabric (Fig. 2),

corresponding to the medieval period II, sees the formation of two new paths that sprout from the Triq Hilda Tabone path which seems to acquire greater importance. The first is that route which, discarding the slope, flows into the distance parallel to the coastline (the current Triq Tramuntana); the other is the current Triq Il-Majjistral going back to the inclination of Cavalier Hill, along which the building is attested. In this phase the fabric is also consolidated along the paths of the Mandraggio area, up to the square Ir - Rebha which begins to reach the role of “node”, and towards the polarity represented by the Castrum (along Triq Santa Skolastika and Triq il-Palazz the Antik tal Gvernatur).



Figure 2: Birgu urban organism; formative phase 2: Medieval I

The further formation of built along the existing routes and the construction of new ones on others, describes the third phase (Fig. 3), corresponding to the structure reached by the village at the time of the arrival of the Knights. Most of the fabric of the Collacchio area and the area next to the Castle were presumably already consolidated, defining the blocks almost definitively. Other routes are born in the Marina area.



Figure 3: Birgu urban organism; formative phase 3: 1530 A.C., arrival of the Knights of Malta.

The fourth phase (Fig. 4), relating to the period immediately after 1530, describes the interventions carried out to favor the small town and the settlement of the Knights, whose brief stay before moving to La Valletta, as widely documented by historical sources, determined the radical mutation of the fabric through the definition of the traditional Collacchio. This was accomplished with a series of interventions that, while maintaining the original structure of the Middle Ages structure, strengthened the settlement through additional blocks and, especially, intervened to “geometrize” those close to the central area (Collacchio). In particular, the following buildings were built within this area: the Bishop’s palace; the University; the residence of the chaplains and the armory. The conventual buildings of San Domenico and Santa Scolastica were born marginally to the existing urban structure and a straight path (of restructuring) was formed in the area of St. Philip Hill, along which the church of San Filippo was erected with an adjoining oratory.



Figure 4: Birgu urban organism; formative phase 4: XVI Century, post-Knights arrival structure.

The last phase (Fig. 5) represents the configuration of Birgu in the nineteenth century, up to the events of the Second World War that radically changed the medieval consolidated structure.



Figure 5: Birgu urban organism; formative phase 5: XIX Century, before World War II

THE AGGREGATIVE ORGANISM: COMPARATIVE STUDY OF THE URBAN AGGREGATE STRUCTURE

The study of the Birgu urban tissue was also carried out by comparing the “modules” that make up the blocks, in order to recognize the “structural” differences in the construction of the nucleus constituted by the Collacchio and by the parts of the city outside it (Fig. 6).

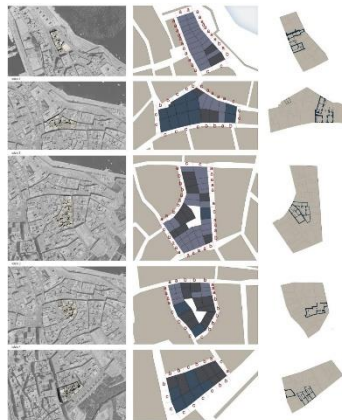


Figure 6: Birgu urban organism; urban fabric aggregate

The reconstruction of the urban aggregate is consequent to the study of the formative phases of the city, which suggested the main reflections on the structure of the settlement and, in some way, confirmed the hypotheses formulated on the development of the urban fabric organization. From the study carried

out on the urban fabric scale it is clear that the formation of the lot, and the consequent formation of the block, follow aggregation rules common to many medieval urban fabrics of the Mediterranean area.

The modular relationship of the lots of the housing units necessarily conditions the maximum dimension of the block front. This relationship changes, albeit not very much, in the different periods of construction of buildings and in different parts of the city.

Actually (Fig. 7), the urban organism of Birgu is mainly constituted by basic residential buildings, from houses arranged side by side, mostly orthogonally to the tortuous paths characterizing the ancient village, in particular the area of the Collacchio remained less affected by the damage of World War II. Except for the areas reconstructed after the war, the basic building preserves characters of spontaneity, easily recognizable regardless of the subsequent transformations and changes that have occurred over time. This makes it possible to read the basic building of Vittoriosa generated by the aggregation of almost quadrangular rooms, of variable dimensions and ratios.

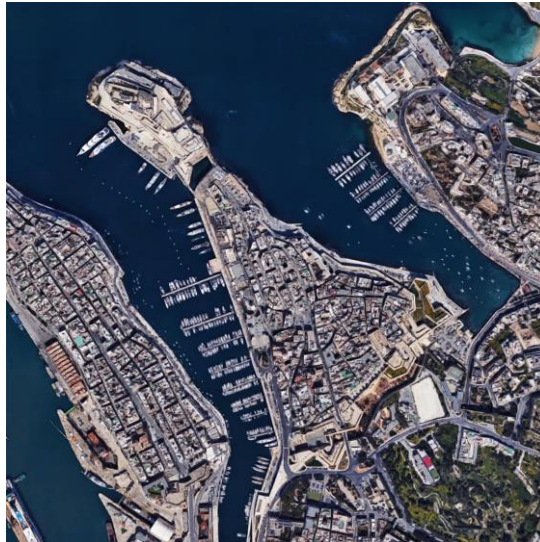


Figure 7: Birgu urban organism; actual view from above

There is also a certain constancy of dimensions on the main front, varying between three and five meters, in simple single-family dwellings, and the doubling of these dimensions in aggregate types. The depth of the house that develops by successive doubling of the cell, perpendicularly to the street front, is highly variable.

Five sample blocks were analyzed among those that did not suffer the post-war demolitions, three of which are in the Collacchio area, one is facing the walls and one is close to the sea front, in the final part of the peninsula.

CONCLUSION

We can conclude affirming the necessity to study the evolution of the urban form starting not only from the physical documents, such as cadastral plants and reliefs of the existing walls, but also considering the historical events that have marked the vicissitudes of the urban community. The city of Birgu, in particular, confirms the phenomenon of 'hybridization' that characterizes centers of great cultural exchange: the courtyard building typologies merge and coexist with the row-houses typologies. The evolution of the basic building urban fabrics, together with the specializations in the polar and nodal points, obeys the general formative laws derived from the study of continental formative processes.

Finally, we can affirm the necessity of the study of urban fabrics aimed to the project of their transformations: knowing the history of the physical evolution of the urban fabrics, that is, identifying the physical and cultural links that make up the buildings and the formative phases that define their evolution, means obtaining a basis of logical interpretations on which project (pro-jectus) future transformations, coherent with the built context. The reading method, therefore, is connected to the final planning act.

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INTERCONNECTION VS INTERDEPENDENCY: DIFFERENT URBAN RELATIONSHIPS IN THE SMART CITY ERA

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ABSTRACT

In case of emergency due to natural or artificial causes, one of the most compelling issues is the real-time response. In this field, urban contexts are often extremely fragile. The more connected the world is the more interconnection couples with interdependency. Electric grids, water supply, transportation networks, ICT networks and so on are all interdependent: a breakdown in one of them can generate a cascade failure and the collapse of the overall infrastructure that makes the emergency and disaster management harder and unprecise.

Dealing with an emergency means dealing with unpredicted events, even in the framework of already predictable disasters. Most of the Italian cities are exemplary cases: the compresence of an ancient urban tissue made up by an intricate streets system, with an unsustainable traffic loads condition and, sometimes, a role of strategic commercial node, they are always at the emergency threshold. On top of that, cities like Messina, Palermo, Naples, are constantly expecting a terrible earthquake or a volcanic eruption. What could be the consequences and real-time disaster management in such an unmanageable context?

This paper is an early-stage study based on the hypothesis that a possible way to prevent the infrastructure breakdown in case of disaster can be thinking the urban networks made up of nodes, both physical and virtual, that can be defined “islands”, with a particular grade of independence one to the other. In a sort of a new Mathias Ungers’ archipelago, where interconnection must overcome interdependency, the architectural point of view can add a fruitful contribution to the ICT field for emergency management.

KEYWORDS: interconnection, self-surviving nodes, cascade failure, infrastructure breakdown, emergency management, archipelago city, smart city

INTRODUCTION: INTERDEPENDENT NETWORKS

The city has grown smart, and we didn't notice that. We got used to it. The role of the digital world in daily lives has become pervasive, and we hardly can get rid of everyday use objects such as a smartphone. Everything looks to be under control. For this reason, when something occurs, let's say a change in the normal condition, that determines an emergency of some kind, the interdependency characterizing all aspects of our life turns into a weak point: a blackout, a failure in the internet connection, and the control fails, all looks to come back in the past of a century. Everything stops; everyone feels unease. What does it happen if the emergency is serious, if a flood, or a big earthquake, or a volcanic eruption happens, and the strictly interdependent networks our cities are made of start collapsing one after the other? If the earthquake determines disseminated fires, interrupting the electric grid, making people crowding the streets, the collapsed buildings prevent the rescue means to get the places where they are needed: the city does not look so smart after all.

A 'smart city' aims to achieve sustainability using technological and digital innovation, which has the potential to realise higher environmental efficiencies in a variety of fields, notably energy consumption. Nevertheless, the efficiency is measured especially when the system crashes. Dealing with emergency and robustness of the cities starts with the assumption that the city is both physical and digital: living in a city nowadays is like inhabiting a huge cyber-physical system, that is an embedded structure coupling physical and cybernetical layers. Using this metaphor also allows understanding that the studies about the city, from an urban point of view, should take into account both these aspects of the matter. The physical relations making the city the organism we study are affected by invisible and still invasive networks that physically move people, construct buildings and streets, lead vehicles.

This paper will focus on the interdependence and interconnection between the built environment and the empty spaces, because it is still an actual way to study the urban organism. On the other hand, it will try to find a possible solution to avoid the interdependency, by the definition of urban islands, as an advantageous way of rethinking the structure of the city itself to face natural or artificial disasters. Underlying their deep difference with the zoning mentality, the islands could be a key for the city to be smarter and resilient and to maintain efficiency to get a higher life quality for inhabitants.

Here it is proposed a way to read and understand and, eventually, also to rethink the city by learning from Unger's Archipelago City, to limit the cascade failures and to increase networks faults control to increase the self-sufficiency by a contemporary and complementary growth of architectural and data science tools.

Finally, a parallel interpretation of architectural and informatic representation of the "islands" is proposed, trying to understand the common underlying points.

THE GOAL: ENHANCING THE CITY RESILIENCE FOR EMERGENCY RESPONSE

As a huge cyber-physical system (Carroll B. 2002), the city has been described by some literature as a cyborg. "The emphasis of the cyborg on the material interface between the body and the city is perhaps most strikingly manifested in the physical infrastructure that links the human body to vast technological networks. If we understand the cyborg to be a cybernetic creation, a hybrid of machine and organism, then urban infrastructures can be conceptualized as a series of interconnecting life-support systems". (Gandy, M. 2005). So, it can be read as a hybrid, complex system where everything can be objectively measured. In the following paragraphs, the concepts of resilience and of the "sensitivity" of the city are presented, in order to apply them to the issue of the urban self-surviving islands.

Resilience

Resilience, as a very fashioned word, is a "combination of keeping errors small and of improvising workarounds that allow the system to keep functioning" (Weick, Sutcliffe, 2007). In order to manage the unexpected, the advantage of considering urban islands in facing the emergency consists into the concepts of self-surviving areas whose capability to react and self-sustain themselves in case of emergency is a featuring element. The interpretation of the cities as forming a lagoon of islands could increase their resilience, the possibility to discretize the faults, exploiting the hybrid nature of the contemporary city. This method could be suitable for small cities as well as for a megalopolis, by identifying districts whose inner behaviour can be made independent in some way. On the other side, modelling emergency scenarios for planning the pre-event conditions in order to efficiently recover after the event is an actual issue in computer science. The purpose is to provide

a cooperative spatial unite to be managed by the software, exploiting the interaction of cyber and physical system.

Smart because sentient?

The erosion of public spaces threatens the public sphere. And so urban leaders are pressed to rehabilitate derelict spaces, reintroduce cafes, fairs and bazaars in public places, pedestrianize streets, plan multifunctional spaces (such as medical clinics in shopping malls) and recognize the importance of vernacular moments such as parades and street festivals. With the Internet of Things, cities can use a powerful tool to manage their ordinary and extraordinary activities. The only questions will be: when smart cities fail, how much damage they cause when they crash, and how to make they fail less and in a kind of “controlled way”. The sentient city (Crang M., Graham S. 2007) in this sense is a smart city that can feel the danger to come: it can preventively organize by collecting and learning from real-time analysis of urban life and infrastructure by all the instruments in the field, taking advantage of the “urban ubiquitous computing systems”.

ISLANDS IN A LAGOON

In *Cities within the city*, Matthias Ungers describes the condition of Berlin, and he gives a proposal for future planning of the city with the introduction of the archipelago-city (Ungers M. O., 1978).

He establishes a reasonable city size in 250.000 inhabitants, underlying the inverted proportion between the city size and the quality of life. Therefore, he proposes to point out areas of the city to be preserved, forming «a green urban archipelago in a natural lagoon» (4th thesis). The particular condition of Berlin at that time was the occasion to rethink the way urbanization should proceed, and it triggered a reflection that had started with the clustered city by the Smithsons.

If we look at the present days, since the urbanized population is now more than 50% of the world people, this number (250.000) appear to be very small. On the other hand, it looks to be more and more compelling to get a sustainable way to live just in those huge and wide cities of tens of millions of inhabitants. Then, the “islands” can also be the output of another way to look at the issue, not only as green areas, but like independent urban structures in an urban lagoon, conceivable through a sort of a fractal lens. The following paragraphs will define the issue through various point of view, to better understand the metaphor of the “islands” in the contemporary urban problem.

- Fragments of cities beyond the zoning

In Italy, the main legacy of modern urbanism was the 70's zoning. Since then, planning should respect some standards that corresponded to a precise amount of space to be reserved to public green, schools, housing and facilities. It was in terms of square-meters and it determined sectorial zones. For sure, islands are not zones. On the contrary, they could be seen as heterogeneous fragments of the city whose structure can grow indefinitely (in a scalable way), whose empty infrastructural space is public and it is the way to connect islands each other, but with the constraint of maintaining the balance among its composing parts.

- Infrastructural lagoon

Is public space still important even in the era of the individual city? The issue has been at the centre of the urban debate for decades: anyway, streets and squares, along with malls, are the most public spaces of the cities. The infrastructural layer, both physical and digital, is the glue keeping all fragments together. How much infrastructure is needed to define a single island? To answer this question, it is useful starting from the following statements:

“As this great demographic and geographic shift continues, humankind will become ever more reliant on functioning systems of urban infrastructure. Indeed, the very nature of urbanization means that every aspect of people’s lives tends to become more dependent on the infrastructural circuits of the city to sustain individual and collective health, security, economic opportunity, social well-being, and biological life”. (Graham, S. 2010).

The dependence on the infrastructural layer is more and more compelling. It constitutes the metaphorical water where the “islands” stand — analysing the urban tissue to identify the borders of the so-called islands in a corresponding balance of infrastructural networks to get self-sustainable areas able to efficiently react to an overall network interruption (physical and digital). The metaphor of the archipelago can also refer to the fluidity Maurizio Carta talks about (Carta, M. 2016), as one of the keywords of the contemporary city.

- An issue of identity: the dialectic centre-periphery

If a feature of these areas is heterogeneity, how is it possible to find an identity? Then, let’s think about the couple inside/outside has this conception still any sense today?

If we look at the scale of the “island”, distinguishing among urban and peri-urban means again looking at the relationship between empty areas and the built environment. The reference should be that of the countryside, where the extremely dilatated relationship made the “lagoon” very “watery”, and the islands can be seen as single-family houses or farms. This balance, no-more searchable in urban areas, must be found by identifying a new liveable relationship among those built districts and their corresponding public space. It is not a matter of historical centre, or monuments to be isolated or distinguished, but on the contrary, it means to focus on the strength-relations that are necessarily different shifting from a very dense small Italian village or a sprawled periphery.

This should deal with focusing on the ordinary city (Robinson J. 2006) to get to the definition of islands as part of “highly successful cities in the future will likely consist of a network of compact urban districts where resources and amenities of daily life are in proximity, allowing people to live, work, play, and exchange ideas in walkable, vibrant communities” (Larson K. 2018).

By collecting all the information above, it is possible to start a definition of the metaphor of the archipelago: the islands are self-surviving areas where the interruption of the overall network does not immediately affect the inner life-cycle of the area’s network for a determined period.

Dimensions matter (or “how smart is to be that big?”)

“The city is everywhere and in everything. If the urbanized world now is a chain of metropolitan areas connected by places/corridors of communication (airports and airways, stations and railways, parking lots and motorways, teleports and information highways) then what is not the urban? Is it the town, the village, the countryside? Maybe, but only to a limited degree. The footprints of the city are all over these places, in the form of city commuters, tourists, teleworking, the media, and the urbanization of lifestyles. The traditional divide between the city and the countryside has been perforated.” (Amin, A., Thrift, N. 2002).

Even if the distances are cancelled, or at least much shortened by contemporary transportation and invisible networks, the city is still a matter of size. The dimension of the cities is known to play a fundamental role in social and economic life (Schlöpfer et al., 2014). Early 20th century writings suggested that the social life of individuals in larger cities is more fragmented and impersonal than in smaller ones.

About this concern, what does it mean to be smart for a city? It could be useful to understand a dimension where the interconnection of things (infrastructure, housing, facilities, green areas...) does not turn into some unmanageable monster, whose only smartness lies in the pervasive presence of internet. Again, it is very actual considering the issue of bigness in a Koolhaas' perspective (Koolhaas R., Mau B. 1995).

The question this paper wants to ask is the following: is rethinking from the perspective of the islands a way to reduce the size of the city and to increase then its smartness?

Interconnection Vs Interdependency against the disaster: conceptual models and ontologies

Here we go to the real point of all this issue: the reason why it should be useful to rethink at the urban text in an island-lagoon relationship is relating to the pervasive presence of networks and the need to prevent disaster by increasing urban resilience.

As a very abused word, resilience deals with the ability of the system to react and be robust to unprevented changing conditions. Relating to the cities, this could be the way to rethink the embedded system we live in to face the interdependent networks, increasing their interconnection but making them robust in case of failures. Avoiding interdependency is not easy. The interdependency problem "is compounded by the coupling of physical infrastructure with information technology systems for communications and control" (Graham, S. 2010).

The paradigm here proposed tries to point out (or add on) the infrastructural joints to the infrastructural overall networks, to allow the so identified "islands" work for their own in the response of an emergency (e. g. an interruption of the electric supply), and so avoiding the cascade failure. It can look like a cellular paradigm, where single cells communicate drown in a fluid, but a single failure does not compromise the entire tissue.

Plus, the non-physical streams of data, i.e. the cyber part governs all the physical structure. Even if the dematerialization of the information is evident to all, it "still works to deny the materiality of cyberspace infrastructures themselves, and their absolute reliance on other less glamorous infrastructure systems—most notably, huge systems for the generation and distribution of electric power" (Graham, S. 2010)

Nevertheless, the software part plays a crucial role in the shifting of the paradigm. Indeed, in computer science, there is a field of study researching modelling interdependencies. Meta-models and ontologies are developed to foresee human behaviours and design scenarios. The conceptual models rely on the European Commission life cycle for disaster risk management, and they aim to provide adaptive frameworks that cover real-time collection of data to set the new initial conditions and for this reason, adapt.

If the software layer can affect both the sides of the circle, analysing and planning must act in the pre-event side, that can have long-term prevision and 'take their time'. Both must operate in coordination, and the one must support the other.

CONCLUSIONS: A MATTER OF SPACE

Although the software systems are everywhere in our lives, the outcomes are always in the physical world. In some way, it is the matter of the CPS, coupling digital and physical systems all embedded: in a broad sense, our entire world is becoming a cyber-physical system.

Our cities became real-time (Kitchin, R. 2014). Still, every modification happens in the physical world. The smartness imposes a reflection on both the sides, and urbanists and architects must deal with space more than ever.

The key is not to add devices but starting from the physical space. The issue is how to manage it by exploiting the available and future technologies and to improve the everyday places to gain a better life.

Cooperation and interaction between ontologies and meta-models and spatial analysis and planning can be the next step for the future cities, and a key is starting from the emergency response: if the city could deal with an effective response to a crisis, then the everyday life will be necessarily better. This paper provides a proposal in rethinking the built urban areas as forming a lagoon (recalling Ungers' archipelago) in which islands can be identified. The metaphor of the islands should imply independent areas composed by residential blocks, infrastructures and facilities interconnected but not interdependent one another. Avoiding the interdependency is the key: the software role is crucial in determining the interconnection nodes and to find the points where the infrastructures could be joined. The final aim is to rethink cities as embedded cyber-physical systems, where software and urban reflection could go together to trigger new future ways to live and plan the city.

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PROJECTING AND BUILDING 'LA GRANDE PLACE'

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ABSTRACT

Every place, no matter how small it is, wants and should have its '*grande place*'. El Morell, a town located in the middle of a countryside planted with hazelnut trees, peach trees and next to a huge oil refinery, could not be an exception. The industry brought vitality to the town and has mutated its skin to grow on the surface and the quality of its buildings and public spaces. The largest and most central public space was and is a square, *L'Era del Castell* (Castle threshing floor); its name denotes the agricultural origin of the space and the town.

From the end of the eighteenth century, the Castle became a Palace, governing the town and the fields planted with vines and cereals, opened to the south and to the expansion. Meanwhile, the Church, built at the same time, opened to the north looking for the old parishioners. The Square took time to build and its renovation has also taken time. We inherited a space fragmented into two large (and barely accessible) levels, arranged between the Castle-Palace (already converted into Town Hall) and the new Rambla (Spanish term for a broad street, with similar meaning as Esplanade or Promenade) that organized the growth on the way to the railway station.

The space was quite small, as all the urban centre is, and it had to be at the same time container of multiple uses and a representative space for the city. The topography played in our favour. Using a vertical drop of six meters we managed to fit a large hall accessible from the Rambla, suitable for a thousand uses since it has no main vocation, and above it a flat open square, with barely any paving or planting, understood as a basement of the castle-palace. In the space of one square we had managed to fit two.

It is a project carried out in many phases, but it is already assembled and the quality of its spaces, both exterior and interior, is now perfectly perceptible. It has been a very intense exercise of

reflection on the forms and qualities of a central space, symbolic and utilitarian at the same time. About the '*grande place*' of a small city.

KEYWORDS: El Morell, square, covered square, hall, grande place

INTRODUCTION

At first, the squares were only crossroads or temple courts. In Greece they are *agoras*, in Rome, sacred forums and profane temples. Then, some of them, will be centres of compass for precise geometries that seem to want to tense –like in a spider web– the roads of the world. Sometimes, the squares have been cut in the dense city, like perfect voids. It does not matter if they are markets, city entrances or urban centres: they condense the representation, the cult, the government, the commerce, the party and the best of the collective life. We like those that have clear forms but not too perfect, with figures that are not the result of a single decision or a single trace and that are always in transformation: those that admit and generate the formal and social changes constantly demanded by urban lifestyle.

The history of the world, of the city, of each house, has left in the square indelible marks and, however, it continues to wait for the most noble or the newest building, the glory of the illustrious citizen or the next party. Meanwhile, it is admired by fleeting travelers. Whoever is in the square perceives that he is in the transcendent urban place. Their trees and porches –we often find them– give shade to those who stop there. It is crossed by all, in all directions and at all times. And the shop windows of its stores –there are many– reflect the novelties or the attentive look of those who –worried or nervous– wait.

Named *circus*, *grande*, *main*, *mayor*, *major*, *mercadal*, *plaza de armas*, *square* o *zoco*, the great squares of Arlon, Bossòst, Ciudad Rodrigo, Chihuahua, Ghardaia, Hartenstein, Itea, Linz, Mons, Nový Bydžov, Poperinghe, Orihuela del Tremedal, San Antonio, Sassenage, Sain-Laurent du Pont, Saint-Symphorien, Saint Quentin, Tourcoing, Veracruz, Ypres, o Zsolna do not have their own name, because for each city they are its '*grande place*'; as Maria Rubert (2007) writes: «No square, no city». And as a theatre stage for urban life, they have good images and lots of postcards. Also, our minimal city, El Morell, considered itself entitled to dispose of its '*grande place*'; and why not?



Figure 1: Montoliu's Catle-Palace around 1900 (up left), the site near 1970 (down left and aerial view).

The village was born as a feudal settlement around the Castle built in the late twelfth century on a slight promontory by Berenguer de Prats, Lord of El Morell. In the eighteenth century, when its population quadrupled between 1718 and 1787 coinciding with the agricultural expansion of the so-called *Camp de Tarragona* (Tarragona's countryside), the primitive inhabited nucleus spilled down the hillside, extending even new streets to the plain –interestingly, all with the names of saints: *Sant Plàcid* or *Sant Rafael*, to give a couple of examples–. We find the architectural materialization of this prosperity in the construction of a new Church, as well as in the renovation of the Castle; this last, dated around 1778, consisted in transforming it into a building with a character more palatial than defensive, with a garden to the north that would coincide with the situation of the original fortification, and also with new ownership: now belongs to the Montoliu dynasty (Valldosera & Granell, 1994).

Since then, Church and Castle share the top of the promontory on which sits the nucleus of the municipality, with houses –always humble– alienated along streets that descend towards fields, once planted with vines and cereals. Two buildings that were and are the landmarks of the new urban configuration, but both –Church and Castle– maintain a very special relationship –we could call it a 'non-dialogue'– that allows each one to assign itself a public space. Thus, the Church opens its doors to the north, to the small square that takes its name, searching for the roots of the primitive settlement. The Castle,

on the other hand, proposes its best façade open to the south, to the fields of cultivation and to the *Era del Castell* (Castle threshing floor); the latter will be converted, after 200 years, into the new square that occupies us.

Montoliu's Palace-Castle became a municipal property in 1979 with the first democratic City Council (the dictator Francisco Franco dies in 1975, the first democratic parliament was constituted in 1977 and in 1979 it was time for town councils). Already in the mid-80s, the ground floor housed some civic activities: the collective '*L'Embruix*' (the spell) (Granell & Granell, 2009) built there the fantastic objects and animals to be used in festive parades.

The mixture of unusual forms, colour and light in a space with great historical and architectural value, which the democratic community had recovered from outdated aristocracy, moved us suddenly to the best places in Italy. It was an unforgettable sight, since then we are bewitched by the Village and its Castle. It may seem inadequate to include personal subjective sensations in a scientific text, but we believe that in this case they have an undeniable testimonial value: they were the basis of the personal and professional endeavour that has boost –in many cases irrationally– the different projects developed for almost 35 years, first transforming the Castle to house the Town Hall and, later, with the construction of the '*grand place*' and the multi-purpose hall that we present here.

The restoration of the Castle-Palace was long and arduous. It lasted six years, being executed in five phases funded by three different administrations, with the consequent projects and contracts. But we managed to bring the collective effort to a successful conclusion: The Castle-Town Hall opened its doors at the beginning of 1994.

The building that from 1778 replaced the original fortification had a rectangular plan of 16 x 19 meters, with the long axis in north-south direction, with two floors raised on a basement. In 1794, recently completed, it was decided to extend it towards the garden, adding a new bay that respected the width of the plan but lengthened it 7.5 meters to the north, completing the compact volume that has survived to this day. The ground floor was intended for productive uses, while the main floor was articulated along the longitudinal axis, with the main room and bedrooms peeking, through magnificent balconies, to the main façade –to the south– while the day spaces –dining room, chapel and kitchen– opened to the north, towards the leafy garden planted with exotic American species, which when the property passed to the

municipality had the appearance of a minimum botanical garden grown and neglected.

The roof of the volume raised in 1778 was (and is) hipped, while that one of the 1794 addition is gabled. These roofs explain the history of the house, and protect a splendid space that originally served for drying fruits and now it is the archive of the Town Hall, also housing the staircase that goes up to the lantern that crowns the hipped roof and serves as a viewpoint. The sgraffito with carnivalesque motifs of the main facades and part of the interior wall paintings were recovered. The restoration required difficult decisions, but in general it was possible to recuperate much of the rich original decorative language of the spaces thanks to the quality of its constructive elements –it seemed that Palladio was not far away–. All this without giving up integrating architectural elements proposed with contemporary composition keys, in order to achieve the comfort required by the new administrative and representative use, in an effort to balance between new and old.

The railway –the line of direct trains between Madrid and Barcelona– arrived at El Morell in 1884. In correspondence, the town built a wide and straight Rambla to the door of the new station (Yxart, 1946) along which the new public facilities (schools, libraries and cultural centres) were built, as well as the best houses and businesses. Our town already has a Rambla, but it does not have a square yet. Remember: «No square, no city».

The implantation, in 1971, on the flat and fertile soils on the banks of the neighbouring Francolí River, of an astonishing oil refinery –the only one in Catalonia and, together with those of Cádiz, Cartagena and A Coruña, one of the main ones in Spain– left our villa without its clean skies and a good part of its famous peach crops, but added urban complexity and new resources for the territory and the municipality.

Conquered the Montoliu's Castle-Palace –which became community house since 1994–, the municipality marked a new challenge: to get its '*grande place*' that would change its rank, having, if possible, a good cultural facility that would dialogue with the Castle-Palace –on the top of the promontory of the original village nucleus– and the Cultural Centre –on the Rambla that had arrived with the Railway to articulate the urban expansion of the municipality towards the south–. The primitive '*Era del Castell*' (Castle threshing floor) had already been converted into public space but did not have any of the attributes of a good square due to the difficulties derived from its shape and topography. Its destiny seemed headed towards deterioration.

OBJECTIVE

After such a long prologue –we believe that justifiably, but sorry if we have allowed ourselves to be carried away by enthusiasm–, all those involved, society and their representatives, were aware about the next objective: to imagine and build in the urban centre, between the Castle and the Rambla, in a space without definite shape flanked by humble facades and two superimposed levels, finally, its '*grande place*'.

METHODOLOGY

The chronicle of this process and its results will be explained based on the graphic material that illustrates the text: images, diagrams, models, sketches and plans generated during the journey; a path sometimes hesitant and, always, extremely complex and long. The chronicle will also refer to some eventual achievements, surprising and fortunately interesting.

RESULTS: THE SQUARE

The first plans were very ambitious. It was proposed an underground parking, re-urbanizing and changing the section of the whole Rambla, extending its paving to the Church square; it was even planned to reach the *Plaça de la Font* (fountain square) –a space next to the wall of the Castell garden and the medieval door, at the opposite end of the main body of the building–. In this first version of the project, the Square was arranged on two levels. The superior gave the main access to the new Hall, built on the old Parochial Hall site. The lower one coincided with the Rambla, and also allowed access to the new Hall, so that the projects for this new equipment were mutating and growing in complexity. In contrast, the old Parochial Hall, built in 1932 and back then still standing but no longer in use, was accessible only laterally from the intermediate level of the Square, a situation that finally caused its deterioration and definitive replacement.

But the speculation on the form, capacity and meaning of the new urban equipment was suddenly truncated: the right decision to reform and expand another neighbouring existing auditorium –annexed to the Cultural Centre of the Rambla, just ahead– left the square apparently without building and arguments. It was not so.



Figure 2: Project around 2002. Virtual views of the Square and the Rambla with the new Hall proposed.

End of the first phase

The old Parochial Hall was finally demolished. Once emptied the space that occupied, allowing also to integrate into the intervention two vacant lots of municipal ownership that were behind, we find new strategies to project the square. They were two. The first one, to achieve a clear, direct and clearly accessible path –with a slope of less than 6%– between the Castle and the Cultural Centre. The second, to propose a main level of use with the largest possible surface, connected to the path mentioned in the previous point; a plane suitable for all civic and urban uses: The Square.



Figure 3: 2014, demolition of the old Parochial Hall.

End of the second phase

The special geology of the soil came into our aid when the Parochial Hall was demolished. Indeed, the expansive clays that form the soil of the promontory on which the urban nucleus is located forced an expensive stabilization of the generated void, by means of a retaining wall arranged by gigantic piles –85 cm of diameter and 14 meters of depth– in order to protect the neighbouring buildings in Sant Plàcid street and the square itself. The gift was to obtain a new room in

the basement of the Square, with a greater capacity than the old Parochial Hall; was configured, therefore, a space located in the best urban position imaginable and that would be the perfect complement to the recently inaugurated Cultural Centre Theatre.



Figure 4: Retaining wall constructed by piles and early stages of the new Hall.

End of the third phase

A continuous inclination ramp joins the level of the Rambla with that one of the Square, which forms a plane of negligible slope (1%) and, despite being located at a lower level than the main access of Castle-Town Hall, appears to be its base. Consequently, the new Hall, which can be understood as a Covered Square, is also linked to the Square by the route of the ramp, as well as by the stairs, grandstands and driveway generated in the transition between the different levels of the section of the public space.

All our efforts were concentrated in this direction: to generate a clear and safe route to link the two squares. One would be open and soft (the floor of decomposed granite and the stairs and ramp of tan granite), free of ornament and suitable for all uses. The other would be an interior space with the minimal comfort needed for multiple activities (market, forum, public meeting), but without artifice that specialize or limit it: definitely, a Covered Square. The Square had been doubled – we were looking for one and we had found two– and the town could be considered a city, minimal but city.



Figure 5: Concrete beams of the new hall supporting the new square (the roof of the hall).



Figure 6: The roof of the new Hall (the new square).



Figure 7: Site plan and axonometric view of the new Hall structure.

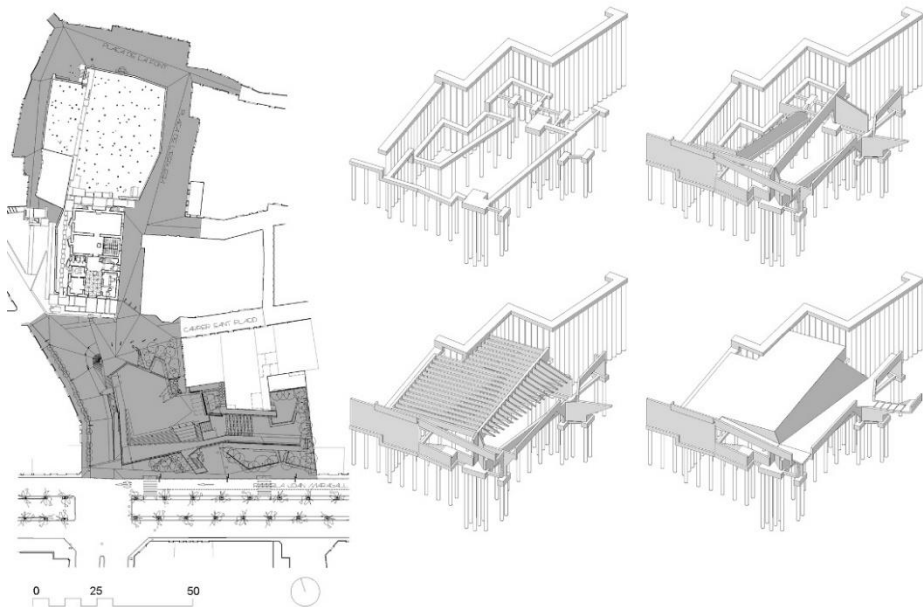


Figure 8: (next page): Model of the intervention.

CONCLUSION

We are still immersed in the process. The roof of the new Hall – the central area of the new Square– is built and finished, and the capacity of the public spaces generated can already be seen. The Castell also has a basement of decomposed granite pavement on which to settle visually; but there are no fountains, lights, and all the plantations, and the development works of the immediate surroundings are not completed. Is a surmountable process: although the Square has not been inaugurated, it has already been opened and used, welcoming the first civic activities.

We do not expect our public spaces to be considered exemplary, we only wish that the set of four squares of the new city –Font (fountain), Església (Church), Era del Castell (Castle threshing floor) and Sala (Hall)– to be scenarios of the best and most varied urban activity. If so, the graphic chronicle of the events will give us the true images of 'les grandes places.

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**THE SYSTEM OF TERRITORIAL DESIGN SYSTEMS.
CULTURAL TOURISM, CRAFTSMANSHIP AND DESIGN FOR
THE LOCAL DEVELOPMENT OF THE PRODUCTION
ENTERPRISES OF EXCELLENCE IN SOUTHERN ITALY AND
MADE IN ITALY**

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ABSTRACT

The virtuous interaction between the "Culture of Project" and the competence in "Know-how" had been experienced for years in several areas of Italy, and now constitutes one of the most meaningful features of the Design in Italy. Moreover, after the rediscover in recent times of the Craftwork, thanks also to some essays, as the writing of the American sociologist Richard Sennett "The Craftsman". So, the proposal is based on the possible cooperation among designers and artisans in innovating, in the wider sense, the Design activity, in order to encourage the development of local craft-based production, by creating a Regional Museum System of Design and Applied Arts in the five less-developed Regions of Southern Italy. The "System of the Systems" is conceived as a whole, constituted of five single museums to be selected among the centers of excellence of each Region; furthermore, the interaction of the pair "museum-enterprise" will characterized every regional, physical and virtual System, which will have a "center" strategically located under the aspect of the tourist service, to work as "museum of companies".

The final aim is to allow companies of Southern Italy to take part in the "Made in Italy" process, so spreading the Italian Handmade as the Design of Italy.

KEYWORDS: industrial design, technological changes, collective memory, cultural industry, economy of culture, Handmade in Italy

INTRODUCTION

The thinking behind the paper is about the project of a System of the Museum Systems of Design and Applied Arts, conceived as a framework of the single museums, to be realized in the five less-developed Regions of Southern Italy. In particular, this is a so-called P.R.I.N., that is a Research Projects of National Relevance produced by six Italian universities to participate in the 2017 call of the Italian Ministry of Education, University and Research (MIUR)¹.

With Fabbrica 4.0, the Smart Manufacturing and the increasing integration of “cyber-physical systems” in the industrial production, the manufacturing industries try to become more competitive, by introducing digital innovation in production processes and investing on the Internet of Things, the Big Data and Cloud Computing, automatic production systems, wearable devices and new human-machine interface or 3D print.

Consequently, it's not only a complete change in “doing” business, targeting more and more on the possibility of a ubiquitous governance of the production processes; but also in “making” design, with unexpected implications regarding economy, labour and its managing, the concept of factory, as well as more strictly cultural aspects, like the harmonisation of technology and craftwork.

Trusting in new, however, it should not mean rushing blindly into a future without roots, rather exploring the positive interaction of the identity background of a country (its *genius loci*), with languages, materials, technical and production ways of today's world. It could be the feeling of “open nostalgia” evoked by Remo Bodei in his book *La vita delle cose* (2010), who writes: “In the open nostalgia, things don't undergo to the unfulfillable wish of return to a no longer recoverable past [...]. They have become vehicles for a journey of discovery throughout a past full of chances for the future”.

¹ The universities were the following ones: Università degli Studi della Campania “Luigi Vanvitelli” (lead) with Claudio Gambardella as Principal Investigator; Università degli Studi di Palermo (Research Unit) _ Dario Russo as leader; Politecnico di Bari (Research Unit) _ Rossana Carullo as leader; Università degli Studi “Mediterranea” di Reggio Calabria _ Carmine Ludovico Quistelli as leader; Università degli Studi di Bari Aldo Moro _ Luca Petruzzellis as leader; Università degli Studi della Basilicata _ Mariadelaide Cuozzo as leader. The working groups were also composed of followings scholars: Carmelina Anna Catania, Ciriaca Coretti, Fabiana Forte, Antonia Rosa Gurrieri, Antonio Labalestra, Giuseppe Lotti (University of Florence), Massimiliano Marafon Pecoraro, Anna Bruna Menghini, Virginia Milone, Giovanni Pappalettera, Daniela Piscitelli, Aldo Presta, Valentina Sapio, Gino Satta, Maria Antonietta Sbordone, Chiara Scarpitti, Sabrina Spallini, Tiziana Trippetta, Rosanna Veneziano

Craftwork, which in about one hundred and thirty years had a varying role in the dialectic relationship with the Culture of Project, from Arts and Crafts Movement to Bauhaus School, and now it has been reconsidered by well-known scholars as Richard Sennett (2008), in Italy can free itself from a certain rear rhetoric of “art professions to rescue”, to aim becoming an underlying element for a “Design of Countries”.

This sort of “new design” could play a key role for the “renaissance” of “Made in Italy”, which is now creaking, with major companies passing in foreign hands and relocating to countries with lower welfare state, or closing of research centres of companies located in the South. Besides, the interrelation between design and craftwork, already experienced during the XX Century by designers of Gio Ponti’s stature, or now as Ugo La Pietra, and ideologically relaunched by Global Tools during the Seventies, is in the DNA itself of furniture design, one of the three F of Made in Italy.

“Handmade in Italy” is an expression of Claudio Gambardella (2015), that he uses with a design sense, to name the design of Italian territories; it could be intended as a strategic concept for Italy, and especially for its Southern part, thanks to the many, little companies of local craftsmanship, that are its excellence and continue to carry on working methodologies of the past, collected in several specialised museums. The idea moves from the Project of Seconda Università di Napoli, regarding the Regional Museum System of Design and Applied Arts and developed in 2003 for the Campania region Department of Productive Activities. It considers to realize a System of Regional Museum Systems, both physical and virtual, each one provided with a “museum of companies”, to be located in areas with high touristic value thanks to the presence of archaeological areas, historic centres, marinas and so on, working as a connector for participant museums and companies, as already done for “Sistema Campano” in Pompeii.

In other words, a museum for contemporary design, conceived principally as exceptional place where present new Handmade in Italy products, originated by design and craftsmanship working together. This system should assign to Universities, Local Governments and professional organizations gathered in territorial tasks the role of steering committee, aiming to enhance the relations between communities and places, to restore the proto-industrial business viability that characterised the Southern Regions in the pre-Unification period; finally, to promote local development thanks also to tourism industry and sustaining new business start-ups and employment of young grad students, giving them an alternative to flee abroad.

In the most immediate hypothesis, it will be starting a production, also as an experiment, of new merchandising objects, firstly designed for physical and online bookshops of Museums part of the System, as an effective outcome originated just by putting at system the territorial museums.

THE PROJECT

The project-idea “System of the Regional Museum Systems” is in accordance with OECD (Territorial Outlook, 2001) and European Commission guidelines (2005), regarding the policies for territorial development. Particularly, they establish that “it is of first importance and above all helping the Regions to build their own local capital.

The concept of “local capital” (Camagni, Dotti, 2010) involves all the components, both material and immaterial, that contribute to the wealth of a country, such as activities, landscape, cultural heritage, know-how, and so on, in the aim to seek and identify all the uniqueness to be enhanced.

DESIGN & CRAFTSMANSHIP

In about 130 years of history, from the Arts and Crafts Movement to Bauhaus School, passing through the Wiener Werkstätte and the Deutscher Werkbund, craftsmanship was always a “varying ingredient” in the Culture of Project. In Italy, since Gio Ponti the strong interrelation between design and craftsmanship was practised during the XX Century by Branzi, Dalisi, La Pietra, Mari, Mendini, Pesce, Sottsass, or in the brief experience of Global Tools (1973/1975). Especially, La Pietra established a sort of maieutic with artisans, during the exhibitions with the designers, drawing up a “new alphabet of design”, in a four-handed work conducted by designer and the artisan together, but with specific identity and roles. It is no coincidence that La Pietra talks about “territorial design”, referring to a design research, that he developed with Italian local production the most diverse since the 80s, tracing the outline of a new production geography, where territories play a crucial role.

Besides, in 1991 De Fusco and Alison envisaged new phenomena in the several Italian experiences, that they called “Artidesign”: “[...] a type of production spanning various kinds but particularly relating to furniture and ornaments; a phenomenon that is mid-way between craftwork and industrial design [...] a ‘third’ kind of product, with its own features and *raison d’être* [...] Artidesign doesn't

focus on the serial production, but on a “limited series that highlights the firms of hand-made and the uniqueness of the object [and] it isn't the remake of models of the past, but it aims to exclusively operate according to the contemporary taste” (Alison, De Fusco, 1991).

In the same years, Manzini considered with vision the transforming, composite universe of the design mixing with the craft culture, and wrote as follows: “[...] what appears it is a complex world in which high technology can combine him in its different forms with consolidated technologies or handicraft, where ancient ability can be recycled in new fields; where, instead of an attended homogenisation of cultural and productive models to a single dominant rationality, difference is rediscovered. While it could be said that world is becoming a “global village”, it's also true that this is a village with many languages, and many other traditions (Manzini, 1990, p.52).

And that's exactly high technology – the so-called digital fabrication, like 3D printers, grinders, robotic arms, laser cutters, vinyl cutters, electronic prototyping cards, etc. - combining with «consolidated technologies or handicraft» the most newest aspect in Manzini's predictive thinking, that is starting to develop in the era of makers , also in craftsmanship (recently, the first Centre for Digital Craftwork in Italy was established right in Cava de' Tirreni, one of the thirty five cities of Italian traditional ceramics).

Spreading these technologies and by the coming of Third Industrial Revolution, there's also a change in terms of manufacturing and marketing, that turn towards an “on demand” production and a “glocal internationalisation”. Then, if contemporary production is oriented to a human-centred approach, the focal point in the process consists in can having effect on product innovation through the project, by leveraging the digital opportunities, according to an industrial model in which the production process is strongly led by digitalised patterns, that influence the whole chain, starting from conceptual design stage. In this typically Italian scenario, characterised at the same time by both the culture of “well designing” and of “know how” that dialogue together and give rise to something new, thanks also to digital technologies, it can be outlined an oriented design of the territories. This can help an ailing “Made in Italy”, due to the excessive relocations and sales of important brands.

Claudio Gambardella calls this design Handmade in Italy, expression used in this sense for the first time in 2015, in order to outline a project-idea wishing to become a strategy for small- and micro- Italian craft companies. According to an organic, political and cultural outlook,

Handmade in Italy allows all the experience of “design of the territories” to be part of a Made in Italy locally well-established, and, for this reason not at risk of relocation. Furthermore, not being only key lines for conferences and exhibits, directed by Gambardella within the context of “Trilogy of Pottery” (Neaples, Pompeii 2016/2018), Handmade in Italy is also the name of a thematic committee of ADI – Associazione per il Disegno Industriale, set up in 2017 in Milan on his proposal and coordinated by himself. Thus, Handmade in Italy can be intended as a strategic concept especially for Southern Italy, due to the presence of many little companies of local craftsmanship, that constitute the majority and represent its excellence, continuing to carry on working methodologies of the past collected in several specialized museums. Moreover, Handmade in Italy can have undisputable positive side-effects on employment of young graduates in design.

THE REASONS FOR THE PROJECT

The idea behind this PRIN_LINEA SUD is about the creation of a System of the Museum Systems of Design and Applied Arts, conceived as a framework of the single museums, to be realized in the five less-developed Regions of Southern Italy and meant to promote the sustainable, local development of craft manufacturing activities of excellence.

This inspiration is drawn on the project of Faculty of Architecture of Seconda Università degli Studi di Napoli - SUN, (now, University of Campania “Luigi Vanvitelli”) for “The Regional Museum System of Design and Applied Arts”, known as OFFICIAMUSEUM, directed in 2003 by Claudio Gambardella and funded by the Department of Productive Activities of Campania Region. The Campania “System”, a network composed of twenty-one specialised museums of applied arts and craftsmanship, both private and public, had a wide diffusion thanks to articles, books and conferences, in Italy and abroad, although it remained only at project stage. The temporary museum of enterprise, instead, as heart of the system located in Pompeii, was carried out by Claudio Gambardella as adviser of SUN for the City of Pompeii and it was properly publicly funded. Undertaken in 2012, the project is going to be completed: the choice of Pompeii is the best possible, for its high attractiveness as it is located on a strategic route for the tourism. Furthermore, it should be clarified that, in addition to expanding to the others four Southern Italian Regions, the project could also get an extension to the Euro-Mediterranean area. During 2013 in fact, Claudio

Gambardella directed both in Italy and Turkey the “Summer School in Designing of Company Museum Systems in Euro-Mediterranean area”. It was an Intensive Erasmus Programme of his own idea, funded by National Agency INDIRE, with SUN as leading university, and in partnership with Okan University of Istanbul and Cologne University of Applied Sciences: a sort of first milestone for Officiamuseum Med.

The general aims of the project are the followings one: a) creation of an advanced network composed of companies, designers, creatives and innovators; b) promotion of excellent territorial crafts / Mediterranean Marketing; c) awareness-building among local communities about knowledge of material culture, for establishing a new feeling of rootedness and belonging to their sites; d) economic growth of local craft enterprises; e) reorganisation of productive chains by means of design; f) integration of ancient manufacturing and new technologies; g) enhancement of ancient and contemporary manufactures of excellence in Southern Italy and strategic promotion of Handmade in Italy culture internationally; h) support of employment of young graduates.

SYSTEM DESCRIPTION

The “System of the Systems” is a research project, based on the informed dialogue between designer and craftsman, supported by the recent theories of well-known economists and sociologist as Sennett, Micelli and others, that rediscover and promote craftsmanship. This has encouraged to start new, small experimental productions; the development of researches and projects publicly funded, exhibitions and conferences, and finally, published articles and essays that study the complexity of this phenomena and of its consequences.

Moreover, the System of the Systems aims to combine the “culture of know how” and “culture of well designing”, to guide the craftsman soloist towards the Italian business culture. Assigning the role of

steering committee to Universities, Local Governments and to professional organizations gathered in territorial tasks, the System aims to enhance the relations between communities and places, to restore the proto-industrial business viability that characterized the Southern Regions in the pre-Unification period. Furthermore, it wishes to promote the local development of small- and micro- craft enterprises, also with the tourism’s contribution, and to sustain new business start-ups in a

cooperative design and production model, with positive effects on the employment of young graduate students.

Underlying the Project, there are three basic requirements: A. the interaction between the two dimensions of culture and business it's not difficult, if investing in "Culture" is regarded by enterprises to counteract the cost-reducing policies, pursued by several emerging Countries out of EU, conversely focusing on quality. The "connective tissue" of regional museums and clusters of small craft enterprises is founded on complementary but different roles; B. the South expresses a specific manufacturing culture of the places: the objective is promoting the local development of companies part of the excellent products Made in South, leveraging precisely the museums of that excellence and the powerful attractiveness of tourism; C. access to the System for the enterprises shall be regulated by means of evaluation of their quality and ability to invest, betting on design's potential from concept to production, right up to distribution.

The project-idea is realized as a supra-regional system of the interconnected physical- and virtual- local systems, established in the five Regions of Southern Italy. Each regional system shall consist of a group of selected local museums, which collect and protect the material cultural heritage of a country, and one museum of the local craft enterprises that participate in the project, having agreed to regular training programmes for the personnel and to invest on design and technological innovation; these museums are meant to become heritage sites the first ones, space for modernity the second (figure 1).

THE MUSEUM OF ENTERPRISES

The museum of enterprises will be a both physical and virtual turning-point of the system, a sort of input/output instrument as place of connection and exchange with the fringes of the system; a beating heart, able to give back the system its wholeness, otherwise undetectable, and to be located in strategic areas under the tourist aspect, to take advantage of the opportunities offered by the territory (as in the case of the museum of enterprise in Pompeii, center of the Campania System).

The museum of enterprises can also be intended as workshop and exhibit in progress of the best trials aroused by the cooperation of the hands-on expertise and the design knowledge; a "museum for rent" that, thanks to its governance, provides the associated companies with

spaces for temporary exhibitions, in the aim to introduce new products, becoming in such a manner an exceptional “shop” targeted to buyers.

Moreover, the system will also have a virtual dimension, by means of creation of an electronic “in progress” catalogue. Then, every system is conceived as an open, expanding body, wherein the multiple components can establish multifaceted relations with each other. The augmented-reality technologies, particularly successful in the storytelling, shall be introduced as pilot run in the museum of the enterprises.

Besides, the creation of a modern cultural context, strongly centered on design, is part of the system as well, and can contribute to activate the economic and social system of a territory, improving its competitiveness and visibility. The System shall help the companies to capitalize, industrialize and to serialize creative processes and products, to be dedicated to a merchandising for museums (but also for university), especially for the bookshops of the museums part of the System, which as a result will become its cultural and economic driver.

Thanks to the inter- and intra- connection among the regional systems, the project lives strategically on the culture of the places, involving persons, tools and processes. Having an outlook on the development of these new manufacturing economies, smaller and more widespread, not for this less strategic in presenting themselves on the market, the Project emphasizes the geography of production of the several regions, placing designers and companies at the center of a new design approach, to create an excellent synergy towards new international markets. Finally, resulting from the connection and managing of the five regional system (with the remodeling and completion of the Campania system and the creation of the other four regional systems), the System of the systems will work as a whole cultural district, aiming to become the “Silicon Valley of Arts and Crafts”, where material culture and enterprises could meet together and cooperate in an advanced network, highly reliable, influential and competitive.

THE SYSTEM OF TERRITORIAL DESIGN SYSTEMS.
Cultural tourism, craftsmanship and design for the local development of the production enterprises of excellence in Southern Italy and Made in Italy

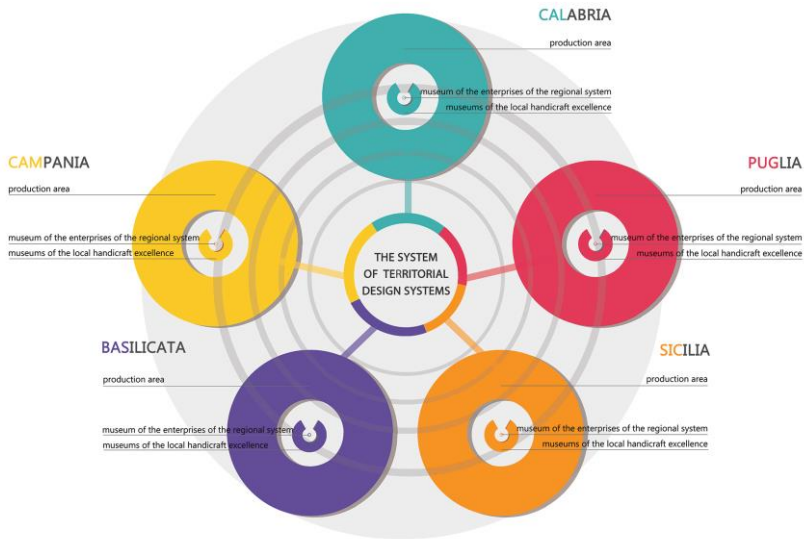


Figure 1: System scheme

METHODOLOGIES OF THE PROPOSAL

The methodologies of project management aim at the coordination of the several Research Unit (RU), for the establishment of the regional systems, the governance and the functioning of the entire Project, by means of a web platform for networking, purposely designed. The Project foresees a first stage of development of a three-year plan for project management, among the RU of the involved regions and all the players of the system, through planning activities, scheduling of meetings and video calls, report and monitoring for the regular review of the goals and the supervising of the achievements.

For mapping and selecting museums to involve in the System, each RU will use several methodologies of examination, including literature and online research, in field investigation, interviews and on-site inspections. Similarly, it will be conducted the investigation of manufactures and local material culture of excellence, as well as of any

experimental production, realized also with innovative materials and digital fabrication technologies in the areas of studying. To map the enterprises, the practices shall regard the collecting of quantitative and statistical data from the databases of trade associations, websites and companies, the use of interviews and surveys, the meetings with the stakeholders.

With the help of Universities and by means of the web platform, they will be launched calls for the selection of the designers, giving priority to young graduates from the South. Besides, the Project envisages the adoption of co-working for the design activity and the interaction among companies, craftsmen and designers. Thanks to workshops, on-site inspections and the coordination of the actors in play, the Project will arise as a facilitator for innovating methods and products. Moreover, the System shall adopt the digital fabrication to guide enterprises and craftsmen towards a new digital manufacture, using educational workshops, makerspaces, centers for the craftsmanship. Furthermore, thanks to modelling software, 3D printers, and other high tech appliances, the Project will start paths of innovation and training in support of the local manufactures, that will allow the involved companies to return on the market strategically and in a recast form, also introducing new merchandising products.

For the setting up of the enterprise museums, they will be used the following instruments: wayfinding, to be understood as signage, system of product, communication and service; illustrative panels and intertitles; publications; other products for the bookshops. The Project foresees, moreover, interacting totems and the adoption of AV and VR technologies, for the storytelling of exhibitions and products, thanks to smartphones and tablets. The intention is to fully integrate ICT and IoT technologies in the museum spaces, to improve the corporate communication, deepening the relation between users, objects and museum and enlarging the experience, thanks to tradition and modernity, low-tech and high-tech mixing together. In this sense, they could be foreseen also projects for new settings in existing museums, in accordance with the single Directions.

The project provides for a strategic methodology for the communication of the whole System, by means of a corporate identity and the connection with the social media (YouTube, Facebook, Twitter, Instagram) of the interacting and responsive web platform (Ita/Eng), regularly updated with articles, contributions and newsletters regarding the entire Project. The method foresees the promotion of the System through digital marketing strategies, such as ad-word campaigns and

social adv, and thanks to the development of apps devoted to the interaction. Furthermore, the museums of enterprises become the places of choice for studying and recasting a shared code for the construction of the image of the Project, able to strengthen a baseline community which could outline new cultural landscapes through a participatory planning. For the dissemination, they will be activated projects for exhibits, lectures and workshops in partnership with Italian and foreign authoritative players.

The Project will involve also Alpay Er, professor of Industrial Design at Ozyegin University of Istanbul, for the Euro-Mediterranean expansion of the PRIN.

CONCLUSION

The “System of the Regional Museum Systems” aims to become the “Silicon Valley of Arts and Crafts”, in order to enhance the sustainable local development and the youth employment, in every region involved in the project, through the valorisation of their own uniqueness. According to a market-oriented planning, and pivoting on the power of both the cultural heritage and the communities’ affection, the project will strengthen the existing craft industries and the development of new ones, and of new business models, within the “Handmade in Italy” scenario. In this perspective, the project-idea takes shape in a supra-regional system consisting of the five territorial systems, both physically and virtually, under the direction of ad-hoc steering committee composed of public players (Ministry for Cultural Heritage, Ministry of Education, University Departments, professional associations, various institutional actors, regions, city councils, etc), private stakeholders (small and medium-sized companies, economic operators, professionals, etc.) and the third sector (social enterprises).

Creating a network, the local museums become more visible and improve their significance more than remaining isolated structures. The introduction of hi-tech facilities, the relationship with the companies and the enterprise museum as pivotal element of the systems, can trigger a virtuous process in qualifying cultural and tourist attraction. Moreover, it can contribute also to preserve high-value collections and museums, often totally neglected for years. Considered from another point of view, also to the purpose to establish new productive trials, these museums can become an exceptional whole of marks, that can be interpreted and organized in a common code. Universities themselves, which activated degree courses in Fashion and Design, are encouraged to tailor their

education offering in a way more specialised than Universities of other geographical areas. They are to be highlighted too: 1. the activation of important, innovative sectors of merchandising, arising from the project “Handmade in Italy” thanks to the interaction design/craftwork/digital manufacturing, and meant to be sold in the bookshops of the SYSTEM. 2. The extending market opportunities for other “products”. 3. The improvement of the transfer of expertise acquired in a sector to similar fields (spin-off, start-ups, open innovation, etc.).

First of all, the project idea aims to take action on the youth employment, as youth unemployment rate in Southern Italy is twice the average of centre-north Regions (ISTAT 2018). Furthermore, according to CUID data (2017), the number of students attending Design degree courses is exponentially increasing, and this meets a clear answer on the market (Design Economy, 2017). In addition, the project idea is perfectly in line with the government and regional policies (programs and funds firstly allocated to youth, starting with the so-called “Resto al Sud” action). For example, the Regional Council of Campania, by its Decision n.633/2017 has deployed a variety of resources to sustain local craftsmanship and productions, strongly rooted within the territory. Finally, thanks to the project the communities can establish an unprecedented synergy, highlighting their own specific geographic features and cultural heritage, and so improving the reliability and accountability of Southern Italy, nationally and internationally.

The project idea wants to contribute to the strengthening of craftsmanship in the South, in order to help the Southern industries to restart, as it has been experiencing recently (Svimez, 2017). Campania, thanks to the manufacturing, which is the leading sector, is the Italian region where there were the highest rate of development in 2016 (with a GDP growth of 2.4%), an employment growth more than 5% and exports rising almost at 3%. Combined with the possibilities of Industria 4.0, the Design can contribute with its specific added value. Therefore, the PRIN aims to heighten the development and competitiveness of craft industries where Design and digital technologies have a key role in innovating production processes; it is intended also to the promotion of new models of production and business, strictly tied up with the peculiar features of the involved territories. The measures foreseen in the project will be coordinated with the financial opportunities, feasible at multiple institutional levels, starting with the EU’s framework programmes, in order for first of all, integrated.

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THE OLD STRAIGHT TRACK: WALKING THROUGH HISTORY, ART AND PLACE.

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ABSTRACT

The importance of site-based learning and the way this can be transferred from urban design to other disciplines and subjects where understanding place is (or is becoming) important is the overarching topic of this paper.

Central to urban design appreciation is the walk, the exploration of a place in time and space. It runs through from the founding fathers of Camillo Sitte and Raymond Unwin both give importance to this and it reaches its apotheosis in Gordon Cullen's Townscape. This paper discusses the various 'walks' undertaken in my own work in this tradition from my first undergraduate explorations through an extended perambulation of a dissertation and topic based post graduate research to teaching graduate and undergraduate students – introducing them to urban history and making sense of new and unfamiliar places. The paper concludes by introducing the idea of applying this approach to the geographical dimensions of art history ('Kunstgeographie' or what is now called 'Geohistory of art') through current work in place specific contemporary art in post-communist Romania.

KEYWORDS: urban walk; interpreting places; transfer of ideas; urban history; contemporary art; geohistory

INTRODUCTION

This paper discusses the importance of site-based learning and the way this can be transferred from urban design to other subjects where understanding place is (or is becoming) important. The examples used are all from my own work and this paper is very much a (brief and closely focussed) bildungsroman (The term means something like a 'coming of age novel' and dates back at least to Wilhelm Meister's Apprenticeship by Johann Wolfgang Goethe in 1795–96 and was legitimized in critical usage in the 1870's though it had been in use since Karl Morgenstern the German philologist coined it 1819).

Although I have trained in and practiced as a urban designer and conservation officer in local authorities (Jarvis, B 1994) and at a New Town Development Corporation and taught urban planning and design and conservation I am now doing research in 'Art History'. This paper discusses how the central, place-based experience that is at the core of urban design can be applied to art history. After a short coverage of the role of the walk and experience of the walk in the history of urban design, I review the development, first of my own urban design training and practice and then of my teaching methods in 'the old straight track'. I chose the title deliberately to evoke Alfred Watkins (Watkins, 1925) rather contentious but still influential book (it can be seen as a source to current psychogeographical writers, such as Iain Sinclair) and so introduce a wider frame of reference that the all too often 'hard hatted' world of urban design.

I learned from my PhD research that the first-person narrative is a legitimate approach to social research – to be precise my External Examiner said 'Bob, we know this about you. It would be much easier to read in the first person', although I cannot claim this to be an original approach. The research drew on a tradition of naturalistic enquiry traced back to Glazer and Strauss (1969) and Glazer's earlier defence of paper written without field notes around long experiences and personal experiences (Davis, F,1959). The key reference of this methodology was the work of the American sociologist, Jack Douglas (1976) and his acceptance of shared personal experience as the best way of understanding the world and its meaning to participants; for him and his collaborators, self-observation was not introspection but concrete and situated reflection.

This paper first considers the precedents in the key urban design literature (it is not a full history, but a discussion of the relevant writers) and then proceeds to a chronological review of my own 'walks' – as an

undergraduate student, as professional in practice, and then as a tutor to undergraduate and postgraduate students. Though some of the reference material has been lost or mislaid a reasonable attempt has been made to reconstruct material where possible. The concluding section discusses the application of this approach – the walk-through places as a method - to my research in post-communist Romanian art. To steal a phrase from a Grateful Dead song – ‘What a long strange trip it’s been’ (Hunter R, Garcia, J, Lesh, P, 1970)

THE URBAN DESIGN LITERATURE

The opening words of Camillo Sitte’s founding text on urban design place us in the squares and streets he is advising us about and invite the reader to imagine themselves in their presence:

“enchancing recollections of travel from part of our most pleasant reveries. Magnificent town views, monuments and public squares, beautiful vistas all parade before our musing eye and we savour again the delights those sublime and graceful things in whose presence we were once so happy... to linger!” (Sitte, p. 141)

A similar but much more explicit call for the designer, and one which combines the form of the reality of the site with the role of the designer’s imagination to visualize the future form of the city as he walks the site is embedded in core of Raymond Unwin’s textbook a few years later:

“The designer’s first duty, then, must be to study his town, his site their people and their requirements... As the designer walks over the ground to be planned he will picture to himself what would be the natural growth of the town or district if left to spread over the area ...as he tramps along there will arise in his imagination a picture of the future of the future community” (Unwin, p. 140 and p 152).

In his study of Oxford the distinguished planner, Thomas Sharp noted (although it is rarely cited and Sharp is hardly ever mentioned these days)

“A building is usually considered as a three-dimensional still life. But for practical purposes it is in fact always in movement (the fact that the movement belongs to the observer and not the building is incidental). The important thing is that as observer moves the building alters, not only in the relation of one part to another, but in relation to it environment. Thus, whether or not we admit it consciously our

architectural experience is mostly kinetic, the result of a complicated resolution of changing relations” (Sharp, 1948, p32)

The archpriest of the walking observer is Gordon Cullen who frames his whole approach to ‘Townscape’ with the idea of ‘serial vision’:

“Although the pedestrian walks through the town at a uniform speed the scenery of towns is revealed in a series of jerks or revelations... the human mind reacts to a contrast, to the difference between things, and when two pictures (the street and the courtyard are in mind at the same time a vivid contrast is felt and the town becomes visible in a deeper sense... from our optical point of view we have split into two elements : the existing view and the emerging view... since it is an instinctive and continuous habit of the body to relate itself to the environment, this sense of position cannot be ignored” (Cullen, 1961,p11-12)

UNDERGRADUATE STUDIES

Throughout my undergraduate education in ‘Land Use Studies’ (‘Town and Country Planning was one (but in practice the only) optional route) there was repeated emphasis on walking and visiting. In our first week we were set an exercise - ‘clues and places’- in which we were sent to unfamiliar places across the North East (I studied at Newcastle University) for a one day visit with no notes or preparation and expected to write a short analysis – in my case I was sent to Alnwick in Northumberland and Shields Road, a secondary shopping centre in Newcastle upon Tyne. I remember, too, setting off to walk around Castle Rising (a small village near my hometown of Kings Lynn) with a copy of ‘Pevsner’ (Pevsner 1962) and exploring its lanes and the huge mound of the Castle itself.

In the second year, in the depths of winter I was asked to undertake an analysis of the North Sea coast from Blyth to North Shields. To do this I walked in the wind and sleet for two days with my fellow student, Pete Clarkson, and produced a pop-art illustrated poem ‘Not quite summer on not quite Bredon’ An oblique reference to A.E Housman’s poem ‘In summertime on Bredon’(Housman, 1896) which is full of romantic evocations of the English countryside

My tutors did not respond warmly, despite the complex sequences of text and photographs.

Two final year studies were substantial and had a lasting influence on my work and walks. My 'Special Study'(the equivalent to a dissertation) was a series of perambulations and musings upon the place and illustrated with 24 fold out maps and throughout with hundreds of tiny 35mm contact prints (approx. 35mm x 23mm) mounted marginally to the text which itself was organized topographically – the appearance of the town from outside, the patterns of the streets and finally the details of individual elements – in much the same way as a visitor would discover and unravel the place. The text itself is almost lost in this presentation.

A final year seminar paper was not so well received by my tutor. If I recall correctly, he stopped its presentation as being irrelevant. But it expanded the idea of comparing places from the different viewpoints of passing by, approaching and entering and finally moving around in two places that in crude 'land use' terms were the same (Chichester and Durham are both cathedral cities, administrative centres and tourist centres). This included driving as well as walking. The systematic approach to movement and place and the relationship of the observer to place was developed further and reused as a basis first for thinking about urban design at Milton Keynes (Jarvis, B, 1970) – again with questions about its relevance. Planners seem resistant to focussing on people rather than things: though that is another story (Jarvis 1996) and eventually published with a Calvino-esque title that I still savour (Jarvis, B 1984).

POSTGRADUATE WALKS

A two-year research programme of zen-like isolation in urban design 'before urban design was re-invented' followed and included refinements of 'the walk'. Under the direction of David L. Thomas who has been almost totally written out of urban design history and as his former students – David Lovie, Dave Whitney, Steve Owen (and me) become less active and retire it becomes all the more important to include some outline of his work. He wrote what is probably the most difficult and impenetrable text on urban design and had defined 'topographical planning design' as the basis for our research 'tasks' as he called them. He would only let us read his book (Thomas 1970) and (to ensure we did not corrupt language further) The Penguin English Dictionary. He sent us – there were only two of us, me and a Venezuelan architect, Mercedes Ferrara de Perez, - on various tasks to watch and replicate ('simulate' in his words), 'normal activities' on and

around Newcastle. These ‘tasks’ involved everyday activities in urban places: walking and climbing stairways, going shopping and catching buses – nothing special or complex. There is some documentation of them and some of my drawings in James Stewart’s summary article. (Stewart, 2002).

TEACHING URBAN DESIGN THROUGH WALKING

Prepared by all this I started teaching urban design at South Bank Polytechnic in 1987 (It became South Bank University (1992) and then London South Bank University (2003). My principal approach was to develop a series of place based experiential learning projects to focus on what I came to call the ‘real subject of urban design’: everyday life in real places. The title I chose for the , *The Arts of Planning*, was a deliberate stand against the sociologically based rationalism and procedural emphasis of many in the profession and the department , and to sustain the wild spirit of artistic creativity and the idea that planning and design was really ‘talking about places that aren’t yet’.

The evolution of this first-year module began with day visits to Oxford and Brighton and experiments in sequential experiences of space (‘serial vision’) and the ways they changed over time in place. Realizing that the students had little or no introduction to the history of urban form and towns, so a history related layer was added and the four part, walking and talking and drawing unit ‘The Arts of Town Planning’ took its basic form.

These guided walks, pointing out to the student’s places and times of special interest, were open ended and the students were left to focus the aspects of the places and times that they felt they could turn into illustrated displays. The students caught moments of time and place in a range of media – collages and drawings, diagrams and texts.

Urban history was crudely divided into four periods (appropriate to the UK at least) – mediaeval, classical, Victorian and modern – and a specific guided walk accompanied each of them with a piece of visual work (no essays here!) for each period in different media. Collage allocated for the first, mediaeval, period as the easiest to begin; line drawing was for the classical period, colour was held back until the Victorian age and the expression of movement for the modern age. Artists from other disciplines - Jack Rickards, a painter and art historian and Struan Leslie, a choreographer and later movement director at the Royal Shakespeare Company. were involved. The locations for these walks varied over the years as funding allowed. At first the students

work included not only place based studies but explorations of the architectural and artistic styles of the periods. Complaints that this involved too much work led to this being cut in later versions. But the walks still demanded the students walk round with their eyes open.

The walks themselves originally included Lewes – an almost perfect, essentially medieval town on Sussex that not only had all the urban elements – a castle, a ruined priory, a market, a street plan that had hardly changed – and even more helpful as an introduction a historical model with a light and sound commentary. But the costs of getting groups of students meant this had to be replaced with a London visit. Fortunately, the Borough High Street still has many of the characteristics of a medieval street – narrow frontages, rear yards (imagine Chaucer’s pilgrims setting off), relics of monasteries even a bishop’s palace – even if there had been successive rebuilding. And hidden away behind the Church was an excavated palimpsest that went back to Roman times.

The classical age presented no problem and from Horse Guards across the Mall and up and around St James and Regent Street to Portland Place and Regents Park was a varied sequence to follow. Just behind Borough High Street classical compositions for housing and hospitals were another source. The great railway termini (and their bridges and viaducts, goods yard and coal yards) the museums and the range of government buildings along Whitehall and upto Trafalgar Square were other models. The modern age focussed on movement and for several years included choreographic studies around the Royal Festival Hall and the South Bank Centre (Jarvis, B 1996; Jarvis, B and Leslie, S 2001)

Field trips with associated walks and explorations to Venice (over several years), Lille and Turin developed the teaching walk in less familiar places and the development of urban design work in Romania followed. Here the example of the final Venice visit and walk will serve to illustrate these far-flung explorations. It completes the circle: Mr Cullen goes to Venice was an invitation to students to apply his ideas of serial vision to Isola di San Pietro which had been suggested to us a ‘suitable case for treatment’. This island is at the far north eastern edge of the historic group of islands and as a ‘dead-end’ beyond the Biennale Gardens and Arsenale it is rarely visited, its neighbours boat repair yards and housing projects. The students’ walks there opened new possibilities and connections and they found there sites for new projects linking this forgotten part of Venice into the rest of the city.

CONCLUSIONS: APPLYING THE URBAN DESIGN WALK TO THE GEOHISTORY OF ART

My current research in the Department of Art History, University of Sussex- Art in Post-Communist Romania –the of influence social and environmental contexts- focusses on the relation of the ‘reality’ of place to its representation in contemporary Romanian art : its working title is A review of sources as the introduction to compiling a ‘Catalogue Raisonné’ of the critical presentation of the topography and society of post-communist Romania in art. This research grew out of my urban design work and my interest in Romania (Jarvis, B 2010)

One of the strands of art historical research that is relatively underdeveloped, at least in the UK is ‘kunstgeographie’ (now usually referred to English ‘the geohistory of art) and this research will bring together art historical and urbanistic perspectives within that field. But even so kunstgeographie still focusses on the individual work (whether it is a painting, a sculpture or a building) and there is no evidence of methodology for dealing, as my work must, with the wider urban field and the selection and treatment of places. In Thomas DaCosta’s (re)introduction of the subject (DaCosta, 2004) for instance, there are only two maps – one from Jonathan Swift’s Gulliver’s Travels, one of the location of parish churches in Potosi, Bolivia.

An example to conclude. One of the key pieces in my research is Ion Grigorescu’s 1993 film Drumul: Noua axa a orasului (The road: New Axis for the city) Grigorescu (b. 1945) is the doyen of Romanian artists who worked both in the Communist era (largely ‘under the radar’ of state control and worked on church restoration while making more personal and critical works) and he is still active today. His use of a walk across the disrupted and disjointed urban landscape on the cusp of the new post-communist age – it shows a landscape of half-finished projects and discarded building materials – provided me with a key to organize my wider searches which was also part of my urban design repertoire of methods. (Serban, 2013; Museum of Modern Art Bucharest, 2018). This piece because it is itself a walk is especially relevant.

Once I have confirmed the artists and the localities which they depict (Jarvis, B 2019) it will be possible to undertake a series of walks setting their works against the real places – what they emphasise or omit, add or collage in, the way they treat light and space, -bringing topographical method as well as focus to kunstgeographie through the application of walking as method.

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THE STRUCTURAL PLANNING OF THE MUNICIPALITY OF DIAMANTE

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ABSTRACT

An urban plan, whatever the level and size of territory it invests, must necessarily have at its base disciplinary considerations, methodological criteria, values and cultural principles, reflected in the contents of the instrument. These only partially pertain to the training, experience and vision of planners and administrators. In fact, it is in urban planning legislation that the cultural bases that give substance to the plan must be traced.

The article examines the evolution of the regulatory framework of urban planning in the Calabria Region – which saw the introduction of the “Municipal Structural Plan” (PSC) in place of the old General Urban Development Plan (PRG) – analysing the its impact on the shape, strategy and design choices of new urban plan of Diamante” (Calabria region, Italy).

KEYWORDS: urban planning, territorial transformations, territorial governance

INTRODUCTION

Since the year 2000s, the Regional Law n. 19 April, 16 -2002 and the following ones, issued to modify and integrate the Calabria Region legislation, implemented a progressive review of the territorial governance laws, in order to adapted the legislation to the new legislative framework as well as the new conditions and development needs of the Calabria territory.

“Safeguarding the physical and cultural territorial integrity”, “improving the citizen quality of life”, a productive development together with an appropriate use of environmental resources”, “social equity”, “transparency”, “containment of soil consumption”, these are only the main keywords that guided the legislative reform action; an action that materialized, for the most part, through the continuous improvement of territorial governance processes and instruments, with the aim of improving, at least as intention, the quality and efficacy of the following specific aspects:

- a clear definition of competences, limits and institutional hierarchies.
- technical-administrative procedures simplification.
- cooperation methods and consultation among institutions.
- level of citizen participation in the construction phase and in the choice’s genesis.

Regarding, specifically, the general urban planning at municipal level, the Regional Law of Calabria has introduced the “Municipal Structural Plan” (PSC), which aims to specify “the strategies for the governance of the entire municipal territory” and which replaces, in the functions and objectives, the General Town Plan provided for by Law 1150 of 1942. Compared to the Town Plan, in which prevails a prescriptive approach, the Municipal Structural Plan recognizes the programmatic and strategic role of the Town Planning Instrument of general level. Instead, the task of detailing the management rules and the design of specific areas subject to protection, recovery, transformation and development is delegated to operational planning (and in particular to the “Time Operational Plan”).

The experience of PSC of Diamante fits into this legislative context (still evolving). This experience, started in June 2008, with the activation, by the Municipal Administration, of a procedure for the “Constitution of the working group to draft the Municipal Structural Plan”, assigning, internally, the position of editor of the plan to the head of the Public Works Sector, Eng. Tiziano Torrano; subsequently, in July

2009, the Municipal Administration entrusted the task of urban and environmental consultant to an association of urban planners headed by Prof. Pier Luigi Carci.

After a long and complex elaboration process, on October the 22nd 2014 the new PSC was adopted by the City Council, transmitted to the Region, Province and Competent Authority for the purposes of the “Strategic Environmental Assessment” (VAS) and published, to allow, as required by law, to institutions, associations, economic subjects and citizens to propose changes.

Currently, for its final approval, the PSC is awaiting the opinion of the VAS Regional Commission.

DIAMANTE MUNICIPALITY

The Diamante Territory presents, in general, the morphological, environmental and settlement features recurring and characterizing the northern Tyrrhenian coastal system of Calabria, but which here assume particular quality and value. Diamante, in fact, with its naturalistic Excellences (including the Isle of Cirella and its seabed, Site of Community Importance- SCI) and historical-cultural sites (i.e. the ruins of the ancient Cirella), it is known as one of the places of greater tourist interest in the Tyrrhenian-Cosentino coast. With a resident population of about 5,000 inhabitants, in summer due to its strong tourist-seaside vocation, the municipality of Diamante reaches more than 27,000 presences.

The approximately 8 kilometers of coastline, along which the municipal territory develops, are characterized by a sequence of volcanic cliffs alternating with extensive stretches of sandy beaches. The two most important cliffs, which take the form of prominent headlands above the sea, lodge the two main historical centers: to the north, the built-up area of Cirella and, to the south, that of Diamante. The coastal plain, about one kilometer deep in the northern part, narrows more and more, forced between the coastline and the sinuous hills, until it reaches the width of just 100 meters in the southern area of the municipal area.

Except for the large plain area located north of Cirella, at the mouth of the Vaccata stream, in which agricultural activities still prevail, the rest of the coastal strip of Diamante is rich in infrastructures and, today, almost totally urbanized. In fact, the agricultural plot, which developed close to the historical settlements and their first expansions, has gradually been substituted by heterogeneous constructions

consisting, in part, of one or multi-family houses, in part, of residential buildings with three to five floors. It must be said, in fact, that since the 1970s (like most of the Tyrrhenian Coast, Cosentina) the municipal territory of Diamante has been subject to an intense and decomposed urban-building development, driven by the growing tourist accommodation demand and, in part, helped by an improvement in the accessibility to the area, consequent to the strengthening of connection infrastructures, in particular, opening of the State Road n. 18 “Tirrena Inferiore” (SS.18)

In more recent times, even the hilly areas near the coastal plain have undergone a settlement development characterized mainly by tourist-residential construction and, in some cases, hotel accommodations. The substantial saturation of the coastal plain, the strong relationship with the SS. 18 road, and the progressive abandonment of rural practices, have, in fact, stimulated the gradual transformation of these areas, even in locations that are steep and almost inaccessible. Here, crops and rural buildings have given way to tourist-residential settlements, which are autonomous from a morphological point of view and, almost always, organized as private independent districts.

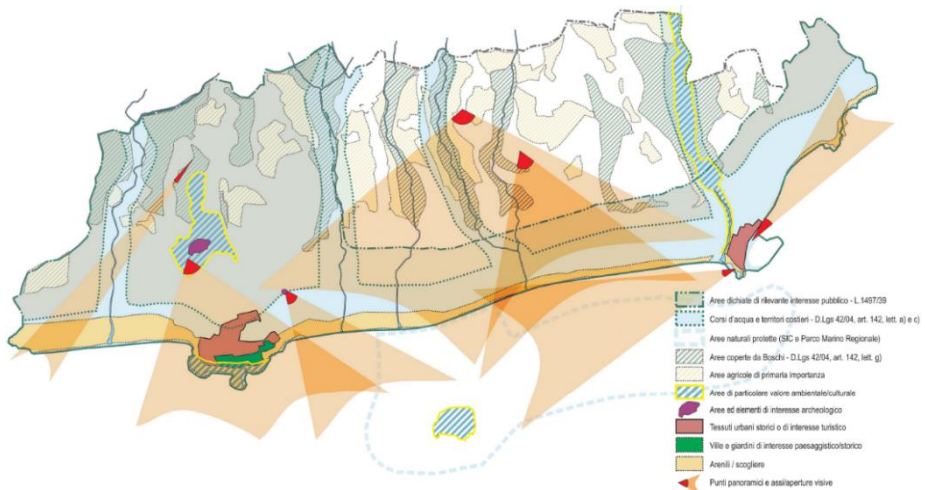


Figure 1: PSC Diamante - Summary of historical cultural values and sensitivities of the territory of Diamante

PREMISE TO THE PLAN

The address lines of Municipal Administration

At the start of the new planning activity, the municipality of Diamante, owned a “General Town Plan” approved in May 1998 and, subsequently, subjected to variant (“Variante di riequilibrio 2001”) in March 2004. The inadequacy of this existing instrument to respond to the renewed needs of government and to the changed regulatory framework was established in 2008, and the activities for its revision started in June 2008, when the City Council defined the general guidelines to elaborate new instruments based on the assessments summarized in the following general consideration:

- “The natural, environmental and historical-archaeological resources are limited, and they risk an irreversible degradation if not adequately protected. Therefore, the adoption of new strategies for the safeguard of the environment and the development of a collective sensibility oriented to support eco-compatible behaviours and lifestyles are considered fundamental. Diamante, Cirella and Contrade must be an example to the whole Riviera, aiming at a sustainable development that will not compromise the quality of the landscape and naturalistic heritage of the territory.”
- “The Urban regeneration to re-establish the territory “values” or introduce new ones in order to improve the quality of life and to provide new opportunities for development and to promote (support) the tourist appeal of Diamante.”
- “Promote sustainable development and protect the territory means to implement an economic growth, capable of supporting a correct interaction among man, environment and resources. There are many aspects in the municipal competences requiring significant attention: waste management, purification, air and water quality. All actions have to gravitate around the centrality of Environmental protection and enhancement, understood as a single, unitary and non-reproducible resource. “
- “Our territory would face a great opportunity if it was granted by an adequate process of economic and social growth (enhancement of available resources, labour, products and services market reform, creation of specialized jobs and new sources of productivity). Therefore, we want to propose a programmatic and shared development plan, made of

consistent, methodical, concrete, innovation and widespread promotion of our typical products. “

Taking in mind these considerations, it is evident as the Administration political and programmatic objectives referenced to a framework in which the Plan revolves around an idea of sustainable development of the territory, which should be reached through:

- the Protection of the environment in all its aspects and components;
- the Safeguard and recovery of historical and cultural heritage;
- the Optimization of resource use;
- the Enhancement and promotion of areas and elements of the environmental, the landscape and the historical-cultural value of the location, to promote the tourism industry.

Planning Conference - The Preliminary Document

Developed as part of the preparatory activities for the composition of Diamante PSC, the Preliminary Document (DP) - provided for in paragraph 2 of the art. 27 of the L.R. n. 19/2002 and s.m.i in order to gather the opinions of the interested bodies during the Planning Conference – it anticipated the cognitive framework and the preliminary design choices. In this sense, the Preliminary Document represented a moment of comparison and verification of the choices being made by the interested territorial bodies and the population. A moment of confrontation that allowed - before outlining the new urban / territorial structure and the contents of the framework that will guide and control its development - to define in a conclusive (and shared) way both the impediments to transformation as well as the potential and the propensity for development of the different municipal areas.

The need to specify such an intermediate reference scenario before establishing the new urban and territorial architecture also stems (derives) from the awareness that territories such as those of the Municipality of Diamante have a strong rigidity with respect to planned transformation and reorganization processes.

The contribution of participation

The article n. 11 of the Regional Urban Law providing the procedures for the formation and approval of territorial government instruments, including the Municipal Structural Plan, states they must provide the following essential moments:

- the consultation (phase/moment) with economic and social forces as well as with technical-professional categories, regarding the strategic and development objectives to be pursued;
- the consultation with citizens and local associations set up to protect widespread interests.

The objective is to allow a democratic involvement of citizens, associations and economic subjects in the definition of decisions affecting the quality of life, having significant economic impacts on some of these subjects and (in general) able to modify the legal conditions of the areas. In order to meet the people need for participation in various forms, the Municipality of Diamante has activated, as part of the activities for the preparation of the Structural Plan, forms of involvement provided for by current legislation through the organization of public meetings and the implementation of a specific dedicated public online service.

Thanks to the meetings with the population and the established electronic channel, a certain number of observations and requests were collected, all carefully considered, evaluated and, in some cases, acknowledged in the drafting phase of the PSC. Furthermore, we want emphasize, as the moment of participation has provided the Plan designers with the opportunity of deepen their knowledge of the areas of planning, acquiring a multiplicity of points of view, so to have a broader and more real picture of the territory and its demands.

PLAN STRUCTURAL OBJECTIVES AND STRATEGIES - THE GUIDING PLAN SCHEME

On the basis of the acquired knowledge and the made evaluations, also through, as seen, a close cooperation (exchange - comparison) between the administration and the population, the PSC sets its own “structural objectives”, formally mapped in the “Guiding Scheme of the PSC”, relating to three general purposes: “conservation and enhancement”, “redevelopment and rebalancing of the territory”, “sustainable and equitable development”.

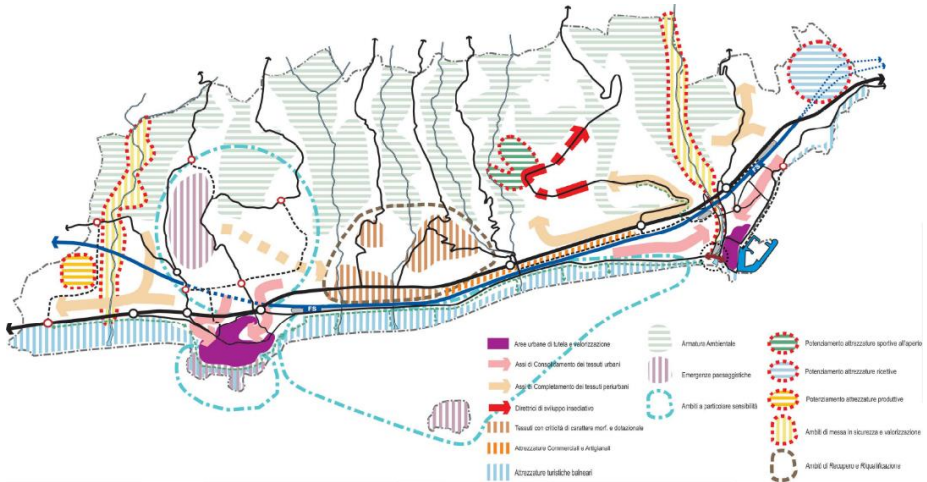


Figure 2: PSC of Diamante – Redevelopment and rebalancing of the territory - Reorganization and strengthening of the internal relationship system

Conservation and enhancement

The cognitive analysis carried out on the natural and anthropic system in the context of the PSC, which document the richness of the environmental, historical, cultural and archaeological heritage of the Diamante territory, highlight also some deficiencies and critical issues concerning the scarce usability of part of this heritage, and the progressive erosion of its quality due to the settlement dynamics. Due to these remarks, the Plan makes a special effort to identify the areas of cultural and landscape value, including potential, and promoting their protection, redevelopment and, where appropriate, tourist use. In particular:

- Coastal areas :the PSC has planned to protect, with strict limitations to the transformation possibilities, the areas located close to the coast, that are still intact; to improve the accessibility to beaches, redevelop and functionally enhance, with temporary facilities (to be removed at the end of the tourist season), the amenities of the beach areas. Furthermore, the waterfront is to be redeveloped with the construction of a pedestrian and cycle walk, the enhancement of the vegetation and the construction of parking areas.
- Areas of archaeological interest: substantially lacking adequate accessibility and forms or elements of protection,

for these areas have been introduced “protect zones”, within which the transformation activities are limited to interventions, of low impact, aimed at improve the accessibility and use of the areas themselves.

- Historical settlements:
 - recovery and rehabilitation of the residential social fabric and the renewal of the urban infrastructure by harmonizing the needs of socio-economic regeneration with the preservation of historical-architectural and environmental values and characteristics;
 - the enhancement and re-use of areas and buildings, in the context of strengthening receptive services and structures, as well as commercial and productive artisan production; these latter activities besides characterizing the traditional local economic reality, can also affect the overall urban quality of life and tourist attractiveness.
 - The safeguarding of the “environmental landscape scenario” of which the historical fabric is part.
- Areas of natural and landscape interest: This tool identifies areas that - due to their natural characteristics and cultural value or their spatial relationship with other places or valuable elements - cover or may cover significance and landscape interest. The objectives defined for these areas are the protection and possible enhancement of their characteristics, based on the following actions:
 - protect, through the establishment of “protection zones”, areas of particular naturalistic value or landscape significance not already included into protection zones;
 - preserve as much as possible the current land coverage, directing building expansions and urban transformations into agricultural areas of minor environmental and landscape value (impact).
 - allow and encourage all interventions and transformations activities being functional to the conservation of traditional agricultural activities and, therefore, of the original agricultural landscape;

Redevelopment and Enhancement

The PSC pursues (pursued) furthermore, the purpose of a redevelopment of those parts (in the urbanized territory and/or

somewhere else) lacking in quality, in order to render them more appealing and usable, through:

- coordinated actions for urban and building redevelopment of zones in urban degraded areas;
- Attendance on provisioning (endowments) when there is a lack of structures, in order to guarantee what the legislation contemplates, and, in other cases, to improve the existing supply of equipment and services so to improve the offer to residents and tourists;
- Development and reorganization of the roads and parking facilities to improve:
 - the accessibility of the hill settlements and their relationship with the coastal settlements and the seaside / beaches
 - the accessibility of urban municipality responsibilities and functions (Schools, cemeteries, railway stations, etc.) and of the Port (under ongoing strengthening).
 - the relationship improvement between the settled territory and the seaside, when hampered by the physical barrier represented by the SS 18 and the Railway.

Sustainable and equitable territory development

Regarding this specific purpose of the PSC, the instrument intends to promote and favor those development processes and those economic activities that can establish a positive relationship with the environment and its resources and at the same time, constitute an opportunity for lasting (durable) growth and a fair distribution of resources. In this sense, the Diamante Structural Plan considers essential:

- complete and diversify the tourist offer of the coast and of the hills, to intercept not only the summer tourism related to the presence of seaside activities;
- support the development of craft and commercial activities by strengthening the relationships between the tourism and production sectors (circulation and promotion of agricultural products and local crafts);
- encourage the establishment of new productive activities by offering new areas suitable from environmental and accessibility point of view;

- to encourage the implementation and introduction of commercial and accommodation activities within urban areas, determining the conditions for the recovery and re-use of existing buildings;
- favor the implementation of new processing economic activities in order to extend the resulting economic benefits;
- guaranteeing an equitable distribution of the real estate values resulting from the urban planning as well as of the burdens deriving from the realization of the territorial endowments, through the acknowledge of same building opportunities to the different areas, when presenting homogeneous characteristics, *“so that to the same state of fact and law, it will correspond an equal capacity of building right”*.

The evaluation of “Overall settlement capacity”

The Regional Planning Guidelines (drawn up pursuant to article 17, paragraph 5, LR n. 19/02) highlight as the need to achieve a sustainable structure of the territory, it requires a “new and different methodological path”. This different path should account for a different approach where, the forecast of possible future demographic structures (often questionable) and the consequent sizing of the Plan, is replaced *“by the definition, more certain and objective, of the territorial structural framework and by the construction of scenarios compatible with its conditions. In other words, the Structural Plan’s objective is to identify the overall settlement capacity of the territory, regardless of the demographic or socio-economic development forecasts, starting from the conditions of the environmental resources (air, water, soil) and the anthropic resources (landscape, historical testimonies, infrastructures, etc.)”*.

In line with what is indicated in the Guidelines, the hypotheses for the future structures of the of Diamante territory, elaborated in the new PSC, are based on the identification (understanding) of the “transformation (susceptibility) ability” of different areas in the territory; this task (activity), taking concrete form through an articulated process of progressive selection, aimed at identifying all the areas characterized by a more or less high impedance to transformation, (will organize the different zones as following) :

- Areas having a high naturalistic, landscape and/or cultural-historical sensitivity;

- Areas subjected to high levels of hydro-geological, seismic, hydraulic risk etc.
- Areas of particular agricultural value;
- Areas for which the transformation process results not feasible or inappropriate, due to location, accessibility or intervention complexity.

These analysis resulted in the identification of what the Regional Urban Law defines as “urbanisable territory”, excluding the infeasible areas and net of the already urbanized ones, where the transformation potential and, therefore, the settlement capacity, results from a transparent evaluation of the environmental characteristics and the functional vocation of the different identified areas.

CONCLUSION

On one side, it is possible that - within the framework modalities indicated by the Calabrian Regional Urban Planning Law for the construction of the Territorial Structural Framework - the overall settlement capacity assessed by the PSC exceeds the supposed needs, in the short-medium term, but the other side, the conditions are planned in order to better intercept, in the medium-long term, the programming and propulsive capacity of the private operators market.

Respecting the first possibility (exceeding short-term needs), it is worth emphasizing that, as far as propulsive the Diamante PSC is concerned, the application of the above illustrated criteria and methods, made possible to achieve a significant transformations containment with respect to the previous PRG. In fact, both the consumption of land and the expected potential urbanity load, with the new instruments will be at a slightly lower level than those programmed in the previous PRG. This because a certain number of areas identified in the previous Plan with the purpose of being expanded and not yet implemented, will not be expanded. These areas, in fact, were not implemented both because they are considered unsuitable for transformation due to environmental or functional reasons, and because of the low propensity of the owners to transform.

In any case, beyond the considerations that may emerge from the dimensional comparison between the choices of the PSC with those of the previous Plan, the sustainability of the development forecasts of the new plan was verified in the Environmental Report for the purposes of Environmental Strategic Assessment. Moreover, the in-depth thematic analyses and the evaluations carried out in the context of this activity

have allowed - also thanks to a recursive process of verification and gradual adjustment of the choices of the Plan - to integrate new environmental considerations into the elaboration process and thus elevate the “environmental performance” of the overall Plan.

Notes

This article is translated by Giuliana Bondanini

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TIRANA AS CONTEMPORARY LABORATORY: LIVING THE “GREEN BELT”

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ABSTRACT

The city of Tirana, its history, its planning and its recent transformations, highlight a multiplicity of issues that cross several disciplinary fields and contemporary problems.

Despite being the result of inconsistent transformations, today it is a very active laboratory in the research of the urban form, in the application of planning principles and in the experimentation of implementation mechanisms of the contemporary project.

The research that has been carried out in recent years at the School of Architecture in Bari on the form of Tirana and its sustainable development, has been compared dialectically with Boeri's Plan. It highlights many themes today at the center of the debate on the transformations of cities in the West as well in the East: the ecological dimension of the city, the contemporary urban form, the preservation of the traces of the historical city and architectural heritage, accessibility and sustainable mobility.

Therefore, together with the elaboration of the Boeri's Plan and then in the phase of its implementation, this problematic field has been explored, elaborating pilot projects that would face in an integrated way the themes mentioned, starting from the most problematic components: the peripheral fringes, dominated by the informal settlements, the disused industrial heritage, the peri-urban and rural space around the city.

The first Degree Workshop dealt with the theme of the “green belt” of Tirana, understood as an ecological evolution of the design device that crossed the history of the city and of twentieth-century urban planning, building a green infrastructure project that winds at different scales and designs new spatial arrangements capable of representing a renewed identity and new prospects for sustainable development for the city. Subsequently, a second Degree Workshop focused on the marginal area near the Kombinat, experimenting “new forms of living”, through a housing complex created from scratch and interventions for the redevelopment of the existing informal residential fabric, with the aim of verifying strategies and methods applicable in similar contexts.

KEYWORDS: Tirana, Contemporary urban planning, Green belt, New forms of living

INTRODUCTION

In the context of the studies on the Balkan area that have taken place in the Degree Course in Architecture in Bari for more than a decade, the case study of Tirana has been taken as a particularly significant example because it is a complex and problematic city that it has had the greatest growth in the modern era and is still subject to great building development. The Albanian capital, although the result of inconsistent, contradictory and conflicting transformations, is now a very active laboratory in the search for urban form, in the application of the principles of planning and in the experimentation of the mechanisms for implementing the contemporary project. Since the beginning of the 2000s, the Architecture Studio plan, the experiences of Studio Dogma and the Berlage Institute, the Grimshaw project, Boeri's recent plan, testify to the willingness of the Municipality of Tirana to make this urban reality fully participate in the international debate on the development of western cities.

The two master's degree Workshops "Tirana Greenbelt" and "Tirana: new forms of living" have integrated theoretical-methodological research with design experimentation, involving the disciplines of Architectural Design, Urban Planning, Types of Buildings, Urban Sociology, Archaeology and Cultural Heritage, Architecture Technology. They studied the forms of settlement and housing developed over time in Tirana, corresponding to different ideas of planned cities or spontaneous growths, which overlapped, grafted or flanked and which currently largely coexist disorderly in the central and peripheral districts: from Ottoman settlement, to the Italian city to the socialist one, to informal development. The homogeneous parts that characterize the contemporary were then identified, analysing the relationship between orography, urban morphology and building types, and making a sampling of the existing.

Finally, the Master Degree Workshops have faced disciplinary innovations in the field of environmental sustainability and the pressures on urban ecosystems in the contemporary era; themes that have been found and explored also in the most recent product planning tool for the city of Tirana, the Boeri plan of 2013.

TIRANA GREEN BELT

Green Belts, Ecological Networks and Green Infrastructures represent the cultural and methodological references in which the project for the Greenbelt of Tirana was developed, reinterpreting a

fundamental design figure in the history of urban planning - the green belt - in the light of the most recent innovations in the field of disciplines and policies for environmental sustainability. Tirana Greenbelt, in fact, represents both an instrument of environmental and ecological requalification of the vast metropolitan settlement and a project of landscape and urban requalification and definition of its form.

The field of application and experimentation is the area of “Durana”, the large region that involves the municipalities of Tirana and Durazzo, the major national infrastructures, the natural coastal and internal systems and within which the Plan Tirana 2030 provides for the construction of the ‘orbital forest’ with almost 3 million trees, including protected parks and nature reserves aimed at preserving and nurturing the existing biodiversity, which will mark the border beyond which it can no longer be built (Boeri, 2017).

“Durana” today presents the characteristics and criticalities of large metropolitan areas that have grown with discontinuous planning and are affected by recent, sudden and informal development processes; it is therefore characterized by a high unplanned settlement area, which has strongly compromised the rural territory and the recognizability of an intentional relationship between urban spaces and the countryside.

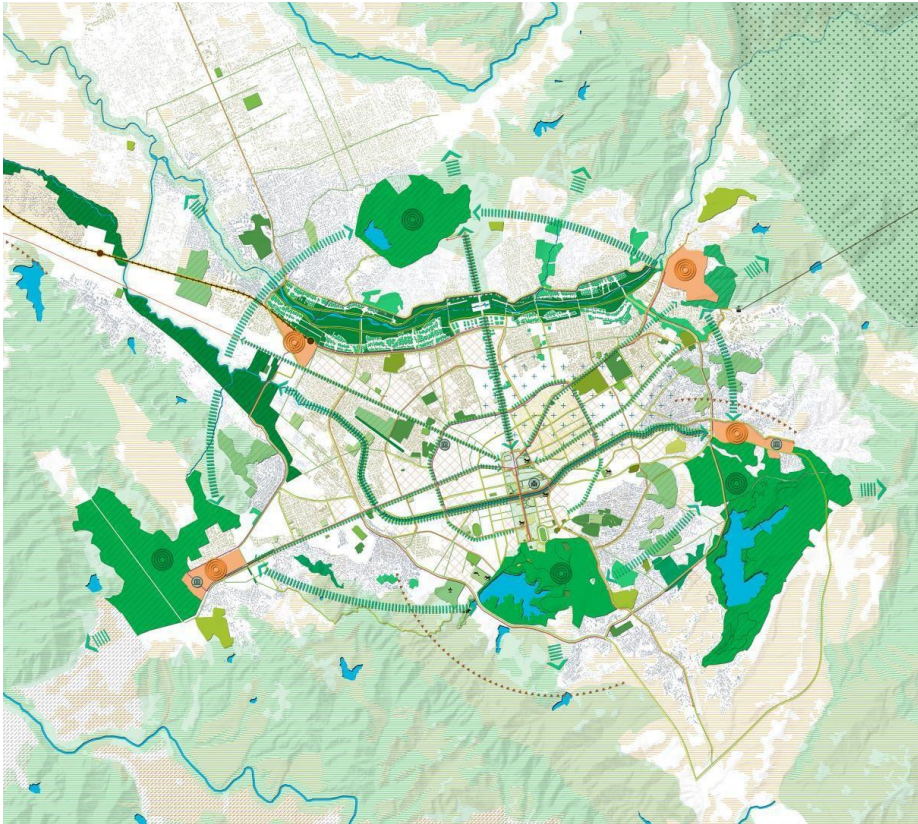
The area is now a laboratory of particular interest for the proposed experimentation as it is crossed by phenomena that, although present in European cities, here are traceable with a particular intensity: the process of industrialization and de-industrialization, which has taken place in just 30 years; the rapid spread of informal settlements, large functions and architectures, often completely decontextualized, in the open territory and along the lines of territorial connection; the impoverishment and degradation of the historical and cultural heritage; the abandonment of the practices of maintenance of the territory, which failed with the end of the regime, which has further compromised the delicate environmental balances. Not only: the recent administrative reform (2015) has led to the annexation to the municipality of Tirana of almost all neighboring municipalities, consisting of informal settlements that have developed since 1997, which now represent 2/3 of the population of Tirana. For this territory a way of sustainable development and identity must be thought of.

Greenbelt’s project is characterised by being a systemic, integrated and multiscale project.

It is a systemic project because its peculiarity lies in tackling the problem of environmental requalification of a complex environment

through a coordinated set of different design devices, in the awareness that a real improvement in the environmental conditions of our cities can only be achieved by adopting an organic and articulated strategy according to the relevance of the problems, the available spaces and the possible policies.

It is an integrated project because, together with the creation of the greenbelt and green infrastructure, it deals with urban and architectural design issues more properly, with a unified and integrated approach. In this field, for example, there are projects that, together with the redevelopment of natural and rural environments, involve the creation of a system of thematic itineraries that cross the Greenbelt connecting its most significant places, or for the redevelopment of the settlement in both its ecological and morphological components and public spaces, and finally for the redesign of abandoned industrial areas in the spaces of connection between the city and the greenbelt.



It is a multiscale project as it is built on different levels:

- at the metropolitan level, it creates a strategic territorial masterplan based on the integrated design of three systems that make up the outer ring of the greenbelt: the metropolitan system of green areas and parks (which partly coincides with the orbital forest of the Boeri plan), the system of heritage and networks for use as an opportunity to enhance the historical, cultural and natural heritage of the area, which in most cases is in a state of neglect; the system of thematic areas: Rural life system, Petrela cultural system, Dajt natural system, Boville lake system, Kashar lake system, Historic sites system;

- at the urban level, it implements an urban strategic master plan, which consists of the inner ring of the green belt of Tirana, which is entrusted with the role of dialogue between the external naturalistic context and the urban fabric; the recovery, reorganization and enhancement of the city, in which the greenbelt penetrates and is articulated through the large natural corridors of rivers and urban parks; the system of peripheral polarities and devices for the environmental redevelopment of open spaces and urban fabrics; the system of connecting components and sustainable mobility.

- at the level of individual components, networks or parts of cities, and of specific nodal places of particular landscape and cultural value or particularly degraded, in which it builds pilot projects for new structures able to represent a renewed identity and new prospects for sustainable development. All the project interventions are accumulated by the objective of introducing elements of quality - environmental, landscape, settlement - in every element "touched" by the plot of the green; moreover, their value lies in being each part of the broader strategy already described.

Among the pilot projects, which are very diversified in scale and content, two in particular take on exemplary value for the major themes that cross the contemporary city.

The first is a project to reorganise the marginal area of the Kombinat district, to the south-west of the city (later further developed in the subsequent project "Tirana: new forms of living"), through the reuse of the large abandoned textile industry - strategically positioned as an interface between the city centre and the green belt and therefore interpreted as a "landscape node", as well as urban - and the project of

the nearby agricultural park, within a valley enclosed between two high hills, where the agricultural areas are marked by great signs represented by canals, with adjoining rows of trees, buffer strips and large green areas placed at the center of the agricultural matrix.

A second is an abacus of sustainable strategies for informal settlements, based on a participatory process of assisted self-construction. About one third of Tirana's inhabitants today live in informal settlements in poor housing conditions and without adequate access to primary infrastructure. Updating the informal city is therefore a good fit for goal 11 Making cities and human settlements inclusive, safe, flexible and sustainable - Goal 11 of the UN Agenda 2030 for Sustainable Development.

NEW FORMS OF HOUSING IN THE KOMBINAT DISTRICT

The Master Degree Workshop "Tirana: new forms of living" has verified the possibility of creating a new pole on the urban and territorial scale, focusing on a particularly significant area of contemporary Tirana: the peripheral west zone occupied by the large textile factory Kombinat, now abandoned, and the facing areas, characterized by the development of informal housing. This marginal area, with a productive and residential vocation, is in direct relationship with the rural landscape



and is located in a cove inside the track of the “metrobosco” provided by the Boeri’s Plan.

The area has a strong characterization, for the presence of the former factory and the workers’ quarter built to serve it, but also responds to typical conditions of the peripheral context of Tirana. The area is divided into two macro-zones by one of the arteries that branch off from Skanderbeg Square: the downstream part consisting of the factory and the informal urban fabric behind, arranged partially following the original agricultural subdivision, and the part lying on the slopes of the hill, occupied by another informal urban fabric arranged according to the orography.

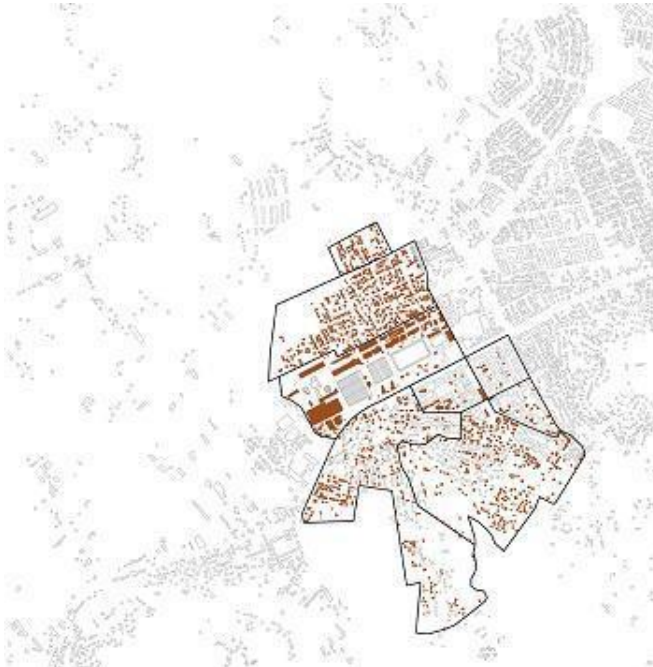
Maintaining, and indeed strengthening the different character of the two areas, the project has experimented with new forms of living and renewed interpretations for high- and low-density building, declining the different possibilities that offer the land use indexes established by the plan.

New types for contemporary ways of living have been studied, which reinterpret the local tradition of urban and architectural space, introducing new relationships between city and nature, open/closed, full/empty, public/private spaces. The project has chosen aggregative forms and building types that respond to the renewed ways of living (co-living for students and the elderly, co-working for companies and business groups, living working for freelance workers, artists, artisans).

Recognizing Tirana’s value as a “city by parts” determined by physical, historical, functional and social conditions, the project has identified the different urban environments and defined their margins, connecting them through interstitial spaces of nature. In these “urban islands”, formally and functionally identified, the city models that occurred in time have been reinterpreted. The Ottoman city has been evoked in the neighborhood in the upper part, the Modern city (from the compact Italian city made of “excavated” streets and squares to the Socialist one made up of large courtyards) in the intensive district behind the Kombinat, the Industrial city in the former textile factory. These “islands” are crossed by a green system that acts as a connection, articulating itself in a linear agricultural park with an equipped path, corresponding to the flat tongue of land that reaches up to Kashar, in the urban-forum park inside the Kombinat, in the terraced park on the slopes of the hill-promontory, up to the wood on the hill with the belvedere and the articulated path upstream that connects the different promontories up to the artificial lake located in the southern end of the monumental axis.

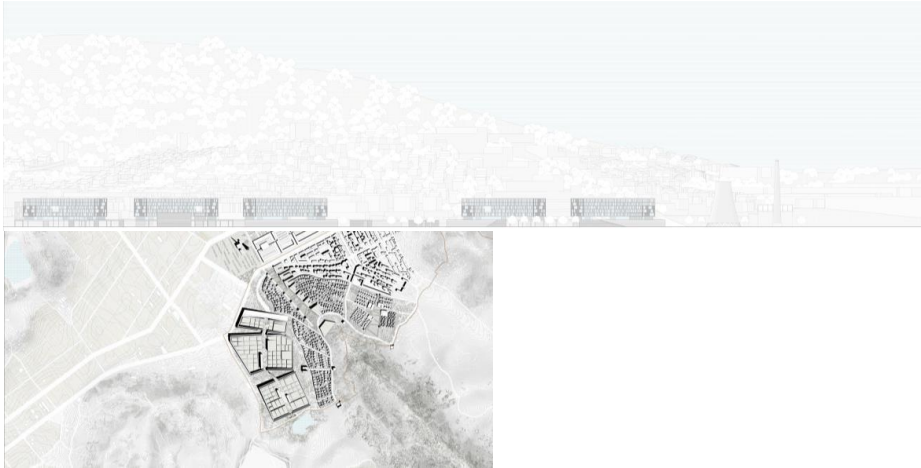
The thesis has experimented with various settlement models, which can be summarised as follows:

- dense city (urban fabric between density and discontinuity)
- building-city (the “great architecture” as a metaphor for the city)
- city-nature (open urban forms and natural voids).

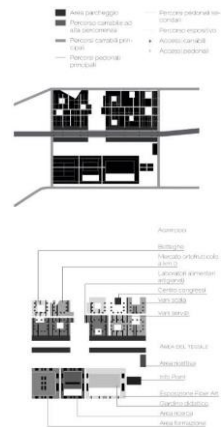


A. Den-City. The “island district” downstream

Behind the Kombinat was planned the demolition of the informal urban fabric and the creation of a new, less extensive and denser neighborhood. A basement organized as a compact urban fabric and open spaces, reminiscent of a bazaar, is related to the mesh of iterated spans of the Kombinat on the one hand, and with the layout of the agrarian fields and canals on the other hand. It contains shops (stores), a covered market and spaces for the agri-food sector, in continuity with the agri-food park behind it and the peri-urban agricultural landscape. On this “artificial ground”, regular courtyards overlap, generating a grid,



interpreting the socialist city consisting of large inhabited courtyards with services in the centre. The court first floor is a transparent and permeable space, containing the co-working spaces, mainly linked to the functions of agri-food and textiles. On the upper floors there are the residences, in order to create a neighborhood with integrated functions (housing, public spaces, work, production, commerce, culture, loisir), which can live at all hours of the day. This principle of settlement gives rise to a stratified city, with open and closed spaces which, from the public function in the basement conceived on a territorial scale, progressively pass to the urban scale defined by the semi-public spaces of work and collective residence, to the increasingly intimate and private places of individual living.



B. Building-City. The Kombinat complex

The former industrial complex is re-functionalized with uses related to textiles. It is planned to enhance Piazza Garibaldi, the only public space currently in the area, characterized by monumental access to the Kombinat, and the buildings of the furnace, located on the opposite side of the complex, which show the original identity of the factory. In the existing structures and in the perimeter enlargements, activities linked to production, use and recycling of textiles (laboratories, ateliers), training (school, conference centre), education (didactic garden), documentation and memory (Museum of Work and Textiles), exposition (Museum of Fiber Art), marketing (fair-market), research and innovation (experimental laboratories for the University) are foreseen.

The empty band behind, between the former factory and the new district, is characterized as a forum-park for recreational activities and spaces for events and shows. The bypass provided for by Boeri's Plan separates the Kombinat from the district, but a large central connection crosses the large road infrastructure that runs partly in the trench, regaining the unity of the parts.

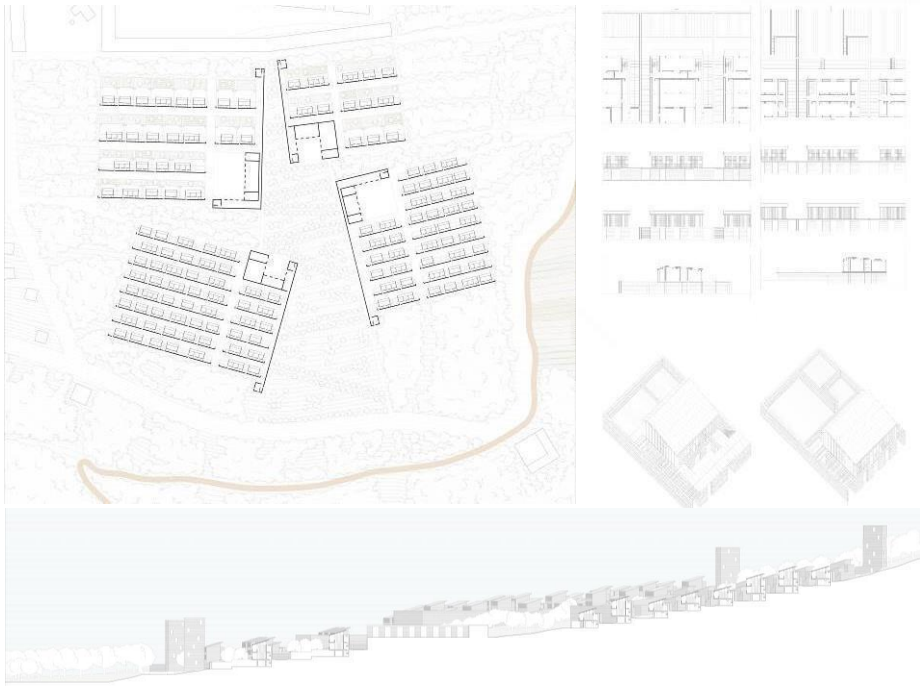
C. City-Nature. The "village" on the hill

In the district on the slopes of the hill, consisting of a serial and discretized urban fabric that lies on the ground, adapting to the orography, the Master Degree Workshop interpreted the relationship between the morphology of the land and the form of settlement, taking as a reference the traditional Albanian villages placed in similar environmental conditions. In this context that currently lacks a defined form, hierarchies and public spaces, subgroups and centralities have been identified; connections with the existing city and with the natural context, internal gradations of the paths and spaces have been established. The neighbourhood and urban services, arranged at the base of settlement, at the edge of the workers' quarter, along the central terraced park and at the top, act as ordering systems and emerge from the basic building with forms derived from the modeling of the ground (podiums, bases, ramparts, belvedere terraces) or through recognizable architectural types (open or closed court buildings, towers, fences). In the existing urban fabric, the building action was developed in a punctiform way, through the operations of thinning, densifying, concentrating and replacing it. A model district divided into sections has also been studied, with the possibility of large investments and unitary interventions.

These strategies are considered replicable in similar contexts, with appropriate variations.

CONCLUSIONI

The research themes and design strategies defined in these experiences touch on the problems and explore the possible answers in a city that does not seem to escape the fate of the capitals of the



East, subject to profound and contradictory transformations. On the one hand, the continuation of the phenomenon of urbanization of the population from rural areas and therefore the growth of an extended informal city, on the other hand, the catalization of financial resources and therefore the implementation of huge real estate operations that transform entire parts of the city. Although there is a new instrument of territorial governance based on criteria of sustainability and polycentrism, in order to manage both phenomena, detailed planning is necessary to ensure spatial quality and environmental and social sustainability, which in current conditions can only be ensured by a

public action that knows how to direct all the transformations in this direction and how to obtain public benefits appropriate to the transformations allowed. In this large design space, the described design experiences are included, as examples and explorations of possible ways of implementing the strategies of the plan, interpreting and deepening them in specific contexts and for central themes. From this point of view, these projects could be a support for public decision-makers in order to weigh up their choices and to achieve what they want to obtain from the transformation processes. The project as a working method to interpret the plan and give shape to the city is a topic long debated in the research of design disciplines, and these works are intended to be illustrative of how in the contemporary condition this theme can be assumed. Therefore, these didactic experiences are not intended to provide absolute solutions, but rather to offer possible working hypotheses, considered valid above all from the methodological point of view. Moreover, they intend to verify, through spatial prefigurations, the results of choices to be made by the city's governing bodies (building indexes, guidelines...), and their effects on the urban form as a whole.

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THE RECOVERY OF THE CENTRALITY OF WATER PLACES IN RIVER CITIES

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ABSTRACT

This study aims to address the issue of the relationship between a river and its city, with the aim of re-evaluating the key role that aquatic places have in the contemporary city. Areas within the consolidated fabric, which relate to the water edge were investigated, such as port areas, industrial areas and abandoned shipyards, considered marginal areas of the city due to their inclusive and impassable nature.

In the city of Ljubljana, the river has an iconic value and is the main urban public space. Jože Plečnik drew up his reflections on the city-river relationship and his idea of living along the river, transforming a part of the Ljublanica into a “boulevard” that actively participates in the life of the city. The bridges become not only elements of connection between parts, but squares on the water on which the city life takes place.

In Belgrade, although the banks are connected by several bridges, the city seems to break off at the confluence between its two rivers. The riverfront is composed of a series of parts, some natural, others that give rise to more industrial functions, which have shaped the river landscape. In the project proposal, three river chambers on the banks of the Danube and the Sava have been considered, not only for their particular morphology but also for the strategic position they occupy with a view to making the riverfront continuous, permeable and truly an integral part of the city. The urban strategy proposes to recover and strengthen the fluvial identity of the city as a key tool for urban recovery. The hypothesis is to create a network of places on the riverfront, so as to give back to the river its role of protagonist in the urban space and of creator of the new forms of the city.

KEYWORDS: Contemporary city, recovery, fluvial city, urban identity, disused areas

INTRODUCTION

The river, as a “dynamic” element, had a considerable influence in the development of cities, it was the means to exchange goods and between different cultures on land, a line of communication and transport. The ways of composing a spatial relationship between the river, the city and its inhabitants, such as navigating the waters, building landing places, ports and bridges, characterizing the embankments and connecting them to the squares, have given rise to very peculiar and incisive types of spaces that characterize the city. In the variegated urban scenery, the river takes on an iconic and figurative value, in addition to being considered a place of great landscape value. Re-evaluating the fluvial presence in the contemporary city, both in terms of its use and in its perception, has been possible thanks to renewal policies that have as their object the margin spaces between land and water.

The “urban boundary” on the water is, very often, not valued; sometimes the city stretches over it, other times it detaches from it. However, the potential that these spaces represent for the city is recognized, as privileged places for the placement of new collective services.

For example, the landing place is an important “gate” to the city, therefore a symbolic place and it is also a privileged place of contact and connection between the river and the city.

Redesigning those areas that relate to the water’s border, with a particular destination such as port areas, industrial areas and disused shipyards, considered marginal areas of the city with their inclusive and impassable character, is possible through a regenerative approach, with the intent to save such areas from neglect. Urban planning is therefore considered essential to resolve the downfall in these areas with the city, making them an active, usable and safe part.

To strengthen the link between the city and the river, urban transformation must look at all the different scales to relate adequately with the existing fabric and the morphology of the territory. To re-design the water’s border it is therefore necessary to start from a close study of the place and acquire critical knowledge in order to define a new urban form that is related to the existing areas and that can recompose urban fabrics and paths to restore privileged visual points and points of contact with the river. The interventions along these strips of land, therefore, concern the image of the city and aim to establish new

connections between parts of the city with the aim of creating new centralities that reflect the identity of the city.

THE CITY-RIVER RELATIONSHIP: THE CASE OF LJUBLJANA

The city-river relationship is successful if we consider Ljubljana. The city of Ljubljana lies on the small river Ljubljanica, in a flood plain. Following the earthquake of 1895, it faced the problem of reconstruction and on this occasion, several architects (including K. Sitte, CM Koch, I. Vurnik and Max Fabiani) were commissioned to create a General Plan for the city, which dealt with a series of issues, from the development of the city, to its form, to its organization and to traffic regulation. Thirty years later, architect Jože Plečnik transformed his reflections on the relationship with Ljubljanica into an Urban Plan that referred to a new idea of living the river. His plan involved the central part of the city that develops around the ancient castle and in the tract of land of which interventions were carried out to control the flow of the watercourse. In this place, the banks of the river are artificially treated and the river is like a “boulevard”, that actively participates in the city, marked by trees, with frequent points of contact between the two banks; while in the most peripheral part of the city, the river cuts itself an autonomous strip of natural landscape and it is like an irrelevant presence for the fabric that develops around it. According to the Slovenian architect, tall buildings could not prevent the view from one bank to another, so he thought of opening arched passages in the buildings so that the city could continue to live together with its river.

The master plan of Plečnik of 1929, was able to go well beyond the simple arrangement of the embankments and the construction of bridges, he solved the problem of the removal of the river from the city, transforming it into the main urban public space. This respecting the nature of the river and the pre-existing buildings, paying attention to its morphological characteristics and building on them a new form of the city: green wedges supporting the image of the city as born on the valley but also representing functional elements of ecological view. Particular solutions concern the urban design elements scattered around the streets, the network of parks for improving the quality of life and their connections to water and adjacent areas.

Ljubljana is a city that has exploited the potential of the watercourse that flows through it, considering it as an opportunity to create a network of interconnected places. What M. Carta declaimed

“the waterfront is not just a line, but a network of places, functions, grafts and joints between the coast and the city, between the port and urban activities” (Carta M., 2006), in this case, can be transposed at the waterway. The reduction of the river in Ljubljana in a space inside the city, a space in which to look out, in which to descend, makes it an urban space in all respects. Furthermore, the “objects” that develop along the Ljubljanica are in dialogue with each other, in both a visual and functional relationship. Moreover, the city has taken on another way to relate to the river: to overhang it with bridges, which allows the city not only to cross it, but also to take possession of it, looking at it from above. The bridges, in Ljubljana, are

very frequent, they are not only the place of crossing, they are also places of being, of contemplating and sometimes they also become squares on the water on which the city life takes place (Figure 1).

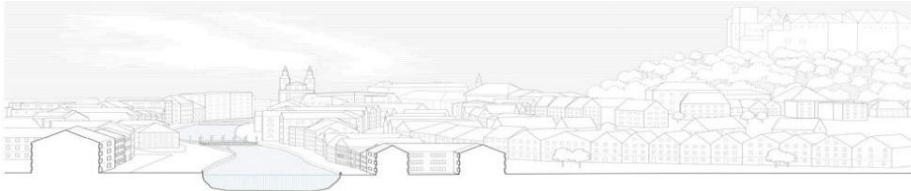


Figure 1: Section on the river in the center of Ljubljana.

Jože Plečnik made many plans for the connection of the city. The most famous consists in the arrangement of an existing bridge with the addition of two pedestrian paths, called for this the Triple Bridge, which connects the town market square, where the Robba fountain is located, with the iconic Prešernov Square, enclosed by the Franciscan Church of the Annunciation, its Monastery, an ancient pharmacy and the monument to France Prešernov. To the east, one connects to another emblematic building of the Slovenian architect: the Covered Market, positioned on the river's edge and frontally to the Cathedral of St. Nicholas. The building resumes the sinuous course of the river tracing the limit and has a curved colonnade in the inner part of the square. Following the course of the river, towards south, there is another bridge that connects the shores to the Congress Square with its park and the Church of the Holy Trinity. Continuing, noteworthy is the Shoemakers Bridge, with columns of different sizes that go towards the sky and enclose the space like a real square on the water. Then there is the Novi Square with its fountain and the National Library, again by Plečnik. Finally, I cannot fail to mention the Trnovo Bridge and the open spaces

of the former Port of Trnovo: an embankment modeled on steps that become seats for leisure time and make it possible to descend.

All the banks of the river in the center of the city are treated with trees, descents, stopping points, seats, visual goals such as those towards the ancient Castle, located at a higher altitude. These solutions create public spaces open on the water, which tend to be related both physically and visually, with existing public places and buildings and which represent new high-quality social spaces.

FRAGMENTATION ON THE RIVERFRONT IN BELGRADE

Belgrade is located near the confluence of the Sava River in the Danube and extends along both banks of the two rivers. Although different bridges connect the banks, pedestrian, cycle, vehicular and railway, the city seems to break off at the confluence, developing further inland.

The riverfront inside the city is composed of a series of parts, some natural, others that give rise to more industrial functions, which have shaped the river landscape. Except for the part of the riverfront that skirts the oldest city, it is made up of specialized areas, fenced and not very accessible, which hinder the contact of the city with its two rivers. Through the analysis of the Belgrade riverfront, three river chambers have been identified, not only for their particular morphology but also for the strategic position they occupy with appoint in making the riverfront continuous, permeable and truly an integral part of the city. These three areas, one identified along the banks of the Sava and two on the Danube, are come backs from a productive past and arise in positions of valuable landscape, in correspondence with the same number of docks. Their use has changed the original river landscape, modifying the natural banks of the river and occluding the soil. The areas are also characterized by the presence of a decommissioned railway track which connects them, and which represents an obstacle to the city's growth towards water. They are priority areas of renewal as they also intertwine with the landscape.

The presence of numerous rafts along the banks, with various functions, from sports centers to restaurants and entertainment venues, demonstrates the need of the inhabitants to enjoy the river more. In the current General Belgrade Urban Plan, new industrial areas located on the outskirts of the city have been identified in this regard. By relocating these productions activities close to the riverbanks, the current Plan for a chance to reclaim the unit in recomposing a unitary visual structure,

in which the elements of natural and urban, contribute to the realization of the design of the city.

The degraded areas due to economic, technological and social changes, such as the divestment in the industrial sectors and in the railway networks, can be invested by recovery projects that open up to the problem of the new relationship between these places, the city and its form. Once made available, these areas are a resource for re-establishing new connections between the parts that fence them, trying to create a dialogue among them. The re-composition of the shape of the city on the embankments of the riverside in the central part of the city represents an opportunity for its needs: from production sites to places of activity linked to urban uses, such as leisure, culture, commerce, work and residence. The goal is to create a more solid city-river connection, through a network of public spaces. The network system is set up through new routes along water courses and new connections, both physical and visual.

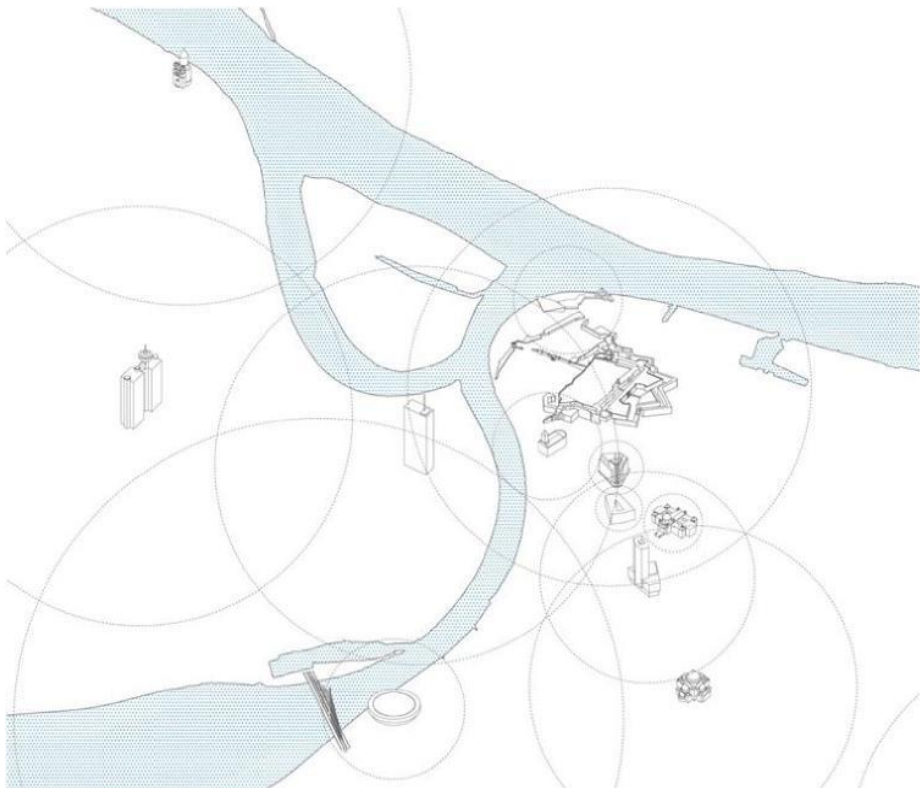


Figure 2: Landmark built of the city of Belgrade.

Parks and green areas along the river banks are a network for the city, such as the green pole of Ada Ciganlije, the park of the Republic, the park of the Memorial, the island of War, the terrace of Kalamegda; the elements that instead create a visual network between the banks of the rivers are

landmarks, such as the Usce Tower and the Museum of Contemporary Art in the west; the trade fair complex, the Avala Tower, the temple of S. Sava, the Victor with its terrace, the Sports Center 25th May to the east; also the Ada Bridge, which connects the two banks of the Sava to the south of the city, besides being an element of physical connection, constitutes one of the most important visual landmarks of the city (figure 2).

An example, currently under construction, may be the transformation of a large flat area located in a portion of the riverfront called the Amphitheater of the Sava, between the eastern bank of the Sava and the old depot of the main railway station. The project called Beograd na vodi (Belgrade on water), provides for the transformation of the area through the construction of a multi-purpose architectural complex composed of several buildings and a 168 meter tower positioned on the water boulder. But it stands as a hostile proposal for the existing urban context, completely disconnected from the nineteenth-century city behind; you can refer to the heights of the skyscrapers that hide the view of the river, the distances between the fronts of the buildings, the proportions of the new neighborhood compared to the rear, a completely new face of the city.

NEW CONNECTIONS BETWEEN PARTS OF CITIES: THE PROJECT IN BELGRADE

The topics presented start from an experience developed during the Degree Thesis in Architecture at the Polytechnic of Bari. The design model is based on the urban traces considered essential to reconfigure the areas currently unable to establish connections between the adjacent urban fabric and as Vasari wrote, it is “a work that has been measured with its pre-existing elements, trying to establish a fruitful dialogue between the existing and the new opportunities for transformation”. In this sense, the project seeks to be in continuity with the characteristics of the areas, aims to connect urban renewal and the landscape: the river has a leading role in space and aims to be the generating element of new urban forms. The goal is to equip the river bank with spaces and services for recreational functions, for collective

use; continue the green buffer already present on the banks of the rivers, in certain points, also thanks to the displacement of the railway and port ports, the transport of heavy vehicles and the railway, outside the center of Belgrade, which would favour the connection with the river.

The project aims to give back protagonism to natural elements through the rediscovery of a more direct relationship between city and river. For each of the three areas, mentioned above, located in an equal number of docks, planivolumetric solutions have been hypothesized that enhance the water's border, considering the river's finishing points, the main road axes and the most significant buildings of the city.

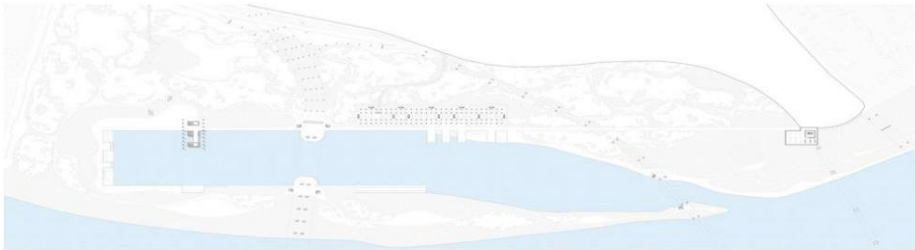


Figure 3: Ground floor plan of the project on the dock on the west bank of the Sava river.

As for a dock, located on the left bank of the Sava, taken as a sample, the fences of the former factory currently create a physical barrier between the city and the shipyard and prevent travel along the quay. The demolition of the plant, which began last year, will offer the city the extraordinary opportunity to regain its relationship with the river and rethink the shape of the entire riverfront, relying on the availability of this large area. The project embraces this principle and tries to complete the urban sequence of “places” and docks. The proposal is to create a network of places (or a visual network when it is not possible to create a physical network) with existing landmarks, and this is what our project did, with a paratactic composition of three elements in tension between them, to be placed in the three docks of the city, creating new public spaces that connect the city to the river. Each of the three elements changes measures and proportions according to the context and, their size, shape and position is such as to guarantee a continuous physical and visual tension. Through these three elements the dialogue with the city is established: there is a “tower-building”, which forms a network with the other landmarks; a “blade-building”, which stands as a limit element between city and water; a “slab-building”, whose position determines the new distance on the water in

the dock. The three buildings reflect the new lifestyle and the new relationships in land use and spatial mobility, work, life, recreation and transport are interconnected. Moreover, by enhancing the use of existing bridges, the connection also becomes physical: for example, in the dock located on the Sava, the former railway bridge is converted into a pedestrian cycle.

The other objective of the project is to bring the natural condition of the river landscape back into the city and its port basin. For this purpose, we decided not to saturate the abandoned areas, but rather to transform them into green areas, creating a large park in which to immerse the three buildings. The green from the park continues vertically on the terraces of the urban condenser buildings.

In the plan of the project of one of the three project areas, shown in figure 3, the connection between the spaces and the usability of the area on the ground floor was highlighted by placing the buildings on pilotis. While the external bank of the river is protected and maintained in its natural condition, the artificial margin of the dock is modeled with overhangs to sight and recreate privileged situations, from which to admire the city in symbiosis with the landscape, but also in the form of squares at a lower altitude and descents that make bathing possible (figure 4). This “adding to the beauty of the first nature, the beauty of an art and a landscape that has become a true second nature”, as Goethe wrote, in *Travel in Italy*.

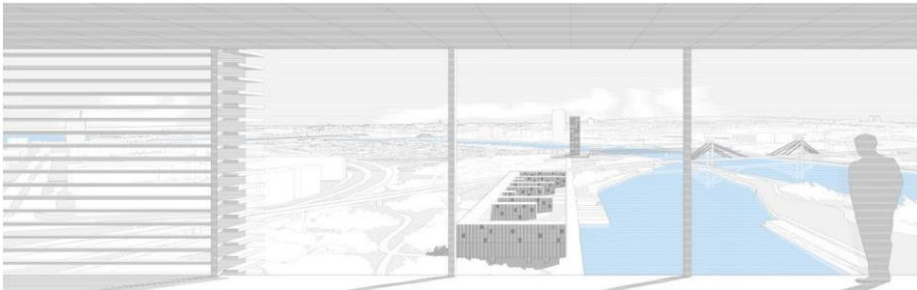


Figure 4: View of the project area from the designed “blade” building.

Through the project we try to provide a further interpretative key to sustainability, considered at the architectural level. All the precautions for the sustainability of the intervention and to favour energy saving (ventilation, exposure) were examined. The link of continuity between the architecture of the place and its identity is also expressed through the use of brickwork, visually in continuity with the

past, but reinterpreted by replacing its primitive supporting function with one of a covering cases.

CONCLUSION

The study aims to provide a methodological contribution to urban and architectural design in the uneven areas along the water courses, according to an approach that considers the project as a critical interpretation of the characteristics of the urban place and the landscape component.

The reflections related to the urban marginality of the water places and the consequent need to recover a unitary landscape vision, have led to the development of a project that aims to “re-weave” the interrupted urban fabric capable of giving physical and perceptive organicity to the areas.

It follows the hypothesis of a river park as a response to the question of the division between city and landscape, to be accomplished with the arrangement of the urban banks and with the establishment of an articulated and concatenated public space on the banks, capable of virtuously composing the urban riverfront thus becoming new centrality for the city.

ACKNOWLEDGEMENTS

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TOWARDS A BETTER QUALITY OF LIFE, PROPOSING A PROTOTYPE MODEL OF SUBSTITUTE ACCOMMODATION FACILITIES AT GAMALYAH IN CAIRO.

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ABSTRACT

Egypt has always been a tourist destination that depends on cultural tourism. Hotels were first launched in Egypt to cater for these types of tourists. Monuments of past civilizations were always attractions of cultural tourists from around the world. However, aside from these cultural landmarks, other Egyptian cultural features were neglected. Around Egypt, many destinations of historic and cultural themes are scattered. Many examples can be recalled in this scope in Fayoum and Cairo. One of the most prominent of these locations is at Gamalyah and its surrounding area that represents Fatimid Egypt. Likewise, in Europe, many locations are found. However, these locations are well maintained, restored and developed so as to accommodate B&B facilities. Every day, hundreds of thousands of tourists decide to choose B&B accommodations in favor of traditional hotel facilities (Gutting et al. 2017). Airbnb, one of the most famous operators that runs and manages these types of accommodations, reported that its capital investment has reached 450 million US\$ in 2017. Many researchers also investigated the Airbnb model, the motivations of buyers as well as other related topics. This research is focused on adopting a prototype Egyptian customized model of B&B taking advantage of cultural and historic districts in Cairo, i.e., Gamalyah. The customized model takes into consideration the cultural values differences, the financial constraints for such types of

accommodation and the change of values needed for collaborative economy concept development can permit for better quality of life for inhabitants in this area, using urban design among other frames to achieve the desired changes.

KEYWORDS: Sustainable development, Unique urban design, Micro job-activities, Integrated Tourism, Local policies making, B&B accommodation

INTRODUCTION

Sustainable tourism is planning ahead, and in its purest sense, sustainable tourism is an industry committed to making a low impact on the natural environment and local culture, while helping to generate income and employment for locals. Global economists forecast continuing international tourism growth, ranging between three and six percent annually, depending on the location. As one of the world's largest and fastest growing industries, this continuous growth will place great stress on remaining biologically diverse habitats and indigenous cultures, which are often used to support mass tourism. Tourists who promote and practice sustainable tourism are sensitive to these dangers and seek to protect tourist destinations, and to protect tourism as an industry. (Kasim A. 2004).

Integrated Relational Tourism (IRT): Integrated Relational Tourism is a kind of tourism that stresses encounter and sharing, where the tourist experience consists of fostering customized contact of guests with the local hosting community by making visitors participate in the tasks, customs and way of life of the local community. (Naselli F. & Ruggeri G. 2007; Ruggeri G. 2010)

Social Responsibility: Corporate social responsibility encompasses a wide variety of business practices. Through the available information, two constructs for the degree of CSR of each hotel establishment are built. Both constructs include data regarding social aspects of a firm's activities, and other related to HR practices of the firm. These include aspects such as whether the firm has participated or has financed some social, environmental or cultural projects; whether the firm has some code of conduct in the area of corruption and bribery, or with regard to sex tourism; and whether the hotel has infrastructures for disabled people and others. (Fernandez & Santaló 2010).

B&B accommodations are very popular in Europe. To list, there are thirteen Mediterranean countries, which are: eight European countries or regions (Euro) five north-Africa or middle east countries (MENA regions) had participated in launching many IRT (Naselli F. 2012 a/b) and B&B projects around Europe and Mediterranean countries. There projects are in Italy, Spain and Greece (MENA, 2013). However, no initiatives of the same kind were seen in the North African Mediterranean countries so far.

HISTORY OF GAMALYAH

Cairo has a complex history of domination that followed over the centuries, from 969 AC, when Gwadar traces the path of a quadrangular which were then built the walls of Cairo, until the arrival in 1798 of Napoleon's troops, Cairo is located in a particular area that draws in the Nile region in Egypt. The city is located in the place where the river, the primary element of communication, separating fans from the Valley and giving rise to the Delta. The city is the junction between three landscapes: the desert that covers the western two thirds of the surface, formed by the sandy expanse; the eastern, more rock, formed by mountains and hills sloping up to the Red Sea, and the fertile ground. The first is the urban core Fustat, word of Greek origin that means in Egyptian camp surrounded by a moat, and dates back the military camp Caliphs in 640 AD, used to lay siege to the ancient fortress of Babylon, Egypt, built by the Romans the place where the slaves deported from Babylon, had allocated. The fortress, during the siege, was a settlement and Greek, his conquest meant for Arabs the opportunity to create a strategic base for expansion throughout North Africa.

The form of the camp set up was very similar to the roman era and was ruled by general 'Amr ibn al-'As which has built in 642 A.D., the mosque named first Muslim place of worship on the territory of Africa. Around the mosque, as in the traditional conception of the matrix territory, expanded the settlements, which was divided into sectors, khitta, in which it settled about fifty tribes, reflecting social organization that was available from the center, consisting of the mosque, to the sides in a rigid schedule. The mosque of 'Amr had a fourfold importance because it did not represent only the center of worship but also performed duties of defense, justice and social aggregation. The new settlement had incorporated the remains of Babylon, which was inhabited by Coptic elite of officials and was preparing to become, for many centuries, joined later by the al-Qahira, the most important report and trade across the region.

At the Omayyad dynasty (661-750) followed that of Abbasids who, after having besieged Fustat, entered the north of the site, providing it with a new mosque, a palace headquarters of the government, and a market. This site took the name of Al-Askar and his move away from the previous wording was not grounds for expansion of the city but met a phenomenon typical of the history of the Muslim world, called "dynastic urbanism". This attitude was confirmed in the subsequent reign of Ibn Tulun (868 AD), the most famous Abbasid

governor, which used the premises earlier, but used a place already occupied by the graves of a Jew and a Christian cemetery in a strategic position at the foot of the hills Muqattam. Again, the territory was divided into lots and the mosque was built by Ibn Tulun became the center of social life. The name of the new site was al-Qata'i and inside, over the mosque, built a new royal palace, a major commercial avenue that linked these new places.

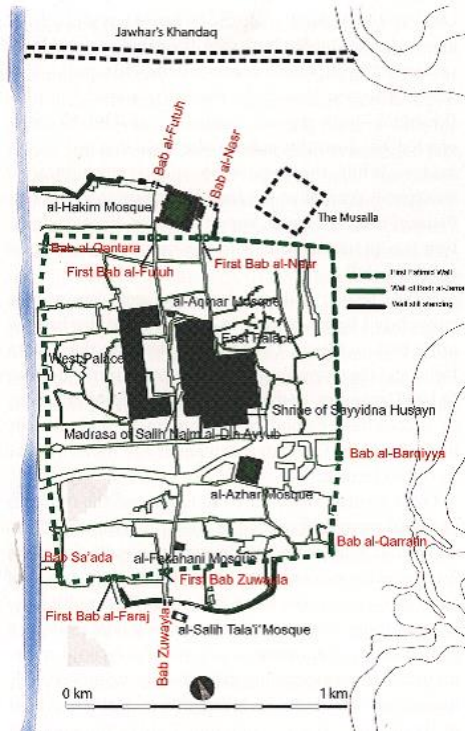


Figure 1: The area of Gamalyah (by the authors)

AREA'S INFRASTRUCTURES

Although the area has an extensive network of services covering water supply, electricity and drainage to nearly all premises, these networks are overloaded and in need of maintenance.

In particular, the trunk sewer along the Sharia Port Said, acting as the principal collector for the area, is critically overloaded, creating a back flow which affects at least half the study area.

Water

There is a General Organization responsible for the provision of potable water in the city. In general terms, the water distribution network reaches all buildings. In many buildings one tap serves a whole building and in others there is an extensive internal distribution system providing outlets to all individual dwellings. Accurate information on the extent of the network in the old city is hard to find and indeed may not exist.

However, the condition of this distribution network is poor, much of it requiring renewal and giving rise to very high losses in distribution.

Sewerage

There is a General Organization responsible for sewerage systems in the old city which consists of drains and collecting sewers, connected to the Cairo main sewerage and wastewater system.

There are problems arising from the condition and capacity of this system which result in back flowing sewage being a recurring feature of many parts of Old Cairo. This is offensive to the senses, a danger to health and a factor in the deterioration of buildings.

Solid Waste

Disposal in the old city is undertaken by private company operations collecting rubbish from places for a charge or fee and gaining further charge from the disposal of re-useable material for which there is a market but its effectiveness in the old city is diminishing for the following reasons:

- a) The amount of rubbish is increasing, and its potential value is declining.
- b) Overcrowding and the narrow streets in the streets is making the task difficult.
- c) There is confusion of responsibility in that the company collects the rubbish from the open spaces and market areas with easy accesses but not from buildings.

Roads

Traffic is concentrated on a small number of streets. The density picture based on observations and not on surveys indicates that peak traffic density occurs at the following locations:

- a) Shari Al-Azhar.
- b) El Mashhad El Husseiny

- c) The old market areas.
- d) Some streets as el moa'az was re-planned to prevent the access of vehicles

Urban Fabric

The urban texture of the study area is a homogeneous one, characterized by tight busy streets with continuous development, mostly of even height. Over these busy streets hover the much larger scale buildings of mosques with their towers and minarets. Certain buildings and spaces are so massive that they stand out as separate entities from the general texture of the study area.

These include:

- a) The al Hakim Mosque and the open area used for the garlic market inside the Bab al Futuh
- b) The al Azhar Mosque and its large open square
- c) Bab Zuweila Strong routes within this tight, 'urban grain make connecting links through the area and are intensively used, thus providing a clear differentiation from the mass of local streets. The most dominant route for pedestrians is the north/south spine running through the study area, from Bab al Futuh to the Mosque Zuweila, reflecting its historic development. There is a temporary brake in the continuity of the route as a result of the Sharia al- Azhar and the subsequent footbridge provided to separate vehicular traffic for pedestrians.

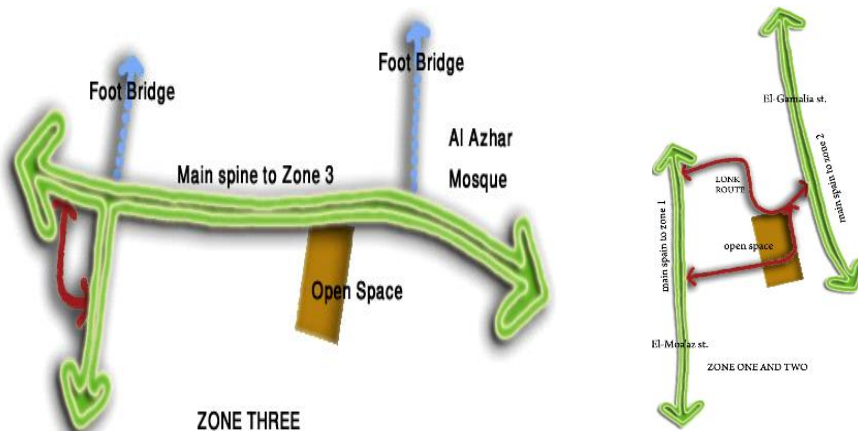


Figure 2, 3: The main circulation flows in the area (by the authors)

This route has the greater concentration of activities from the Street of the Tent Makers to the Bab al Futuh. There are also two sub-

routes, which in addition to vehicular traffic carry large numbers of pedestrians: one runs parallel to the main north/south spine from Bab al Nasr along the Sharia al Gamalyah and the other leads from Bab al Zuweila to the district of the Citadel.

LOCATION MONUMENT ANALYSIS

Zone one centered on Sharia al –Moa’az Le-Din Allah covers the heart of Fatimid Cairo and is the site of the former Fatimid palaces, which were replaced by other major buildings during the Ayubid and Mameluk periods. Historically the zone demonstrates the development of the typical madrasa-mosque with attached mausoleum of the founder. Major public buildings and commercial structures prevail, with shop fronts often obstructing the view of important monuments. Due to the vicinity of Khan al-Khalili and the Sharia al-Azhar, this zone is the most frequented tourist area and, with its unique architectural heritage, represents a “showcase” of Islamic Cairo.

Zone two centered on Al-Gamalyah Street represents one of the finest and most homogeneous street scenes of the old city. It includes fine wakallas and sabil-kuttabs on the north-south spine of Fatimid Cairo, leading from Bab al-Nasr to the holy place of Hussein. The street is also a sub center for the adjacent housing districts, which are accessible through the many lanes branching off from the spine.

Zones one and two are interlinked by narrow streets as well as a number of individual and small groups-of historic buildings. Of particular significance is the Midan Beit El-Qadi, which acts as a strong link between the two zones.

Zone Three centered on the Ghouriya contains the buildings of the Mameluk Sultan al-Ghoury and a series of traditional squares. These originally extended from the Muski street South wards until the Mu’ayyad-complex and were cut by the Al-Azhar Street. To the east Al-Azhar mosque is adjacent to this zone, both a major tourist attraction and an important religious center

RESEARCH METHODS:

5.1 target group and Sample:

The target group of this study consists of private dwellings owners who are interested in tourism activities in Gamalyah. In this research, Egyptian tour guides and tour operators are also included in this sample.

5.2 Research Design:

5.2.1 Secondary Sources.

This part aims to investigate the study model by developing the theoretical framework that will be used to guide the current research, to determine variables that will be measured, data collection tools of his research and statistical relationships that may exist between those variables. The following sources will be used in the theoretical study: books, magazines periodicals, Previous researches as well as internet websites.

5.2.2 Primary Sources:

This part aims, to verify and administer the data collection tools of the study, the participants as well as collecting necessary primary and secondary data.

RESULTS AND DISCUSSION

Based on survey monkey and online sample size assessing software, a sample size of 310 was decided according to population size of both categories investigated, i.e., private dwellings owners and tour operators and guides. A questionnaire form of four questions highlighting both perception and utilization was distributed in personal interviews.

Eventually 100% of the forms were valid for analysis. Reliability and validity tests were run, and all questions included were tested using Alpha Cronbach test on SPSS version 20. The general reliability and validity of the questionnaire form was 0.882 which is higher than 0.7 accepted by Palent (2014). This value also refers to high reliability and validity.

Table 1: Demographic data of private dwellings owners/ tour operators and guides interviewees

	Operators	owners	
	100%	100%	
			Age
< 30	45.10%	48.80%	
31-50	51.60%	48.00%	
years			
>50	3.30%	03.20%	

Table 2: Owners perception and utilization of Air BNB

Chi-Sq.	%	Freq.	I'm willing to use my private dwelling in air BNB.
*0.000	14.5	45	Strongly Disagree
	24.2	75	Disagree
	3.2	10	Neither Agree Nor Disagree
	33.2	103	Agree
	24.8	77	Strongly Agree
	100.0	310	Total
Chi-Sq.	%	Freq.	Air BNB can attract lots of lucrative business to me
*0.000	17.4	54	Strongly Disagree
	18.1	56	Disagree
	9.7	30	Neither Agree Nor Disagree
	31.3	97	Agree
	23.5	73	Strongly Agree
	100.0	310	Total
Chi-Sq.	%	Freq.	The architectural and cultural features, surroundings and locality support Air BNB activities.
*0.000	10.0	31	Strongly Disagree
	11.0	34	Disagree
	13.9	43	Neither Agree Nor Disagree
	39.0	121	Agree
	26.1	81	Strongly Agree
	100.0	310	Total
Chi-Sq.	%	Freq.	I already get business from tour operators and tour guides who involve my place within their tour itinerary
*0.000	13.2	41	Strongly Disagree
	12.3	38	Disagree
	11.3	35	Neither Agree Nor Disagree
	26.5	82	Agree
	36.8	114	Strongly Agree
	100.0	310	Total

Table 3: Tour operators and guides perception and utilization of Air BNB

Chi-Sq.	%	Freq.	I'm willing to recommend private dwelling in air BNB.
*0.000	14.8	46	Strongly Disagree
	24.5	76	Disagree
	2.5	8	Neither Agree Nor Disagree
	32.2	100	Agree
	24.8	80	Strongly Agree
	100.0	310	Total
Chi-Sq.	%	Freq.	Air BNB can attract lots of lucrative business generally
*0.000	18.1	56	Strongly Disagree
	17.4	54	Disagree
	10.6	33	Neither Agree Nor Disagree
	30.0	93	Agree
	23.8	74	Strongly Agree
	100.0	310	Total
Chi-Sq.	%	Freq.	The architectural and cultural features, surroundings and locality of private dwellings in Gamaleyah support Air BNB activities.
*0.000	9.3.0	29	Strongly Disagree
	11.6	36	Disagree
	13.8	43	Neither Agree Nor Disagree
	36.1	112	Agree
	29.0	90	Strongly Agree
	100.0	310	Total
Chi-Sq.		Freq.	I already send business and include Gamaleyah private dwellings within the tour itinerary.
*0.000	11.2	35	Strongly Disagree
	14.1	44	Disagree
	11.2	35	Neither Agree Nor Disagree
	29.0	90	Agree
	34.1	106	Strongly Agree
	100.0	310	Total

From private owners' points of view, it is obviously 58% of the owners's sample are willing to use their dwellings inAir BNB activities. Almost 55% of them believe that Air BNB can attract and may generate lucrative business for them, Around two thirds of the sample believe that architectural and cultural features of their places and their surroundings encourages the hosting of Air BNB guests and 63% already receive business from tour operators and guides who include their private dwellings within their tours itineraries. The results of Chi-Square test show high significance (0.000) for all questions included.

Table 4: Correlation between perception and utilization of Gamalyah Private dwellings within global Air BNB system.

P value	Owners Perception	Tour guides and operators Perception	
	45	46	Strongly disagree
	75	76	Disagree
	10	8	Neither agree nor disagree
	103	100	Agree
	77	80	Strongly agree
0.938929	310	310	
P value	Owners Usage	Tour operators and guides Usage	
	41	35	Strongly disagree
	38	44	Disagree
	35	35	Neither agree nor disagree
	82	90	Agree
	114	106	Strongly agree
0.860432	310	310	Total

From tour operators and guides point of view it can be concluded that 57% are willing to recommend private dwellings of Gamaleyah to gusts to stay in, almost 54% see that Air BNB is a lucrative business and can drive good business opportunities,65.1% or around two thirds of the sample prize the architectural and cultural atmosphere of Gamaleyah private dwellings and see that it support hosting guests of

Air BNB and 63.1% stated they already send business to and include private dwellings of Gamaleyah in their tour itineraries. The results of Chi-Square test show high significance (0.000) for all questions included.

Correlating the previous results pointed out some new findings. First is that there is a high correlation between owners of private dwellings and tour operators and guides in reference to perception on these dwellings and suitability for Air BNB business. A positive correlation was shown ($p=0.938$) meaning that both agreed at 94% on this suitability as they perceived it. (see table 4).

This finding looks to be within the normal course of action, however, the correlation between actual usage and utilization of these dwellings among owners and tour operators and guides is shown to be ($p= 0.860$) meaning that 86% of them are already using these dwellings to accommodate guest despite the fact that they are not enrolled formally within Air BNB booking system. The high correlation on both perception and utilization indicates the high feasibility and readiness of Gamalyeha dwellings to be in use by Air BNB global system.

PROPOSED MODEL

The Venice model for B&B will be developed to use on the model of Malik and Cerlos (2012). The new model adopted takes into consideration the following complements:

- 6.1 Marketing (T.A.) site
- 6.2 Finance (Investment)
- 6.3 Culture exchange (Guide and Member Criteria)
- 6.4 Hospitality (Hotels and Subsystems)
- 6.5 Governmental Contribution (MOT) legislations
- 6.7 Social Contribution (Labor, Social Responsibilities)
- 6.8 Urban design fit of location.

CONCLUSIONS

El-Moaz Street has considered one of the key tourist attractions of the city. It contains a great promenade that is lined restaurants, shops, cafes, bazars and streetscape amenities. Nowadays it is classified one of the most livable streets in Old Cairo. Table 1 summarizes the principles implemented in this example to achieve a successful sustainable street

Table 5: the principles implemented in the EL-MOAZ STREET example (by the authors)

PRINCIPLES	EL-MOAZ STREET
Diversity and Choice	5
Comfort and Streetscape	4
Safety	3
Liveliness	5
Environmental Quality	4
Economic Vitality	<u>5</u>
Total Evaluation of sustainable street (Maximum points 30)	26

POOR (2) GOOD (3) VERY GOOD (4) EXCELLENT (5)

RECOMMENDATIONS

1. Upgrade the level of services, facilities and infrastructure, improve the living conditions and give a better picture of the population.
2. Use renewable energy and more sustainable street furniture.
3. Create more paths to maintain effective communication.
4. El-Moaz Street needs many activities and uses compatible with the level of social, economic and directed towards activities with economic value that is useful to the residents compatible with the character, such as traditional (copper work - the work of fabric).
5. El-Moaz Street needs service consistent with the character of the street represented in the communication centers, hotels and restaurants to serve tourists and visitors.
6. Promote heritage tourism and Egyptian heritage areas locally, regionally and internationally through fliers and informative tourist.
7. Establish a link in-between the two parts of the street to make communication between them.
8. Manage the activities and uses non-compatible with the heritage character of the area.
9. Regenerate the slums surrounding the area.
10. Develop the surrounding area to support the pedestrian tourism and business activities especially Eldarb Elahmar, to occur an increase in economic returns to the country.

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URBAN GREENING: FROM THE SOCIAL VALUE TO ENVIRONMENTAL QUALITY

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ABSTRACT

In recent years, despite the fact that there has been a significant growth not only of large cities but also of smaller urban areas where there is a growing demand for services for the community, an intensification of spaces has been observed (urban gardens, vertical walls, roofs) dedicated to urban agriculture, a sort of re-appropriation of the soil removed from nature.

In this context urban greening can make a valuable contribution as an effective instrument for the renewal of urban open space. It offers significant possibilities since it allows for the improvement of the environmental quality of these spaces, the achievement of both social benefits, with its responding to the needs of aggregation, thus implying a collective use of the land by the inhabitants.

The paper will focus on the design of productive green systems as an integral part of a city oriented towards providing concrete responses to sudden climate change taking in account the aspects related to the technological and environmental quality of open spaces as well as systems that allow to integrate natural and built environments. It is necessary not only intensify the urban green, but, above all, make it functional to the mitigation and improvement of the micro-climatic conditions in line with the resources available.

The paper also will show design proposal in contexts characterized by specific critical social and technological-environmental issues. The reuse mode, the natural and landscape reconfiguration, the usability in general are all closely related aspects to achieving a renewed ecological-environmental quality of the territory as a whole.

KEYWORDS: productive green, urban open spaces, re-use, environmental redevelopment

INTRODUCTION

The re-use of degraded urban areas, focused on the activation of new functional processes of environmental and social reconnection, satisfies some needs attributable to the issue of safety and, in general, to the improvement of the quality of life. In particular, the following considerations start from the idea of reconstructing the relationships between the natural environment and built through a “productive” development of the territory and share the interest in the use of environmentally friendly technologies.

The “productive” redevelopment of sensitive contexts is understood as a recovery strategy aimed not only to ecological and environmental regeneration but also to the creation of urban agriculture systems aimed to improving the overall quality of the site in question. The urban agriculture is an effective tool for the redevelopment of open spaces that represent nodal elements capable of performing the delicate function of connecting the urban system with the surrounding natural system.

The theme of connection is considered according two declinations: technological and environmental.

From a technological point of view, the proposal for a “productive” redevelopment also implies special attention to the relationships established between the environment recovered with the surrounding context to repair possible fruitive fragmentations.

To arrive at an applicative definition of the concepts previously discussed, this study also applies to a structured case study based on research and didactic exercises.

THE COLLECTIVE SPACES AS CATALYSTS OF URBAN QUALITY

The theme of urban quality and, in particular, of living is as alive as ever in the scientific debate and has provided a strong push to think in terms of re-appropriation of the soil by attributing to open spaces the ability to put social, environmental and economic values into a system. The city of Milan in recent years has invested heavily in this regard, its public spaces have acted as “catalysts, activating new polarities of the urban fabric and revitalizing depressed areas” (Berizzi, 2018). What happened in Milan from a strategic and planning point of view is a change of trend, “where the urban voids, unlike the previous plans, are not intervals in contrast to the built, but places in which livability is concentrated and breathed of the city. They are the “soft” part of the

metropolis, the most malleable and capable of containing the changing needs of the liquid society, with the hybridization of the functions that characterize it, with contemporary complexity and its sudden accelerations” (Berizzi, 2018).

In this change of trend the re-use of existing open spaces certainly finds a specific position to activate diversified mechanisms of urban regeneration of compromised areas that can, instead, take on a new role in the socio-economic dynamics of the city: new attraction poles, new connection systems, increase in environmental quality and last but not least, increased safety through the conscious and correct use of recovered spaces. In fact, the sense of insecurity that the inhabitants of different cities have in common, often pushing them to change their habits, to avoid places or to visit them only at certain times (Nobile, 2017). The non-use of an urban space slowly leads to its abandonment and, above all, transforms it into a land of conquest for activities that are not always legitimate.

The use of a space by the people does not guarantee their safety, rather it is necessary to work according to specific strategic lines oriented first of all to the definition of the most appropriate fruition method. Secondly, it will be appropriate to evaluate the level of connection with other collective spaces in the city or, in any case, with nodal and strategic points, to allow for the creation of synergies and mutual support. In order to obtain tangible benefits on the quality of life, it is important to work above all on the connection between the environment and people in physical and perceptive terms as well as ecological ones.

Connection that involves the insertion of a series of suitable infrastructures, first of all to allow the achievement, and then the fruition, of the areas placed in the system. The connection methods can be oriented, according to the specific conditions of the intervention context, to mitigate discomfort situations, to strengthen areas of territory characterized by a good level of quality, but also, to indicate innovative ways of growth and development to urban scale in an attempt to systemize the numerous aspects that intervene to define the quality of life in an urban environment (Frettoloso, 2017).

“The growing awareness of the unsustainability of the model of the city in the developed world” and the evident socio-economic problems of some parts of the population in this part of the world, has given a strong impulse to urban agriculture movements and interventions also in these contexts (Palumbo, 2012). In recent years, despite the fact that there has been a significant growth not only of large

cities but also of smaller urban areas where there is a growing demand for services for the community, an intensification of spaces has been observed (urban gardens, vertical walls, roofs) dedicated to urban agriculture, a sort of re-appropriation of the soil removed from nature. In this logic, urban agriculture, appropriately oriented, can be considered a strategy to propose models of better performing cities starting from the sharing of founding principles such as resilience, sustainability and hospitality (De Filippi, Saporito, 2017) contributing “to increasing the environmental quality of cities (...) (as well as) closing the open loop (Smit and Nasr, 1992), of cities, using local resources (including water and waste) putting other resources in circulation (food, compost, but also no-food products) such as wood for biomass or fabrics, thus contributing to its ecological balance” (Gallo, Casazza, Sala, 2016).

Making a more extensive consideration, it will be necessary to increase the technological-environmental quality of the recovered space, working on the recognisability of surfaces and on the comfort of spatial elements, according to an integrated approach to the project in which the technological and functional aspects necessarily intertwine with the social and environmental ones. A re-use aimed at a regeneration that pursues “broader recovery strategies, favouring the growth of urban quality, accessibility and permeability” in which “the redesign and the differentiation of paths, inclusion in ecological networks and corridors allow for insert these micro-spaces into an integrated environmental system in transformation” (Boeri, 2017).

In a logic of strengthening the user-urban space relationship, the designing of open spaces assumes a leading role, with it being defined as new generation, in places where the actions to improve the technological-environmental quality are integrated with an inclusive approach. This is due to some design-action areas: protecting and increasing biodiversity and resilience aimed at implementing the ecological and social network on a local scale; good practices for the design, maintenance and management of green spaces (UNI, 2014).

THE URBAN OPEN SPACES TRANSFORMATION THROUGH THE URBAN GREENING

Anthropic activity, with interrelated complex structures and relationships determines its own track in the environment, with it being a sign of decay and eventually left as a burden on future generations. In order to limit the footprint, it is necessary to assume that any redevelopment interventions have the goal of making sustainable

changes to the environment in which they will be carried out. It is therefore a priority to orient any redevelopment intervention so that the unavoidable impression is contained as much as possible, with this being achieved by increasing the load capacity defined as the ability to absorb and control the anthropization phenomena with a sustainable impact on the ecosystem.

To intervene on the development of the urban territory in order to find an alternative to the model that emerged over the last century, redevelopment interventions need to be orientated towards sustainability. Consequently, the contribution from the conversion of urban open spaces is particularly important, since they constitute nodal elements capable of performing the delicate function of linking the urban systems with the surrounding natural ones, while assuming a strategic role in the transformation of antropized areas. All this only if the reconversion is outlined as a tangible re-naturalization, with it being possible to activate those processes that use the principles of nature as a model of sustainable management and stimulate the intrinsic potentialities of natural and undeveloped resources due to intense anthropization. This process takes on a particularly important role, especially when the open spaces are in highly compromised ecological and environmental conditions, since their transformation corresponds to a definite renewal of the urban context.

In this context the use of productive urban greening can make a valuable contribution as an effective instrument for the renewal of urban open space because offers significant possibilities from an environmental, economic and social perspective. In the field of productive urban greening this paper focuses on the use of the urban farming (Bit 2014), (Fox, 2011) that offers significant possibilities since it allows the improvement of the environmental quality of these spaces, the achievement of social benefits, responding to the needs of aggregation and of land collective use by the inhabitants and also the achievement of economic benefits, configuring as an innovative business model (the self-production of food products at km 0), which can be easily extended to other related activities as catering.

The urban farming, through the valorisation of agricultural areas, can also represent an interesting opportunity in both retrieving and restoring degraded urban areas as well as improving them from an ecological point of view. Obviously, these areas, once suitably upgraded, can be networked with the green spaces in the city so as to achieve an ecological connection with the rural and natural peripheral areas.

For a better definition of the concepts presented, is discussed below a redevelopment design proposal of three adjacent urban open spaces in Caserta municipality which, due to its highly urbanized features, presents itself as an interesting application case study (Figures 1,2,3,4). The proposed intervention includes a re-functionalization and re-naturalization of the three urban open spaces and their surroundings and focused on the use of urban farming as a productive redevelopment tool through the use of eco-oriented technology strategies.

Due to the massive urbanization, these open spaces present problems also from an ecological-environmental point of view, so their redevelopment is an added value for the urban fabric and plays a significant role in the activation of revitalization processes. The requalification interventions implemented move, therefore, with particular interest, among other aspects, to the ecological aspects of biodiversity conservation in order to safeguard the natural processes that are the basis of the survival of ecosystems. The protection of biodiversity passes through the network connections of the habitats, and more generally of natural areas, since fragmentation of natural habitats is one of the most serious threats to ecological diversity. Designing any form of environmental redevelopment according to a network logic allows to set up the urban open spaces so that they are enriched with new functions: ecological, environmental and fruition.

Starting from these considerations, the organization of the intervention strategies structure was particularly delicate since, thanks to the peculiarity of the intense urbanization of the area under study, it is associated, by definition, with the use of technologies with minimal environmental impact, low energy consumption and reduced surface consumption. With these premises, it was necessary to structure the intervention areas with demonstration systems that were as self-sufficient as possible and not connected to large distribution and treatment networks, while also using low energy consumption as well as energy and water recovery technologies according to the off-grid architecture that manages the energy, gas, water and wastewater needs by using natural resources in the area with the aim to conserve the natural resources as well as connect the environmental and landscape values of the areas for an overall development of the territory. Among the redevelopment strategies, particular importance is given to the use of the urban cultivation, both indoor and outdoor. Specific attention is also given to technologies for the recovery and reuse of rainwater through the use of passive systems such as green

streets and rain gardens. The green streets are on the sides of the access roads in the area immediately surrounding the redeveloped area, while the rain gardens are positioned in strategic places inside.

The focus of the intervention is the urban farming that allows for the improvement of the ecological-environmental quality of the area as a whole and, at the same time, also helps to stimulate the productive activities highly representative of the territory.

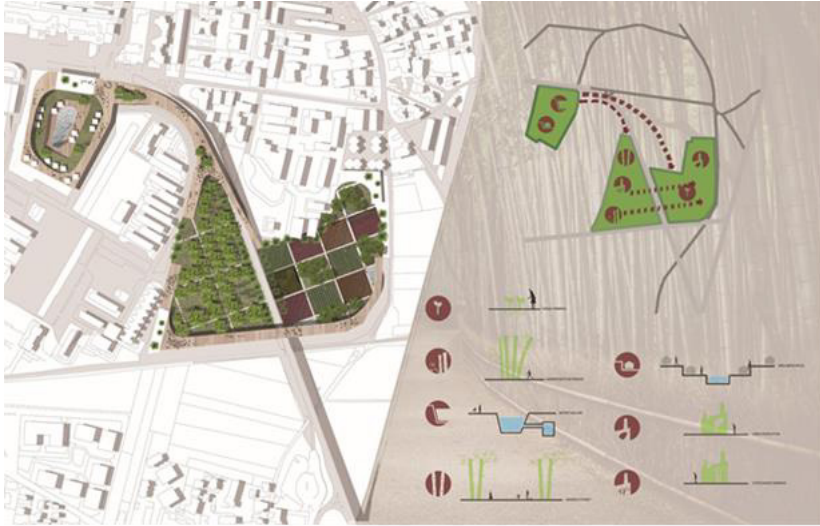


Figure 1: Concept proposal for urban spaces redevelopment in Caserta (Credits: S. Errico, F. Galluccio, Sparaco G.)

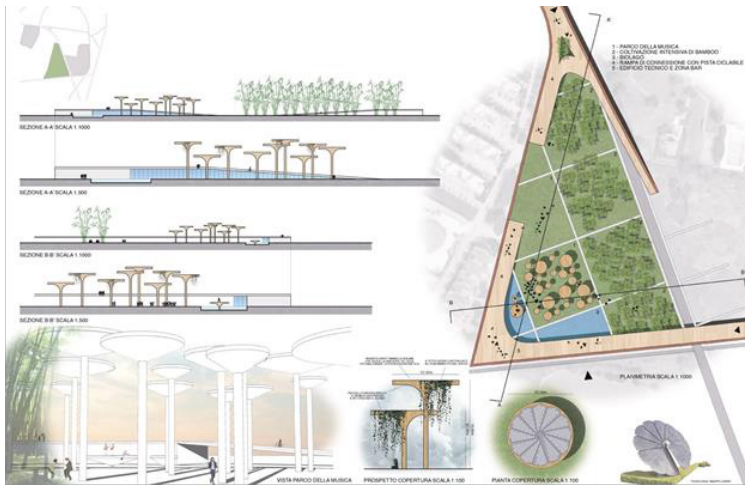


Figure 2: Proposal for redevelopment area 1 (Credit: S. Errico)

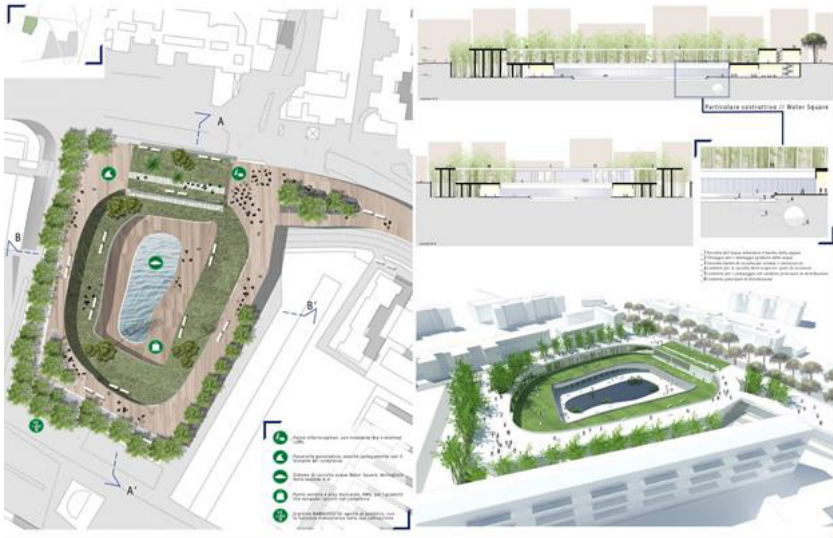


Figure 3: Proposal for redevelopment area 2 (Credit: Sparaco G.)



Figure 4: Proposal for redevelopment area 3 (Credit: F. Galluccio)

CONCLUSION

This work studied the use of urban greening as an effective tool for the sustainable renewal of urban open spaces, highlighting the particular potential of these spaces that constitute the nodal elements capable of improving the environmental quality.

Through the application to appropriately structured case studies, it was also possible to highlight the significant opportunities presented by productive green from an environmental point of view, improving the quality of the air, water and soil sub-systems, a social one, favouring the aggregation of the inhabitants, as well as an economical one, with it being configured as an innovative business model.

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The paper is the result of a common reflection by the Authors. Nevertheless, the paragraph 'The collective spaces as catalysts of urban quality' is by C. Frettoloso and the paragraph 'The urban open spaces transformation through the urban greening' is by R. Franchino.

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AN INTEGRATED DESIGN MODEL FOR SUSTAINABLE DEVELOPMENT IN WATERFRONT AREAS PORT SAID CITY AS A CASE STUDY.URBAN REGENERATION IN COASTAL CITIES

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ABSTRACT

Every city has pockets of underused and underutilized land or distressed and decaying urban areas. These pockets of underused land weaken the city's image, livability. They are usually the result of changes in the urban growth and productivity patterns. Coastal cities have a lot of development potentials & resources in addition to problems and urban challenges, considering the various Environmental & Socioeconomic complexities that they already face.

Urban regeneration (UR) is defined as a comprehensive and integrated vision and action to address urban problems through lasting improvements in the economic, physical, social, and environmental condition of an area. The paper has taken this definition as its point of departure in the subsequent formulation of research objectives and approach to the study. It focuses on using urban regeneration strategy as an approach to intervene in coastal cities with Cultural Historical Contexts, and develop them, seeking to conserve the past values, and integrate socio-economic, environmental, and urban approaches to face the current and future challenges with all their complexities. In this concern Port Said City is taken as a case Study, where the paper aims to explore its historical and strategic importance. A multi-level proposal from the international, regional, city planning, urban design, landscape architecture is suggested. The paper focuses on Palestine Street in the city of Port Said, as one of the main heritages, historical, commercial,

entertainment waterfronts in the city. The study is a Partnership Based Model between all development partners: local academics, civil community, and the users.

Finally, the paper proposes an Integrated Design Model for the development of Historical Waterfronts in Value Cities and ends up with a detailed proposal to develop Palestine Street in Port Said city.

KEYWORDS: Urban Regeneration, Culture Heritage, Port Said, Palestine Street, partnership-based model, integrated design model.

URBAN REGENERATION

Defining Regeneration.

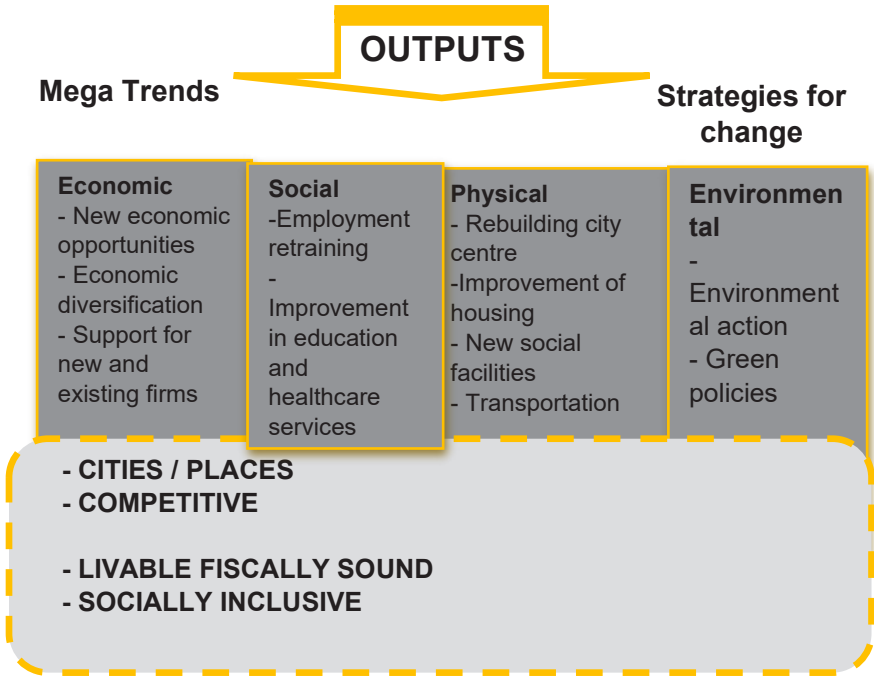
Urban regeneration is defined as a comprehensive and integrated vision and action to address urban problems through lasting improvements in the economic, physical, social and environmental condition of an area (1). Another more inclusive definition of urban regeneration, Robert and Sykes state that urban regeneration is a comprehensive and integrated vision and action to address urban problems through a lasting improvement in the economic, physical, social, and environmental condition of an area.

They feel that given its emphasis on partnership and strategic approach; it can perform an enabling role in achieving sustainability (1). Finally, it is about wealth; the generation of profit, of income, of resources, and how these are distributed between rich and poor areas, and groups. It is a highly political discipline; it is about people and power (2). This definition will be a milestone in the subsequent formulation of the paper objectives and the approach to the study.

Analytical Framework for Urban Regeneration.



Figure 1: The analytical framework of the process of urban regeneration,
 Source: Tsenkova, S., 2002 (3)



Urban regeneration needs to be understood in the context of significant shifts in the economy that are beyond the control of particular localities. These sectoral changes are driven by a rapid decline of manufacturing activity and employment of semi- skilled workers, contrasted by growth in the financial services. The result is a “two-speed economy” coupled with deterioration of the urban fabric in poor communities, which accelerates the spiral of urban decline (4).

Response to challenges.

The challenges that confront urban regeneration vary from place to place and over time; different areas have a set of unique opportunities that translate into different priorities and strategies for change (5). The immediate effects of urban regeneration strategies can be grouped in four categories: economic, social, physical and environmental. In looking for ways to define long- term success, the following statement appears to be the key: cities/ places become economically competitive, liveable, fiscally sound and socially inclusive (6).

Cultural heritage in Coastal Cities.

The definition of the term “Cultural Heritage” has been evolving throughout the 20th century from an approach referring exclusively to “monuments”, mainly single buildings, a concept which has been successively broadened, considering groups of buildings (ensembles), natural and man-made sites, arriving at a definition which includes both tangible and intangible heritage and the close interrelations between the two. Most coastal communities have developed strategies, knowledge, traditions, beliefs and professional skills connected to trade, exchange and exploitation of marine resources, which are particularly rich as they correspond of the specific challenges connected to the management of the coastal and marine environment and because of the particular intensity of exchanges between cultures passing across the sea (7).

Coastal and marine activities have created buildings and artefacts highly adapted to their specific technical needs, like port structures, shipyards, structures for navigation, fisheries and aquaculture as well as representative buildings which once defined the physical interface between land and sea, defining the identity of a place.

Megatrends.

Cultural heritage has a potential of contributing to economic development, enhancing, if properly managed, the local potentials for attracting quality tourism in an area. The protection of this heritage represents a special challenge in the context of coastal zones, where pressures on land use are high, as economic interests connected to the conservation are frequently not developed, and the ethic imperative in favour of future generation’s rights only rarely has a political voice in coastal management processes. (8)

PORT SAID, THE CITY

International impact.

Port Said is considered as the World Corner. It is acted as a global city since its establishment and flourished particularly during the nineteenth and the first half of the twentieth century when it was inhabited by various nationalities and religions. Most of them were from Mediterranean countries, and they coexisted intolerance, forming a cosmopolitan community. (9)



Figure 2: Port Said city and its international impact

Referring to this fact “If you truly wish to find someone you have known and who travels, there are two points on the globe you have but to sit and wait, sooner or later your man will come there: the docks of London and Port Said”, Rudyard Kipling once said. (9)

Regional Role.

Port Said is located in the region of Suez Canal with other 5 cities: Ismailia, Suez, North Sinai, South Sinai, and Sharkia. The region is enrolled on the top of the national development plans of Egypt’s National Vision 2052. Port Said city has a big share of development projects in the east and west extensions of the city. (10)



Figure 3: Cities of Suez Canal Region [10]; Figure 4: Development Projects in Suez Canal Zone [11]. Source 3: <http://gopp.gov.eg/eg-map/>; Source 4: <https://www.sczone.eg/English/Pages/default.aspx>

City planning “Port Said City”.

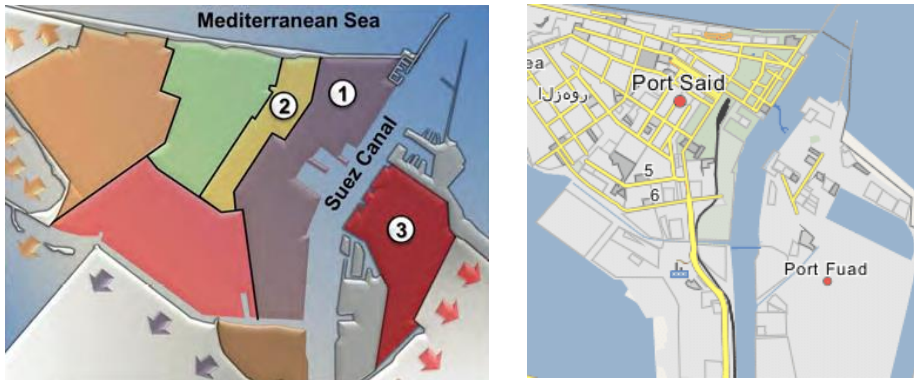


Figure 5: City Planning for Port Said City

Port Said city is comprised of 7 districts. The historic urban fabric can be distributed mainly into 3 main districts according to the typology of buildings and usage, which are the European quarter, the Arab quarter and the garden city of Port Fouad. (12)

PALESTINE STREET IN PORT SAID CITY

Introduction.

On 15th of January 2019, the Egyptian Engineering Association in Port Said city call architects and engineers to participate in the national competition to develop Palestine Street in Port Said city. The call was very interesting to all the architecture community, especially the city has two architecture and urban schools, one in Port Said University, and the other is in the Arab Academy for Science and Technology and Maritime. The competition passionate the architecture community to participate, 16 participants join the competition varying between groups and individuals. The paper is based on the delivered proposal by one of the participant teams, who gain the second position after obscured the first one.

The team consists of different members varying in age, backgrounds, and specializations from architecture, urban design, urban planning & development, environmental, and architecture design & visualization.

History of the street.



Figure 6: Palestine Street in the past



Figure 7: Simon Arzet Building

Palestine Street is considered one of the most important streets in Port Said city since its inception because it is directly overlooking the Suez Canal. The street was called Francois Joseph according to The Emperor of Austria and King of Hungary Then the Street Was Called Sultan Hussein according to The second son of Khedive Ismail after that the street was called Shokry Al Quwatli according to the President of the Republic, which achieved unity with Egypt. The street finally called the Palestine street till now.

The street has many of attraction points and historical buildings, which was found around the stages of development for the street. Simon Arzet mall, it was the second branch in 1923 and the first branch in the trade street (Al Nahda street currently). The owners were Moshly

and Bandarly (two of the richest Jews in Egypt) and was considered the largest commercial complex in Port Said at that time and the tourist finds all that is needed not only for goods, ornaments and antiques, but there were in it sections provide all services to the tourist was a barber shop and a department of repair of watches and a section of the tools for photography and the strengthening of films.

Old Port Said lighthouse (1868 - 1870), Intersection of Palestine Street with Al-Jabarty Street There was old Port Said Light House the first reinforced concrete lighthouse in the world. Its height was about 56 meters and has eight faces. It was Electrically operated and then replaced by gas 1915. It was with Black and white for daytime guidance. (13)

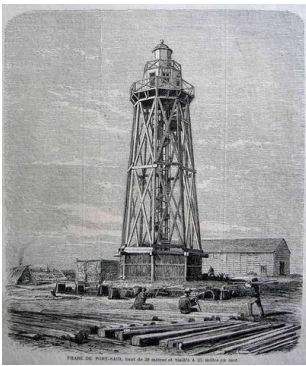


Figure 8: Old Light House

EXISTING SITUATION & URBAN SURVEY

Land Use Study & Analysis.



Figure 9: Land use study of Palestine Street. Source: developed by the researchers from the site surveying

Building Conditions Study & Analysis.



Figure 10: Building Condition study of Palestine Street. Source: developed by the researchers from the site surveying

Building Heights Study & Analysis.



Figure 11: Building Heights study of Palestine Street. Source: developed by the researchers from the site surveying

URBAN ANALYSIS & DESIGN DECISIONS

Visibility Study.

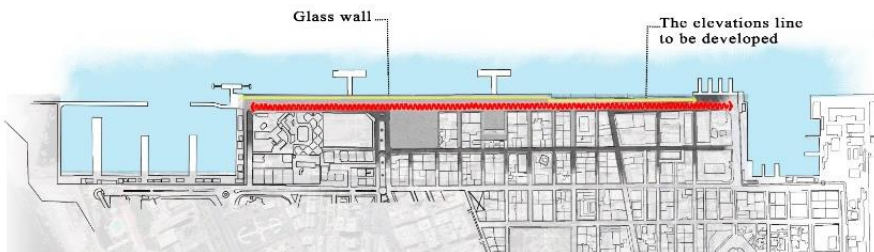
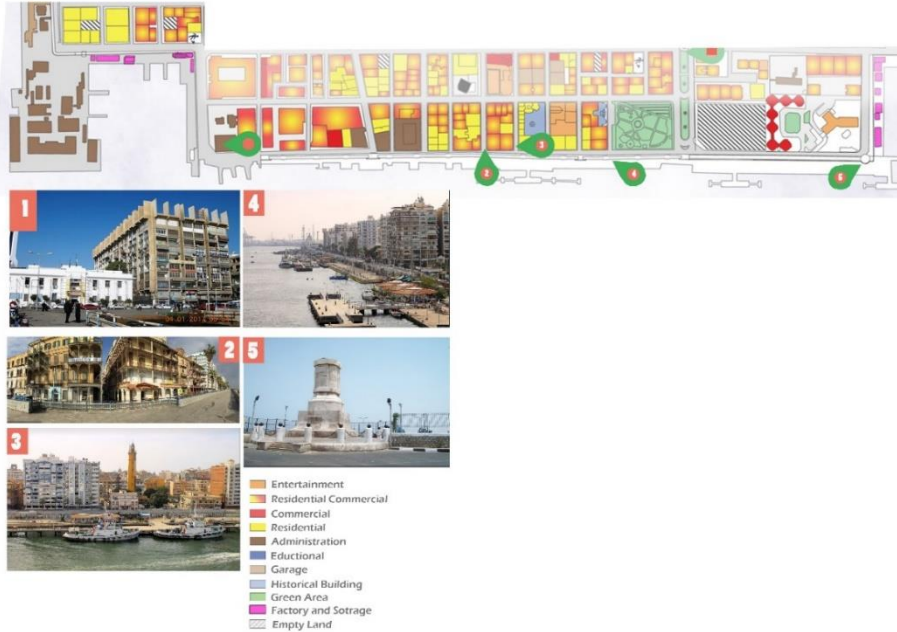


Figure 12: The Visibility Axis. Source: developed by the researchers from the site surveying

The first wall: The architectural façade of the buildings



The proposal will develop the facade within the same architectural pattern to achieve a conserving contemporary harmony along the street. A Colour Code for the street will be developed to achieve a certain sense of harmony in the historic area of the city.

The second wall: The Suez Canal Edge

The proposal promotes to use the view of the Canal to have 100% visibility of the view with putting in consideration security concerns, that's why the proposal recommends a Double Tempered Bullets Proof Glass Wall with height 4 m, and 2-4 cm thickness, to have a clear enjoyable and secure view of the Canal, with limited accessibility for the customs employees.

Accessibility & Mobility.

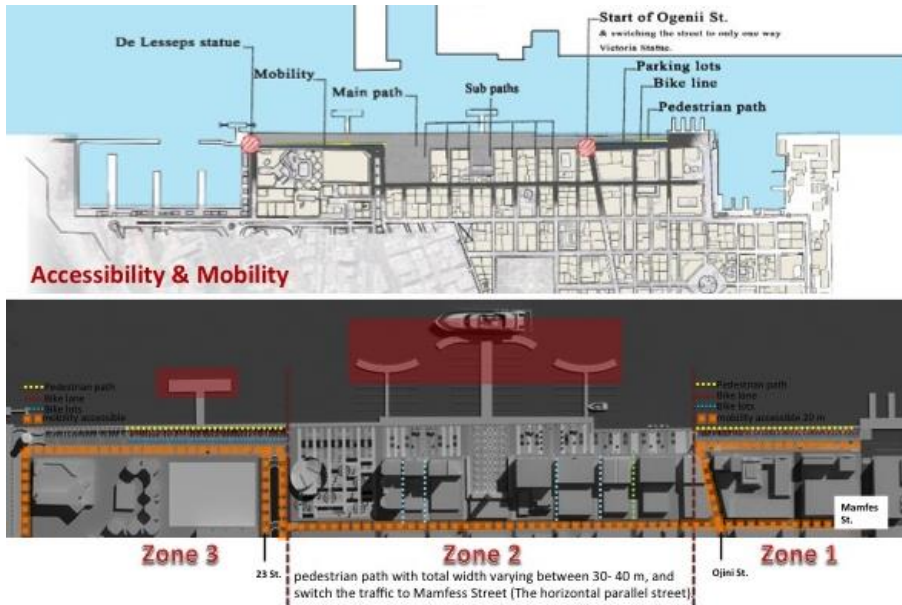


Figure 13: Main zones in Palestine Street. Source: developed by the researchers from the site surveying

Distribution of Palestine Street (1.3 km) to 3 zones:

- 1 - From ferry squares to Eugenia street (central building): mobility accessible 20 m+ pedestrian path with 15 m width
- 2 - From central to the historical Garden: pedestrian path with total width varying between 30- 40 m and switch the traffic to Mamfess Street (The horizontal parallel street).
- 3 - From Historical Garden to De-lecps statue mobility accessible + pedestrian path with 12 m width.
- 4 - Providing bicycle lanes to encourage citizens to ride bicycles.
- 5 - Providing spaces for on-street parking parallel with the pedestrian area.

Palestine Street's Visual Image

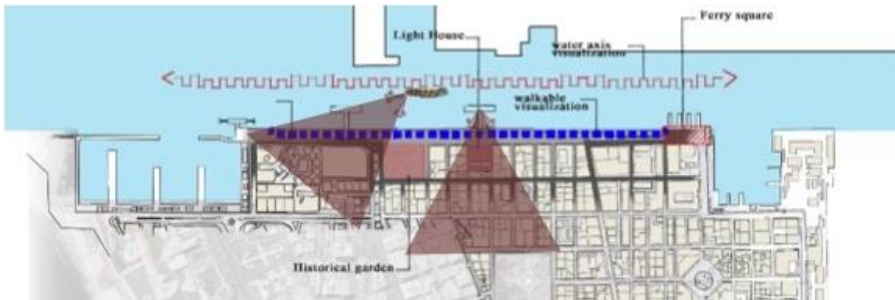


Figure 14: Visual Image Study. Source: developed by the researchers from the site surveying

Kevin Lynch defined image-ability as “the quality in a physical object which gives it a high probability of arousing a clear and strong visual image in any given observer”. An image-able city is one whose landmarks, centers, districts, and routes are differentiated yet well-connected, forming a larger unit we can picture mentally, where we are well-oriented and can move about confidently without fear of becoming lost. (14)

The street has 3 main attractive points of visual image:

The main Axis from the ferry squares, parallel with the street walls, and direct to De-Lecipes statue “The Vista”.

The perpendicular visual images from the Ship’s marina to the lighthouse “the main attraction point”.

The East South “Parallel” visual image from the ships in the Canal to the port and its waterfront

Design Decision: The proposal promotes the 3 main visual images to ensure the economic, historical, and emotional engagement between Port Said citizens and the Suez Canal.

INTEGRATED MULTIDISCIPLINARY DESIGN MODEL

“Port Said Storytelling “PSST” - Port Said Egypt’s Forgotten Treasure”

With a shared faithful platform of sustainability and people-centered needs, The Team started to develop their vision. A comprehensive development vision is proposed for the development of Palestine Street based on a multi-scale approach from regional planning, urban development & planning, urban design then touches the ground to the scale of architecture. The proposal will use the Urban

Regeneration Strategy as the main policy to intervene in the city, especially in a very sensitive area of Port Said city. The comprehensive proposed vision would lead the proposal to sustainability, proving that sustainability is more integrated and people-centred than any definition.

Vision.

The main concept of this proposal is to discuss the obstacles that come up when trying to propose sustainable development based on built heritage. What we really mean with the Cultural heritage is the traditions and the achievements of people in any place. The heritage is considered a priceless and unique asset that belong to all humanity not only one nation. Knowing the historical and cultural value of Port Said will help in proposing a sustainable tourism development plan based on heritage conservation.

In this small city, you can see buildings of different architectural styles and several nationalities have lived in and each added its own style and taste. This made what we may call an open-air architectural museum; several architects left symbols, on old buildings, that clearly points to their origins from around the Mediterranean.

In this context, heritage conservation does not mean turning this city into museums; instead, it calls for finding new socio-economic models for its built heritage. We may say that the conservation of the built heritage, in Port Said, is an essential decision in cultural societies as it just needs a little effort to become a major tourist attraction. (12)

Port Said, like many Egyptian cities, made an effort to conserve the built heritage while adapting to rapid development. According to Egyptian Antiquities Information System (EAIS), Port Said has a wealth of Mediterranean architectural styles that span decades and need correct approaches to conserve (EAIS, 2007). (15)



Figure 15: Proposes the 3 main pillars in the Sustainable Development plan. Source: the researchers

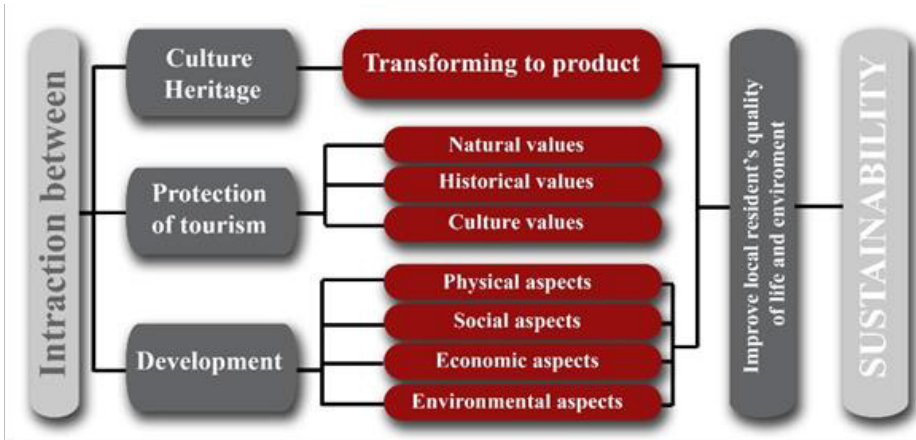


Figure 16: Proposes the Sustainable Development Plan

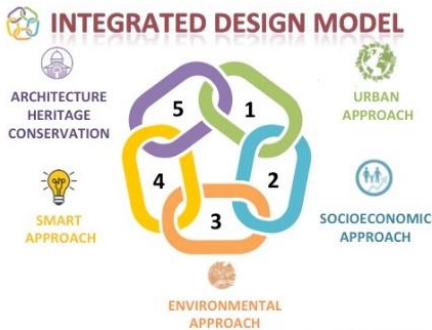


Figure 17: Proposes the Integrated Design Model for intervene in the existing urban area.

Development Partners

A deep believing in development is for people and by people participation, guides the team to communicate through focus group and questionnaire with the development partners:

Civil Community: Port Said Historical Association

Experts: Architectural & Urban Heritage Experts from the National Organization of Urban Harmony.

Users of the shops in the street.

Results and Outcomes:

Expertise & Civil Community.

A focus group, hosted by Port Said Historical Association, was held with civil community and experts in Architectural & Urban Heritage Conservation, and Urban Harmony and the main recommendations were:

A model of an integrated project to achieve sustainable development in Port Said;

- Ensuring the identity of the city;
- Promoting the waterfront;
- Tourism development;
- Small projects to increase employment;
- Management of the future project and maintenance;
- Promoting Port said City as a Multi civilization;
- Investment in the city;
- Economic & social impact of the development on the users.

Users of the shops.

A questionnaire was developed for the shop’s renters and owners, and a pilot study on 20% of them was made. The results are:

- All of them knew about the governor decisions;
- The majority agrees on the development concept;
- The majority agrees on facades development;
- All of them refused to move from their shops.



Figure 18: Workshop with the Civil Community, the team and experts in Architectural Heritage.



Figure 19: Site Visit by the team of the project, with the expert in Architectural Heritage.

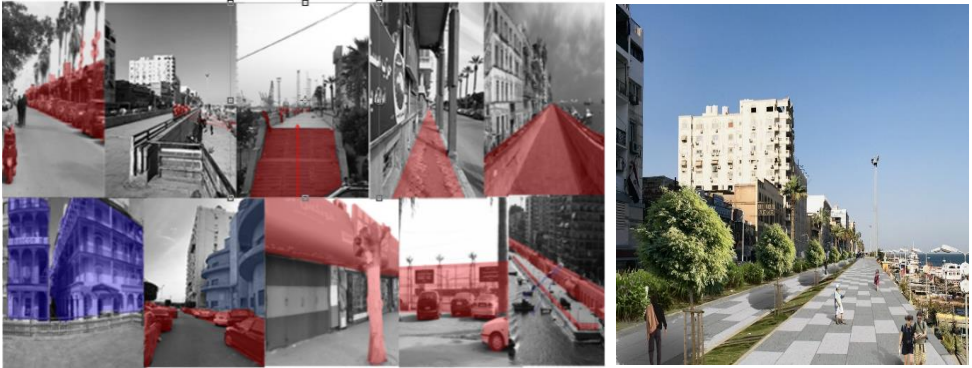


Figure 20: Street Analysis Source: Developed by the researchers from the site visit

DESIGN PROPOSAL & CONCEPTS

Historic Urban Fabric & Design Pattern.

Architecture is the best presenter about what is happening and what is taking place inside, as if it is speaking. Port Said architecture is rich, eclectic and contemporary. The influences of the Arab world and Europe still found in Port Said architecture, both on their own or blended with other architectural styles. Port Said is witnessing a construction boom, which is rapidly changing the urban fabric, initiating to growing threats to the historical built heritage. Palestine Street is located in The European quarter (Al-Sharq), which has a regular layout in the form of a right-angled triangle, combining European city planning and architectural styles. (12)

Design Decision: The proposal chooses to eager/promote the historic urban form by extending the grid urban form to shape the street urban pattern.

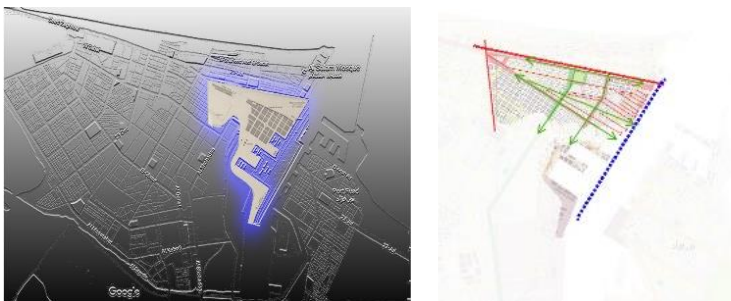


Figure 21: adapting the current status with the design concept. Source: Developed by the researchers

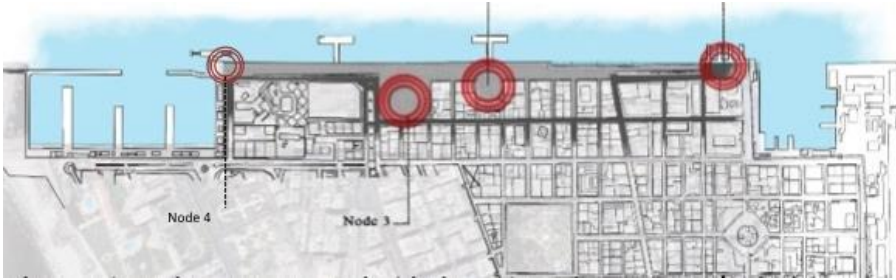
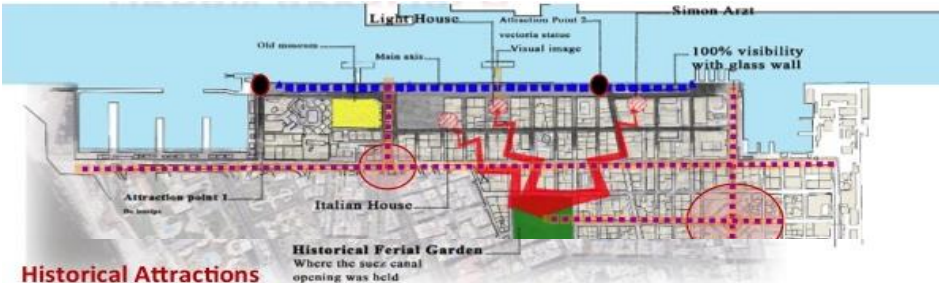


Figure 22: Urban Fabric for Port Said City and its effect on the proposed landscape pattern of Palestine Street. Source: the researchers



Figure 23: The main concept, and the Proposed Design Nodes. Source: the researchers



Historical Attractions

Figure 24: historical Attractions

Main Nodes & Design Concept.

The proposal promotes conserve, and rehabilitation of the attractions. The 3 main nodes are connected with the main path carrying us/, which is extended till the Suez Canal Authority Building (The New Museum).

- Node 1: The ferry squares is an existing node.
- Node 2:(Fanara) The Enlightenment Plaza is containing entertainment and commercial services (cafes & restaurants &

souvenir shops for canal zone) with Night Hologram and laser Shows.

- Node 3: the Italian House and the Historical Garden, which will be integrated together to make A Cultural Hub.
- Node 4: de Ieclipse.



Figure 25: Proposed Master Layout. Source: the researchers

CONCLUSION & RECOMMENDATIONS

Urban regeneration (UR) could be generically defined as a comprehensive & integrated vision & action that can address urban problems through lasting improvements not only in the economic, physical conditions of an area but also social, and environmental conditions.

Most coastal communities have developed strategies, knowledge, traditions, beliefs and professional skills connected to trade, exchange and exploitation of marine resources, which are particularly rich as they correspond to the specific challenges connected to the management of the coastal and marine environment and because of the particular intensity of exchanges between cultures passing across the sea.

Coastal & marine activities have created buildings & artefacts highly adapted to their specific technical needs, like port structures, shipyards, structures for navigation, fisheries and aquaculture as well as representative buildings which once defined the physical interface between land and sea, defining the identity of a place.

Cultural heritage has a potential of contributing to economic development, enhancing, if properly managed, the local potentials for attracting quality tourism in an area. The protection of this heritage represents a special challenge in the context of coastal zones, where pressures on land use are high, as economic interests connected to the conservation are frequently not developed, and the ethic imperative in favour of future generation's rights only rarely has a political voice in

coastal management processes. Heritage conservation does not mean just turning this city into museums; instead, it calls for finding new socio-economic uses for its built-heritage and promotes for maintaining what needs to be conserved in the form of sustainable active cycles in the frame of what called urban regeneration.

Moving to Port Said city as the case study in this paper, the city is witnessing a construction boom, which is rapidly changing the urban fabric, initiating to growing threats to the historical built-heritage. Based on the fact that Port Said architecture is rich, eclectic and contemporary & the influences of the Arab world and Europe still exist in Port Said architecture & urban contexts, both on their own or blended with other architectural styles. We may say that the conservation of the built heritage in Port Said is a milestone in similar cultural societies as it just needs a little effort to be put on the track of touristic development.

The paper ended by some recommendations among them suggesting A model of an integrated project to achieve sustainable development in general, applied in Port Said, by Promoting the City as a Multi civilization global spot; through working on Touristic Development by emphasizing on the identity of the city, and promoting its waterfront represented in Palestine street, creating Small projects to increase employment, Management of the future projects and maintenance within and integrated frame work of urban regeneration; besides Investment in the city considering the Economic & social impact of the development on the users

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SHARED METHODS FOR THE VALORISATION OF THE INLAND TERRITORY. THE ALLIANCE BETWEEN SAMO AND THE ABANDONED VILLAGE OF PRECACORE

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ABSTRACT

The inland territories, often apparently marginal with respect to the directions of economic growth of the extended territory (Metropolitan City of Reggio Calabria), are actually endowed with fundamental factors of development: natural and cultural resources, agri-food resources, artisan skills. Thus, they contribute to the strengthening and construction of the image and form of the extended territory, enhancing the aspects consolidated over time. Acting on such potential levers, it intends to carry out initiatives aimed at keeping alive the existing natural and cultural heritage of the territory and strengthening local communities, respecting the balances consolidated by centuries of traditions, finalizing interventions to new forms of inhabit sustainable and ecological territory.

The paper focuses a triggered process that concerns the recovery of land use starting from two contexts of excellence: the ancient village of Precacore and the La Verde river. These places become spaces of shared planning for the activation of forms of local sustainable and innovative development. The planned activities and the actors involved activate a system of rules in which the criteria of public utility, economic performance, social value, environmental sustainability are the basis of effective planning solutions of the territory, through proposals whose identity and cultural character re-establish the idea of the future of local communities.

Besides the consolidation of the participation system, the objective is the development of projects concerning the sustainable development of the territory, aimed at promoting forms of participatory experimentation, but able to generate values, starting from the local point of view in order to answer to issues ecological, social and economic. The process constitutes a system in continuous growth towards the identity values of the territory. At the moment, Re_think

Precacore. Ideas for the future of the ancient village. Projects and processes to innovate and enhance and the River Contract as a territory project for the La Verde Valley are the ongoing experiences develop by the LaStre Laboratory of the PAU Department, which is working on these accompanying processes for the shared enhancement of the internal territory. The activity was started with a Agreement between the Municipality of Samo and the LaStre laboratory, for the definition of the operating models and innovative management practices of territorial governance, in collaboration with the Aspromonte National Park Authority.

KEYWORDS: Shared Method, Heritage, River Contract, Local Communities

THE POTENTIAL LEVELS OF DEVELOPMENT OF INLAND TERRITORIES

The Italian inland areas are characterized by the presence of a highly valuable territorial capital: a natural heritage with animal, plant and landscape biodiversity; an important historical, architectural and cultural heritage, but also intangible assets such as cultures, traditions and languages that are fundamental elements of identity for the settled communities and are, by their very nature, history and structures that produce social cohesion and a sense of community.

The strategies for promoting local development at national and international level, have focused attention, through reflections and practices, on the need to identify innovative forms and procedures capable of promoting local development through the centrality of the quality of life which, through the programming and planning of interventions that fit into a territorial dimension, highlight the specificities (cultural and natural heritage) of each marginal area.

The development of these territories through the valorisation of territorial capital is perfectly in line with the objectives of the European Strategy 2030 for a smart, sustainable and inclusive growth. Indeed, in the approval of the National Strategy for inland areas (SNAI) within the framework of the Union's cohesion policies, the enhancement of the cultural and natural heritage aimed at territorial improvement is indicated among the main levers to reverse the trend depopulation and contribute to local development. Furthermore, investing in inland areas, not only economically, allows the territory to remain healthy.

In this sense, the proposals of the research group of LaStre of the PAU Department of the Mediterranean University that is working in a territorial context concerning the south-eastern area of the Metropolitan City of Reggio Calabria, within which the protected territory of the Aspromonte National Park is entirely included.

The objective of the experimentation is to develop innovative processes aimed at promoting an integrated development that also aims to counter the depopulation and weakness of the economic system of inland areas, through policies (participated) of soil protection, urban security, promotion traditional agricultural and craft activities, as well as the creation of quality tourist activities.

THE ASPROMONTE NATIONAL PARK IN THE METROPOLITAN CITY OF REGGIO CALABRIA

The Metropolitan City of Reggio Calabria is characterized by a territorial system with different areas and contexts for morphological configurations, settlement characteristics and levels of economic development. Its territory coincides with that of the former province, while relations and vocations can be identified in several territorial systems rich in peculiarities and diversified identities.

The PNA is one of the five homogeneous territorial zones of the metropolitan city (the others are the plain of Gioia Tauro, the Strait, the Locride and the Grecanica area). This choice represents one of the most innovative aspects of the Statute that recognizes the Park Area as a Metropolitan garden, identifying a different and innovative relationship between the “city” and its metropolitan territory, which wants to place itself on a par with other territorial contexts to activate forms of development and enhancement consistent with the peculiarities of the places.

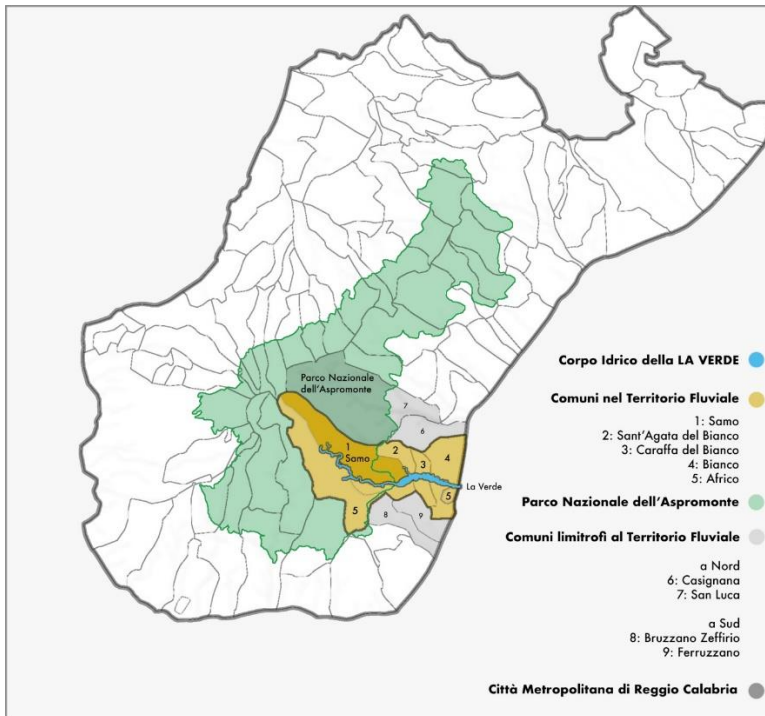


Figure 1: The La Verde valley in the Metropolitan City of Reggio Calabria

The presence of a protected area, the Aspromonte National Park, a mountain park of over 65,000 hectares, included entirely in the metropolitan perimeter, represents a unique example at European level. It is an area that is characterized by the exceptional naturalistic, landscape and cultural heritage and by a rural and mountain settlement system in which the tendency to interpret a residential character, even widespread, linked to the use of tourism with cultural purposes and is increasingly consolidated. landscape, historical and archaeological, enogastronomic and naturalistic. In the centers inside the park is expressed a culture of places characterized by a rural world that is joined in a thousand different narratives and looks at a common and at the same time peculiar project.

The territory of the Aspromonte National Park is a sort of programming, rich in history and culture that gives rise to a strong uniqueness in the settled communities. Its central position in the “vast” context of the metropolitan territory, which includes 37 municipalities, one third of those that make up the entire area, represents a strong point in the metropolitan process of the city of Reggio Calabria. Furthermore, the multiplicity and variety of the many local contexts give rise to as many settlement systems, the smaller, often fragile centers of the metropolitan context. They produce a geography, a different vision, for which it is necessary to find forms of aggregation and specific spaces of intervention in the process of establishing the Metropolitan City, above all in the light of the homogeneity that provides the territory of the Park. The geography, therefore, reveals a territory that has experienced several more or less positive events, from depopulation phenomena, to the demographic and economic crisis and not least the phenomena of physical degradation of the territory, all accompanied or in any case consequent to a general depletion of the territory itself.



Figure 2: Samo, Precacore and and La Verde river

The territory of the La Verde river valley (the territorial context of the paper) is located almost entirely in the area of the Aspromonte Park (Fig. 1), on the eastern side of the Aspromonte massif and winds, at the mouth of the Ionian coast of Reggio, between the inhabited centers of Africo Nuovo and Bianco; it also includes other centers that gravitate in the hilly area of the valley: Ferruzzano, Samo-Precacore, Sant'Agata del Bianco and Caraffa del Bianco. This context has all the characteristics (socio-economic, territorial and morphological) already described, which characterize the territory of the park. Moreover, the low level of structures and services, a marked youth unemployment with consequent social poverty, a high index of population aging, generate an increase in social and spatial segregation which makes the territory more easily permeable by depopulation phenomena. This also involves a deterioration of the settlement heritage and of the infrastructural endowment with consequent contraction of the road infrastructures, in addition to the loss of an effective defense of the territory.

Here, then, that the processes open up towards new geographies that intercept new issues: environmental, cultural-identity, strategic-infrastructural, which focus on the redevelopment of the territory and of the infrastructural network, on the reorganization of services and public space, on the need for physical accessibility, and not, of places and things, of reconnecting the different urban parts and the territory through the recognition and the project of the eco-social networks of the territory.

SENSIBLE ALLIANCES FOR NEW FORMS OF LIVING

In these territories and in the entire Region, difficulties are encountered in promoting a participatory process of sustainable development through operational and shared solutions aimed at integrating different actions promoted by different subjects. In recent years, regional policy has attempted to support territorial governance that is capable of constructing a negotiated strategic planning for urban and environmental regeneration and socio-economic regeneration of the territories, promoting place-based approaches that focus on rediscovery and the enhancement of the Internal Areas. Therefore, the time seems to be ripe to promote processes already successfully tested in some European urban and territorial contexts, where good practices of urban and socio-economic regeneration have succeeded in triggering new forms of participation, integration and entrepreneurial initiatives, even in areas particularly sensitive and problematic.

These problems are very current and felt in this area, which must be addressed with the participation of all the stakeholders and with the adoption of the most appropriate tools. It is necessary to seek management models that foster cooperation, exchange of experiences and experimentation with new initiatives aimed at encouraging the integration of the diversity present in the territory. It is therefore necessary to promote actions that increase the sense of belonging, and therefore of responsibility, of the inhabitants towards the places they live in, so that in living everyday life, the community builds its own active social role. These actions must be such as to affect the quality of life and aim to better manage the time, space and quality of public places. Forming / building a culture for and of the territory, relating the civic sense of the inhabitants and their perception of urban quality, also means exercising planning practices capable of raising the quality of life, social cohesion and the pleasantness and safety of places.

The experiments of the LaStre laboratory on the territory in question, the territorial context of the valley of the La Verde river, included in the broader technical-scientific collaboration path between the Municipal Administration of Samo (one of the municipalities of the valley) and the PAU Department, in implementation of the Program Agreement between the Aspromonte National Park Authority and the Municipality, have materialized some territorial revitalization activities aimed at the knowledge for the promotion of places, but also the production / elaboration of project visions for the future of the territory, through workshops and conferences / meetings, which have had as their object the vast territory, with the aim of creating affection and a sense of belonging to places that have become marginal.

In particular, the prospects for experimentation find space in the significant opportunities to support and support the activities of "thinking about the city and the territories" to revive areas denied to the sense of citizenship, to which university knowledge is called to participate with positive contributions impact on the educational and training sphere of the thought of students, doctoral students and technicians.

The proposed approach aims to focus on how the search for a new urban, landscape and territorial quality presupposes the re-signification of places, with the aim of identifying a virtuous synergy between economic, environmental, social and cultural resources present, with which to create a development model that can generate urban sustainability, community culture, social cohesion.

Last year the results of the design workshop were presented, drawn up by five groups of over thirty professionals, students, doctoral

students and graduates. One of the five themes, “O_S(i)amo, a participatory local development model”, concerned the opportunities contracted by the river as a territorial project. The paths and outcomes have shown how this type of activity is also an interesting way of bringing the communities settled into the problems of the territory and helping them to achieve forms of awareness and participation in the choices to be made for the government itself. A decisive role must be given to local cultural cooperatives that create the correct link between the increase in strategic planning capacity and the ability to promote identities and own resources, in order to feed the partnership strength in the implementation of interventions.

This path also includes direct collaboration in drafting the project proposal presented last July on the Strategic Project Call for the Enhancement of the Villages of Calabria and the Enhancement of the Tourist and Cultural Offer, relating to the Unitary Regional Planning 2014-2020. The LaStre has joined the UTC of the municipality of Samo developing the proposal Ideas of the future for Samos and for the ancient village of Precacore (Fig. 2), in the awareness that these small towns/villages must be understood as places of design innovation, which on the one hand they know how to guide forms of safeguarding historical identity and individual specificities, and on the other hand they emphasize new ways of involvement, activating processes capable of preserving small communities and projecting them into the future.

The foreseen interventions are linked to a need to adapt to these new needs and therefore in this specific case, to a change in the concept of efficiency strictly linked to the notion of use, function and quality of space and places. The project consists of three macro /thematic actions. The first and third propose interventions mainly of a physical and structural nature relating to the theme of “accessibility” of places and the desire to activate forms of widespread receptivity through various initiatives. The second Innovative actions and promotion of potential. O_ S(i)amoLAB is the part of the project that represents the innovative and experimental element of integration between the first two.

The proposal can be considered innovative because it realizes an endogenous type of development and integration model, through the direct and laboratorial and participatory involvement of local economic and cultural actors and actors from the academic and training world, whose creative-design skills will be set up to contribute towards actions aimed at future transformations. The project with few targeted interventions will accompany the birth and growth of a series of eco-

compatible social and economic initiatives, centered on an innovative cooperation between administrators, universities, associations, linked to the enhancement and promotion of the best expressions of the territory.

PARTICIPATED PATHS TO GENERATE VALUES

The research of the participated process involved citizens and public-technical institutions and officials operating in the fields of urban planning and civil protection at the different administrative levels, from the Circumscriptions, the Municipality, the Metropolitan City and the Calabria Region- to work to create aggregations complex engaged in functional and complementary experiences and/or support to public policies. This is a path that is still being tested towards the development of policies for the territory, which tends to collect and systematize the outcomes of the numerous experiences, both existing and “informal” (Culturability, Social innovation, Urban Innovative Action, Small Towns Act).

The activities started as a continuous process in order to build a network of local actors, united first of all by the desire to dialogue for the pursuit of common objectives, aimed at the redevelopment of the river territory, brought the Administrations involved (Municipality, Aspromonte National Park Authority, Mediterranean University), the GAL “Terre Locridee” and the other associations, in full compliance with the purposes of the River Contract instrument, to stimulate the dynamism of the local communities, through a constant territorial animation practiced at various levels by the various participating subjects, each according to their abilities and functions.

Particular forms of territorial revitalization are a privileged means to lead this territory, towards self-knowledge and the definition of local and sustainable development strategies and projects. It is a kind of path/process, the one started, which includes listening, observation of contexts, planning and realization of forums, seminars, territorial meetings, workshops, consultation tables. A technical-operational collaboration whose objective is to guide the territorial dynamics, increase the propensity to cooperation and associations, promote the culture of innovation and produce synergies between the socio-economic-cultural system and the Institutions. It was a question of triggering an action-research process, which supported the interested parties initially without a specific project, but with the aim of experimenting the transition from ideas/visions to the project and to build opportunities for active participation by definition/formation of a

cohesive community, able to circulate competences and information, in order to develop competitive forms of cooperation.

This path/process understood in this way can represent a real development opportunity for the social, economic and cultural fabric, able to implement the strategic planning processes, to start the construction of devices consistent with the needs of the territory and of the governance system. In a particularly complex territorial system for physical-geographical and socio-economic characteristics such as that of the La Verde river valley, the potential for innovation is inherent in the ability to identify and design ideas capable of enhancing the uniqueness of each portion of the territory and through the activation of territorial networks, investments, intelligence and skills, creating new and lasting job opportunities.

The planned activities and the actors involved activate a system of rules in which the criteria of public utility, economic performance, social value, environmental sustainability are the basis of effective planning solutions of the territory, through proposals whose identity and cultural character restores the idea of the future of local communities. The key elements of the project consist in identifying the potential of the River Contract instrument for the La Verde valley, a context currently lacking recent urban planning tools. A territory for which to develop a project aimed at identifying, enhancing and connecting the territorial capital of the valley and river environment through development strategies related to the agri-food sector and naturalistic and cultural tourism. This would strengthen its performance capabilities, allowing the La Verde river to become the main corridor/passageway of the Aspromonte National Park, due to its naturalistic-cultural and accommodation facilities. Among the main strengths that can characterize this design experience, the interest and involvement shown by the population on the themes of their cultural and naturalistic specificities, undoubtedly perceived as a strongly identifying element of the territory, must certainly be pointed out.

Of great impact is also the vision of the future possibility of supporting those productive processes able to favor the progressive improvement of the landscape and the employability of young employees.

Other aspects of success can certainly be found in the adoption of an articulated methodological approach and in its adaptation to the local context, as well as in the choice of a professional support for the conduct of the participatory path and in the widespread dissemination of the process within the valley territory. Moreover, one of the most

positive and important aspects can be seen in the interaction and collaboration that has been achieved, within the technical table, between the different disciplinary and operational sectors (Universities, professionals, associations), which represents an objective of the process without another virtuoso since his innovative conception, but even more in his translation into a positive and productive outcome that is not at all obvious. This last aspect represents a fundamental element to allow a good integration of the work of the technical table with that of the participatory path.

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MERCADAL: A VISUAL CHRONICLE OF THE URBAN LIFE ABOUT A MARKET SQUARE

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ABSTRACT

This paper proposes a recurrent and obsessive look on a square as part of a broader research on the discursive capacity of the image as a narrative medium of the continuous transformation of the city. The Mercadal -or Constitució, República or España square- is located in Reus and has always been the market-square and the physical and vibrant heart of this industrious, liberal and commercial medium-sized Catalan city.

In this sense, this study focuses on the evolution of a specific urban reference and questions both the capacity of its image to build a historical narrative and its descriptive potential to reveal the specificity of the place despite its continuous transformation. For this purpose, it was decided to draw up a series of propositive cartographies elaborated from the detailed analysis of the urban images on the 111 postcards collected over more than a century (1902-2012).

Taking as a starting point some works based on intentional reading of the image -such as Aby Warburg's Atlas Mnemosyne, André Malraux's Le Musée Imaginaire or Michelangelo Antonioni's Blow Up-, each cartography has been entitled following a photographic technique (tripods, positions, openings or flashes), some manipulation process (overlays, blow ups) or different explicit research purposes (shadows, horizons or memory). In all of them, the image unveils the formal properties of the square as an inherent condition to its public vocation and privileged scenario.

The results are clear and eloquent showing a collection of cartographies that allows to condense the urban image as a sum of partialities and visual reiterations and find in the postcard a format capable of both producing the visual chronicle of a place and simultaneously revealing specific urban and social traits that consolidate the collective imaginary of this particular place.

KEYWORDS: Postcards, Cartographies, Collective Imaginary, Architectural Psychology, Memory of the Place, Historic urbanism, City Transformation, Urban images

INTRODUCTION

This paper aims to be a tribute to postcard collecting. Therefore, the work intentionally emphasizes its main characteristics - monothematic, exclusive and localist- and proposes to understand them in a positive key. Like Orlando (Wolf, 1928), this research tries to reach, being close to obsessive collecting, the impossible desire to live many experiences at different times, but in one only location: the Mercadal square. This is the place of reference, the public realm from which we want to capture and condense all the images, deconstruct them thoroughly and reconstruct them in a systematic way to obtain, as a final aim, urban knowledge.

For this, 111 Mercadals: a chronological frieze proposes a reiterated look at a particular space of intense urbanity and recognizes it as the civic heart that gives form and meaning to the City-Market through a graphic -photographic, to be precise- methodology based on continuous observation around the marketplace in order to discover its constant transformation and its capacity to condense both time and memory. Thus, by adding a series of variables such as position, objective aperture, depth of field, relative height, focus or date, the object allows reading to reveal certain features of the place and structure its own evolution and identity. Thereby, the detailed study of the images of the Reus marketplace can reveal common issues and different affinities with cities such Vic, Balaguer or Ciutadella and marketplaces such the Italian Piazze delle Erbe, the German Mark Platz or the English Markets.

In parallel, although surely the collection of images used as a basis already has per se, a remarkable value as a research object, this paper is also based on the idea that collecting is only a preliminary and necessary step to investigate. In statistical terms, it would be to build the sample before being submitted to the thorough analysis of the possible correlations between its different variables. In this sense, the frieze, as a sum of visual objects, has been used as a source for a systemic reflection on the medium of the image itself. This work has been developed in two sub-chapters: Tripods and Manipulations. The first one reads the relation between the physical condition of the Mercadal square and the photographic technique used to capture it. Manipulations, on the other hand, reflects on the capacity of the image to understand the urban history and memory of the place through its pictures in postcards.

111 MERCADALS, A CHRONOLOGICAL FRIEZE

As in the images systematically obtained, gathered and collected by the Brooklyn smoker of the movie directed by Wang with a Paul Auster's script (1995), the chronological order prevails in this work. Thereby, the acquisition time has been imposed as the main coordinate axis although, from the postcard collector view, this variable is not immediate. What is the date that allows ordering the postcards: the edition, the writing, or the shipping date? Where to place an image of the fifty converted into a postcard forty years later? In this study, this doubt has been solved by allowing the postal criterion to prevail, that is: on the one hand, only postcards have been accepted (renouncing, with that, to mere photographs or posters) and, on the other hand, the imposed order has been the postcard edition date. With this, maybe the list of postcards presented as sample is not definitive and we hope to extend the research towards the origin, discovering -if there were any- of the pioneers and continue incorporating the new ones that will be published in the future.

In turn, the main source has been the J.M^a. Balañà's private collection gathered over more than thirty years extending the sample with other collections from Estivill, Pàmies and Zaragoza and incorporating 11 images edited in the Postcard catalogue of Reus that -supposedly- had collected all those postcards produced of the city of Reus until 1939.

Altogether, the frieze is composed of 198 images that are arranged in chronological order in a continuous series. Among them, there are postcards that maintain an obvious relationship and their images are of the same author, were taken the same day, represent the same activity or are even identical in black and white and colour. They have been considered postcards of the same moment, resulting in 111 moments that, as a whole, draw through the visual continuity of the square, a vitally intense space that provokes, generates and supports the progressive changes of the different pieces and uses that build. In other words, the frieze reveals a constantly changing urban reality from the first postcard -of 1902- until the last one -of 2012- following an irregular, hazardous and broken rhythm.

So, the first images of the Mercadal square - then called Constitution - are taken with a very open lens and have The Town Hall as a centre. The one of 1905 is the first one that looks toward the Navàs' House, still being under construction. Another, from 1906, collects the square as a base for a general look -almost aerial- of the city made from the Bell Tower. In 1908, the Casa Navàs seems finished. From then on,

the market, the party time and the two most significant buildings - the Town Hall and the Navàs' residence - establish a relationship and a counterpoint between the daily life routine and the exceptional celebration times. They are two good façades and two points of reference where to alternatively fix the look. In this age, the Mercadal is usually photographed full of people either on parties or on market days consolidating the square as a true vital centre of reference for the city despite the Prim square recently built northern. The postcards proudly show its renovated and decorated buildings. In architectural terms, Casa Navàs dominates being the sole protagonist. Its slender corner, crowned by the very light tower, gives vertical dimension to the image and a dose of modernity to both the square and the city.

As for the turbulent period of the Second Republic, the Mercadal is called Plaza de la República. It was, in fact, during the Spanish Civil War that the bombardment that took place -specifically at 8:45 am on March 26, 1938- and impact fully two buildings of the square destroying, in turn, the tower and the second floor of the Casa Navàs. Since then, the images have turned their backs on it and no other postcard have ever been made from outside. The focus has returned to the Town Hall, renovated with a clumsy clock tower that being neither Noucentist nor Fascist style has never reached comparable to the nostalgic memory of the fragile and longed tower of Casa Navàs. After the war, the daily market leaves the Mercadal in 1948. The image without number located between the 55th and 56th moment refers to the new market building. This critical moment represents the loss of the essential activity of the square and, above all, the sense of this marketplace. Thereby, the epicentre of urban energy definitely moved Monterols street up to the Prim square leaving a Mercadal - called Plaza España at this age-expectant. Those are years when Mercadal is full of cars and is speculated on and fortunately saved from being gutted to house an underground parking lot. Meanwhile, it specialized in government and festive functions. The trade faltered and the postcards, already in colour, are scarcer.

Finally, with the arrival of democracy, the square regains the name of Mercadal even if, in fact, the market function is no longer so in its memory. The party and the leisure are more and more dominant in the frieze and the awnings of the Market are progressively replaced by those of the bars.

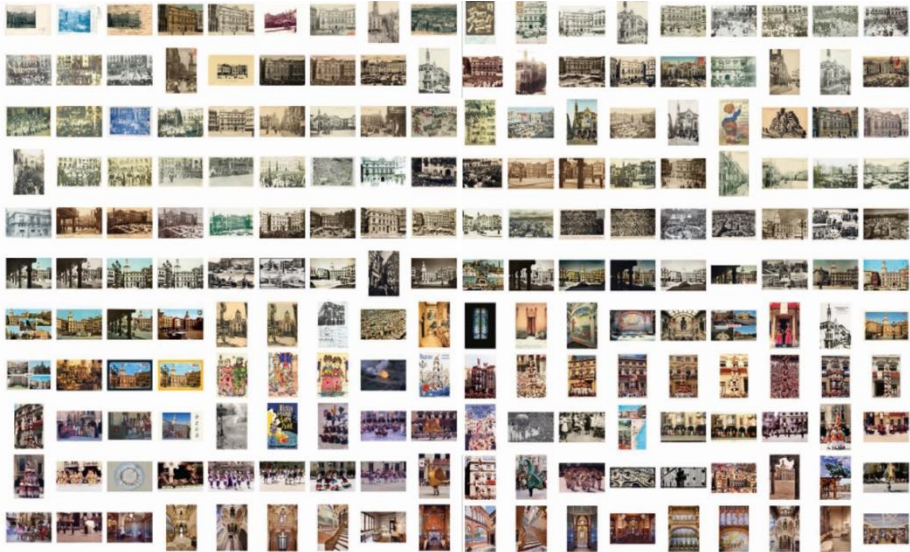


Figure 5: 111 Mercadals, a chronological frieze composed of 111 moments and 198 postcards.

TRIPODS

This section aims to measure the Mercadal square and appropriate it. Not from its materiality, but only under the photographic technique used on taking the pictures supported by the postcards. Thus, allows to reflect on the position of the camera, the opening of the shutter and the angle of vision, which establish, altogether, the depth of the gaze. In this sense, it is showed what the photographer wanted to show. Being 198 images produced over one hundred and ten years, the different interests and wills are added and superimposed, building the collective image of the square from many reiterated individual judgments. The sum reveals a Mercadal as the result of continuous glances that illuminate, flash to flash, certain parts and obscure others because of their technical difficulty or lack of interest. With this, a fragile consensus result is obtained.

Positions and openings

It is a cartography made with precise points and lines that determine the angles of gaze, referencing, on the plane of the square, the position of the tripod by means of its UTM coordinates - xyz - and the focal aperture of the shutter - in degrees - used by the photographer in every moment of taking. It also indicates the reference moment and

the height of the tripod - in red, those that are at ground level and in violet, those that have placed the tripod on balconies or roofs -.

This exercise explains that the photographer has felt, throughout history, a predilection for placing himself in the open corners allowing him or her to have a greater opening of angle of vision that confirmed the measures of the square -55 x 60 meters and diagonal of 85 and 70 meters - as ideal to capture the whole without losing detail. Although the optics would allow to force the opening or propose a greater focus, this does not seem to be the will of the photographers who have estimated a certain preference of neutral image -not open or closed- of the square taken from its southern angle that hardly has images of itself.



Figure 2: Study of the positions and opening angles of the photographs taken for each postcard.

Flashes

Starting from the affirmation that photography is nothing more than the capture of light, this study has also wanted to incorporate this concept as an analytical method. A first entry shows something that may seem obvious: this public space has predominantly dark and sunny façades. In this sense, the Town Hall is the best oriented building relegating those of the opposite angle, always in shadow, to the complex effect of the backlight. Thus, it is not surprising that most of the images have been made from this southern corner. Only the detailed ones have other backgrounds than the Town Hall main façade. When this happens, the Casa Navàs prevails although the photographer must master the rear-lit. In turn, surely the most interesting images are those that aim to take advantage of the porches that, used as a framing of the Mercadal square, reveal their condition of transitional spaces.

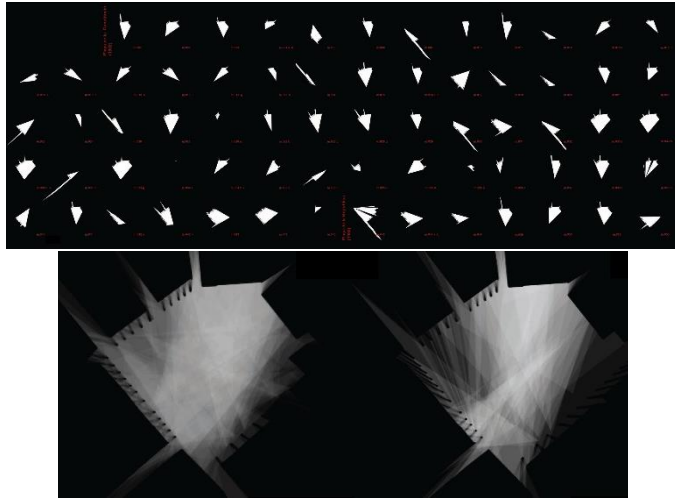


Figure 3: Study of the different visual field openings of each postcard.

In total, for this type of analysis, the same images from the previous section, arranged chronologically in two parts, have been used as a basis. The first part contains 68 flashes and includes from the first postcard until 1938, the moment of the bombing. The second one, despite assuming a longer period, contains only has 42 images. As a result, we obtain two apparent similar cartographies but with substantial nuances. The repeated look, turned light, shows the clear difference between both sides of the square. The one of 1902-1938 shows a

balance of light-images between the Town Hall, the Casa Navàs and the other buildings. In contrast, the one made with the images after 1939 shows a clear imbalance in favour of the Town Hall. Those of the Casa Navàs, scarce, always avoid the mutilated corner.

MANIPULATIONS

This is a generic title that, through cartographies, infographics and pictograms, seeks to obtain urban knowledge through the manipulation of the image, experimenting with its capacity for both spatial and temporal relationships. In this way, Horizons draws volumes and compares each image in relation to its horizon line and perspective vanishing points. Shadows, however, obtains a virtual image of the square redrawing the immaterial figure of the shade projection of its buildings. Memory, on the other hand, fixes its attention on the different names that the postcard makes explicit to establish their own toponymy. Finally, Overlays, proposes the degree of permanence and transformation from the repeated image overlapping.

Horizons

This is a subtle work that has been constructed with 71 images chosen according to their narrative condition of the shape and complexity of the square. For each image, the general lines that determine the main volumes have been drawn with dotted lines. In turn, the verticals ones are accentuated by the intensity of the line value. The purpose is to recognize the Mercadal as a set of fragments and, on them, to determine the horizon of the image. Two cartographies have been made. In the first one, it is observed that most of the images are general and contain enough information to establish their horizons with some ease. This condition gradually disappears in the evolution of the image that centres its interest in details or festive moments.

In the second cartography, all the previous drawings are superimposed, establishing a sum of volumetric lines and horizons. As a result, an eloquent portray that, despite avoiding all rigid ordinance or a unitary project, confirms a certain harmony in the heights of the square and allows to observe the photographer's predilection for some perspectives. The most repeated point of view is fixed in the Doctor Fortuny street. In turn, this cartography reveals that the horizons are concentrated on certain levels being lower in the Town Hall pictures than in the Casa Navàs' ones. In the first case, the image is intended to explain the value of the door, always open while, in the second, the elements of greater ornamental value such as the balcony, the tower or

the tribune place the photographer's interest in the high planes of the façade.

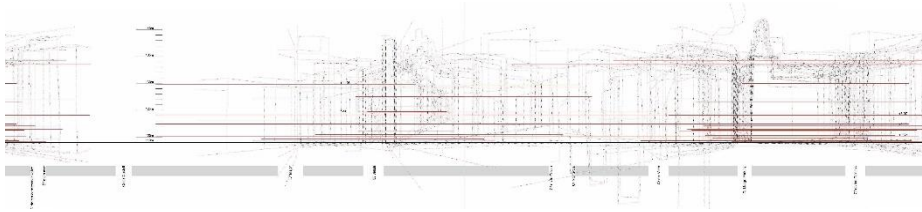


Figure 4: Study of the different visual horizons of each postcard and general overlapping result.

Shadows

This graphic exercise is constructed from the shadows that, as inevitable as clearly perceptible, project the buildings that are behind the tripod on the square plane. Through these, the absent buildings become apparent and draw, by this, a potentially complete image of the Mercadal square. Here, the sample hovers only to fourteen copies that reached the imposed conditions of perceptive clarity. However, the sum of them manages to reveal the shape and properties of the square and confirms the Casa Navàs as its main and most photogenic element.

Likewise, the perfect, flat, and continuous pavement proves capable of reflecting the dark façades, resulting in an inverted but unmistakable Mercadal, hard as stone and simultaneously transparent. As if it were a pond. In the same way that before, the repeated image of the portals signifies and gives value to the interstice, that particular space between light and shadow. Finally, the complete cartography shows how the Town Hall building, always in the sunny part, as if it were a vampire, lacks shadow.

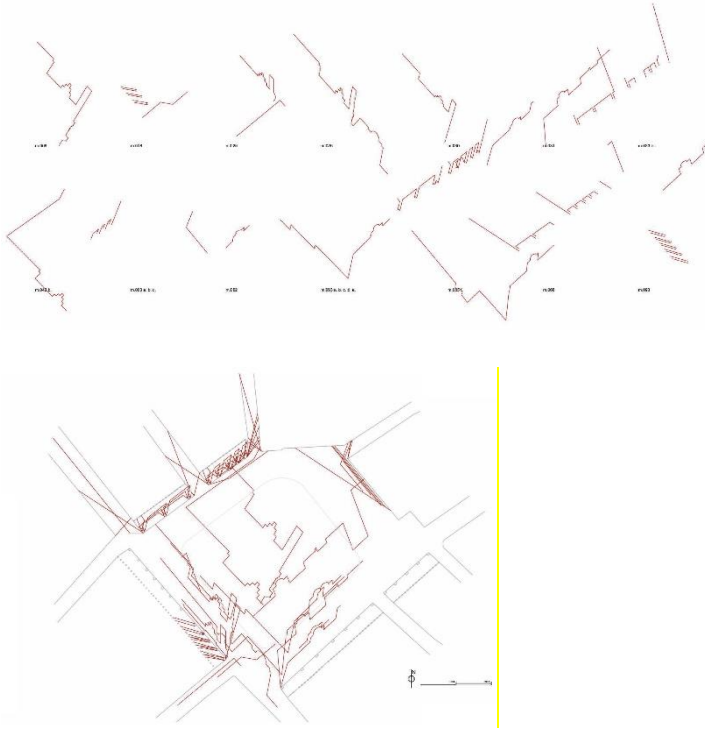


Figure 5: Study of the different shadows of each postcard and overlap of the set.

Memory

This section proposes a verification of the referential value of the square through the identity conferred by the sequence of names of the activities contained, throughout history, in the Mercadal. It is an artificial toponymy, linked to the desire to present each of its pieces from the commercial name used as a claim. In this way, the common name specifies the use while the proper name identifies the owner. In order to do this, the collection of postcards-images has been explored to find the captured names in the form of a poster, a bandolier, anywhere on the façade, hanging on balconies, stamping awnings, on shop windows or lintels of doors. Once gathered, those names have been grouped under the four different ages that named differently the square: Constitució, República, España, and Mercadal.

For this, a sample of 109 images has been used. In the first cartography, announcements are sorted and quantified, arranged in columns. The oldest supports the following. Simultaneously, the name is transcribed, and a color is associated to each age being the most recent the clearest. The size of the letter is related to the size of the advertisement and the frequency with which it appears. The proper names have been transcribed in capital letters, the commons, in lowercase.

In turn, with this material has been built the toponymy tree of the memory of the square, split into two halves. On the left, the names are arranged in chronological order. On the right, the sum of the four periods in black and white is repeated resulting, by this, the onomastics of the square modulated both by the will of the commerce to be showed and by the implicit chance to be captured in the series of postcards collected.

Finally, advertisements have been turned into luminous images on a night background to verify that, by deconstructing and reconstructing Mercadal square in the manner of Piccadilly or Las Vegas (Venturi et al., 1977), can be identified by their names. The subsequent frieze is not homogeneous. The names accumulate, reiterating the value of some houses. But others, such as the Town Hall that surely maintained slogans, due to their ephemeral condition, did not leave any mark on the postcards. The overall look emanates that the names identify, differentiate, point out, discriminate and, reunited, explain and reconstruct the memory of the square.

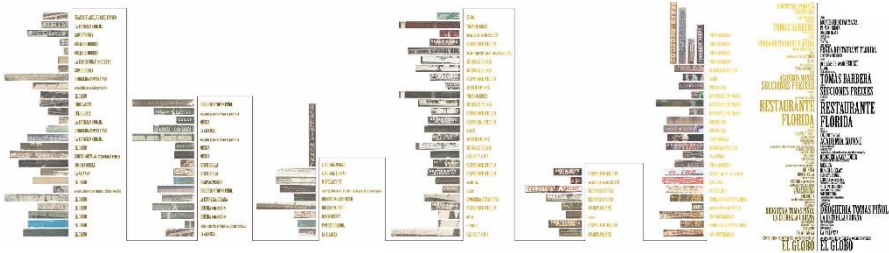




Figure 6: study of the different businesses that have been part of the historic urban landscape represented on the postcards of the Mercadal Square.

Overlays

This last graphic exercise has focused on the study of a single focal point, the Town Hall, in order to determine the degree of permanence of the place and its intrinsic correlation between the identity of the space and the architectural object that confers it. For this, two series of moments have been determined. The first one groups the images prior to the reform. Most are still with the original Renaissance palace or in works. The second moment presents the modified building and its current image. One series has fourteen images and the other, seven. There are, in turn, three of the building under construction that could be shared by both categories. Although the sample could seem scarce, the set of overlaid images is enough to reveal an image that superimposes the static and dynamic conditions of the place.

Its execution has been based on scaling the images and fixing the points of view to assimilate them. In statistical terms it would be normalizing the images of the sample. To do this, double reference has been taken combining the linear dimension (vertical directive) of the

edge between the Town Hall and Doctor Fortuny Street and the City Hall door as the centre of coordinates due to its permanence condition.

The result is not a series of images like those of C. Monet painting 31 times the cathedral of Rouen but a single and latent image which refuses to be revealed as such. Their thin superimposed layers, closer to the frames of a film, manage to condense time as suggested by the Swiss photographer C. Vionnet's photo opportunities work (2011) that uses the same mechanism of superimposing images of known monuments found on the internet -in bulk- that, as J. Fontcuberta (2011) says, her images explain "(...) the rod of the hyper-synchronized imagination of the tourist". The effect achieved here seems to be the same: the vibrant monument, almost in motion, although it raises nuances. The overlays of the Mercadal postcards want to recognize the square, its activity and its transformations, perceptible even in the most iconic buildings, and, in turn, show the properties of any urban space: continuity and change.

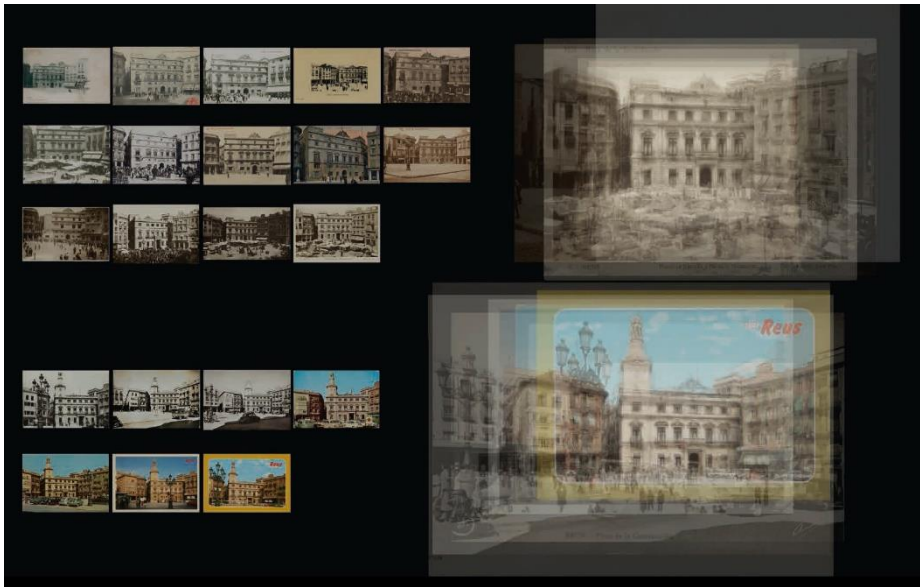


Figure 7: Overlays of the different postcards representing Mercadal Square through history.

CONCLUSION

Today, the city of Reus continues to edit postcards. Some of them are from the Mercadal and show the square as a party, always keeping

the Casa Navás or the Town Hall as a background and confirming this public realm as a place of urban value and civic and popular reference. The sequence of these new images and postcards, added to the partial conclusions obtained through each presented analytical cartography, reveals, to our understanding, the narrative capacity of the postcard, in its descriptive vocation of an urban set or an architectural detail, to be considered as a document and vehicle of urban knowledge in both the academic and social dimension.

Finally, in order to strengthen this argument, two possible new lines of research are currently being worked on. The so-called Blow-ups (Antonioni, 1966) proposes to deconstruct the pieces of the image to reconstruct, in a fragmentary way, a new image that confirms the square archetypes. The other one, entitled Post-postcards, reflects on the current virtual format of the old postcard by exploring the capacity of individually uploaded photographs in environments such as social networks to build and consolidate a new urban imaginary. However, these are subjects for other papers to come.

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DIGITAL TECHNOLOGIES IN ARCHITECTURE AND URBAN DESIGN

MAPPING THE WALKABILITY OF INFANTS, TODDLERS, CAREGIVERS, AS AN INDICATOR FOR THE PERFORMANCE OF URBAN SPACES: THE ITC-FRIENDLY ROUTE

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ABSTRACT

In this paper, we frame the walkability of Infants, Toddlers, and Caregivers (ITCs) as an indicator for the quality of urban spaces. We aim to visualize walkability through a geo-referenced platform. It introduces a set of indicators aimed at ITC, which serve to interpret the vastness sea of information (Big Data). In order to have a clearer lens, the indicators are interpreted through their relationship with walkability. We define walkability for ITCs through five categories (air quality, noise, shading, lighting, obstacles).

The platform is visualized through heat maps for the five categories, and a map of the ITC-friendly route. We acknowledge that data needs to be backfilled by recurrent surveys with the citizens. We propose that the platform can eventually encourage participatory approach and facilitate urban decision making.

KEYWORDS: Data package, GIS, ITCs, Performance Indicator, Walkability.

INTRODUCTION

This study aims to provide the methodology for analyzing and visualizing the experience of walkability for Infants, Toddlers, and Caregivers (ITCs). The analysis is based on a data package proposed by a local NGO. The target group for the indicators are children aged 0-5, an age when they are most vulnerable, therefore the built environment has long lasting impressions.

In the age of the 4th Industrial Revolution, data is the most relevant currency. According to a report for World Economic Forum, 2013, the volume of digital data in the internet was 4.4 zettabytes (4.4 trillion gigabytes). By 2020, the internet will contain more than 44 zettabytes (Robb, 2015). In 2011, the data of the construction industry accounted for 51 petabytes (51 million gigabytes) of the whole volume (McKinsey Global Institute, 2011). The abundance of data allows for a detailed look on commuting patterns: this is the case of Baidu, a chinese search engine that used their “Big Data Lab” to map commuting patterns of over seven hundred million users, to establish drastically underpopulated cities, known otherwise as “Ghost Cities”, the aftermath of drastic urban migration in China (Stott, 2015). They defined the indicator of populated urban areas, building on an existing definition from the Chinese Ministry of Housing and Urban-Rural Development, as 10'000 residents per square kilometer. The Baidu team factored seasonal influences, filtering out cities that appeared empty for most of the time, but are major tourist destinations.

It is evident that this volume of digital data can only be managed and translated into something legible, if it's funneled through the filters of specific indicators. Indicators help describe a wholesome context. An algorithm cannot run without specified variables and a set course of action. Similarly, any analysis of the built environment isn't reliable without a specific set of indicators.

This is the same approach of Urban95: funneling the interventions of the built environment through the lenses of a specific audience: the Infants, Toddlers, and Caregivers (ITCs) (Bernard van Leer, 2019). Urban95 is an initiative of Bernard van Leer foundation that creates a finer lens in the context of decision making in urban planning: “If you could experience a city from 95cm — the height of a 3-year old — what would you change?” The project is a data-driven project, which aims to improve the urban environment in the cities, to comply to the needs of children 0-5 years old.

THE IMPORTANCE OF EARLY CHILDHOOD DEVELOPMENT

Why infants and toddlers specifically? During the first 1000 days of life, human brains are highly sensitive to external experiences and reactive to environmental changes (Cusick & Georgieff, 2016). Early Childhood Development, a relatively new branch of brain development, is still struggling to answer the question: How much does the environment affect a child's well-being (UNICEF, 2019)? A child's brain grows most rapidly during this critical time-period, and the efficacy of this growth determines lifelong physical and cognitive capacities for language skills, learning capabilities, mobility, and emotional regulation.

Supportive relationships and environmental conditions help infants and toddlers build strong brain architecture and resilience to stressful situations, while pervasive negative experiences (e.g., chronic abuse, neglect, malnutrition, stress) prevents strong brain architecture from ever taking hold. Ensuring that a baby's physical environment isn't harming her is crucial for establishing lifelong wellness.

If a city can provide qualitative urban spaces that shelter the infants and toddlers during the first 1000 days, it is creating healthy citizens that support a healthy society.

Data Package for ITCs

How can you quantify urban spaces? What is a qualitative park? "Qendra Marrëdhënie", an urban consultancy NGO based in Tirana, has proposed a data package to evaluate the quality of urban spaces, monitoring urban features of the city (built environment, planning, and maintenance, to name a few) that affect ITCs, and have a significant contribution in early childhood development.

From total volume of motorized traffic, monitoring of air and noise quality indicators, to the presence of street attractions and frequency of maintenance of parks, the indicators have benchmark values for whether a neighborhood is equipped for the walkability needs of ITCs.

In the vast ocean of information surrounding us, the data package offers indicators that evaluate the physical features of urban spaces, and consequently the urban experience, and how ITC friendly it is.

Table 1: Indicator layout, and benchmarking values for noise levels in the ITC neighborhood

5.1 Percentage of streets with decibel levels above 55 dB		
<p>Definition</p> <p>Number of streets with decibel levels above standard 55 dB as of a percentage of total number of streets inside the ITC neighborhood.</p>	<p>Rationale</p> <p>ITCs are very sensitive to noise. WHO has set the adequate noise limit at 55 dB during the day and 45 dB during the night. Evidence shows that higher levels of noise can induce emotional distress at infants and toddlers. Neighborhood streets must provide protection from noise and the necessary intimacy from traffic.</p>	
Benchmark Value		
Thriving	Striving	Surviving
<p>There is less than 5 percent of streets with decibel levels above 55 dB.</p>	<p>There is less than 15 percent of streets with decibel levels above 55 dB.</p>	<p>There is less than 25 percent of streets with decibel levels above 55 dB.</p>

The Platform for the ITC-Friendly Route

We propose the creation of an urban information platform, with the information gathered from the data package, that calculates the most ITC-friendly route to get from point A to point B. Better than a navigation platform, it will equip the users with the knowledge of the route that offers the more qualitative walking experience, exempt of pollution and other environmental threats for ITCs. There is an existing repertoire of walkability assessment method: estimations using data from GIS (Frank, Schmidt, Sallis, Chapman, & Saelens, 2005), Google-based Walkscore and citizen surveys such as NEWS (Saelens, Sallis, Black, & Chen, 2003), and systematic pedestrian and cycling environmental scan (SPACES) (Pikora, et al., 2006). Aschwanden et al, 2012, note the nearsightedness of GIS usage nowadays: GIS is still used as a data management and visualization tool, instead of an information platform, because there are missing methodologies set in

place, which would interpret the implicit meaning of data (Aschwanden, 2012). On a similar note, Pak & Verbeke, 2015, stress the importance of creating a finer lens through which the indicators can be interpreted (Pak & Verbeke, 2015). Moreover, the data needs to be constantly backfilled with learning from the experience of local citizens. In the case of the platform, the data from the indicators need to be bolstered by constant feedback from the citizens. Otherwise, the validity of data can be questioned.

The platform maps the route that ensures the best possible walking experience of an ITC unit, based on five categories: air quality, noise quality, shading, lighting, obstacles. It calculates the possible outcomes, based on the indicators from the data package, and produces a single outcome — a route on a map — and grades for the five categories.

Walkability

The urban platform we propose tackles walkability. Jane Jacobs, the mother of urban planning, was one of the first advocates of street life and walkability. (Jacobs, 1961) Similarly, Gehl, 2010, recognizes the value of walkability in the quality of an urban space, and fervently urges planners and architects to shift their focus towards the human dimension and pedestrianization (Gehl, 2010). Gehl notes that the dominantly modernist approaches shifted the focus away from pedestrians, and lost touch of the city space as a meeting space (Gehl, 2010). The challenge that naturally arises is: how do you visualize the ITC-friendly route?

We aim to make walkability informative and transparent: we provide not only a route, but also the rationale for picking that specific route. We break down walkability in five categories: air quality, noise quality, shading, lighting and obstacles.

Air Quality

The most serious threat to a newborn is air pollution; a toddler's mouth is on the same level as the exhaustion pipes of a vehicle. ITCs are unwillingly exposed to air and noise pollution: they don't register that the exhaust fumes are bad for them, and they don't know they should hold their breath. Furthermore, early life exposure to air pollution makes children prone to ADHD (attention deficit and hyperactivity disorder) (Myhre, et al., 2018). The ITC friendly route has low levels of air pollution. The data is visualized after the model of World Air Quality

Index, a website that offers live data on air quality monitoring (World Air Quality Index, 2019). The indicators from the data package of the NGO will retrieve the data from “Green lungs for our cities”, a platform by Co-PLAN (Co-PLAN, 2019). Co-Plan currently has air quality monitoring devices placed in key intersections of Tirana. Furthermore, the monitoring process is set in motion: we need to tap in the existing data source, not create a new one from scratch.

Noise Quality

High levels of noise are linked to auditory loss and elevated levels of stress (Gupta, Jain, & Gupta, 2018). Naturally, the ITC friendly route has noise buffers, which propagate noise pollution. On Average, Tirana’s daytime noise level is 70 dB, while in the night it measures 55 dB (Pojani, 2012). These values have been monitored from the Albanian Institute of Public Health, which has 15 monitoring locations in Tirana (Pojani, 2012). We plan to use the data gathered from the Institute of Public Health, filter them through the data package benchmarking values, and offer the resulting information to the users.

Shading

In the hot days of summer, it is almost impossible to walk in the city of Tirana during the day. The presence and trees and shading devices is an important element for a city with a rather hot, humid climate. There are two ways to keep track of the shading elements in the city: desk mapping, or on-site visits. The Municipality has recently set up a department that analyzes GIS data. We plan to ingrain them in the process. The methodology we provide is: primarily, desk mapping on GIS, based on the most recent orthophoto. The following step is on-site confirmation: we propose to the department to organize visits at least once in every three months. These expeditions provide information on the details and elements so small in scale, they can’t be seen in the orthophoto.

Lighting

It is not safe for toddlers and their caregivers to walk in a path that is not adequately lit. It is unsafe, an open invite to robbers, muggers and other urban life offenders. The GIS department of the Municipality can track the existing streetlights (this information exists, as the city is

currently switching the streetlights to LED) and keep track of the additions and the few removals of the streetlights.

Physical obstacles

Curbs are not an easy feat for toddlers: the 15 cm change is a small step for adults and children, but for toddlers, it's a giant leap. Caregivers with strollers have a hard time pushing the strollers up and down, when there are no ramps. All obstacles in the built environment should be a smooth transition, facilitated by ramps. Jan Gehl, in cooperation with Bernard van Leer foundation, produced a survey "Public Space Public Life" (PSPL), which measures the quality of an urban space, to accommodate and facilitate the needs of ITCs (Bernard van Leer, Gehl, Urban95, 2018). We plan for a trained group (volunteers, or students) to have expeditions where they provide information on the quality of urban spaces through the PSPL surveys. These expeditions ought to be biannual, or at least three times a year.

Visualization of Data

All the information gathered will be visualized and geo-located in GIS. The platform has live city-level information on the five categories. The information is shown in heat maps (Figure 1), because they provide a dynamic visualization of three-dimensional data (two dimensions are Cartesian coordinates, while the third dimension is the respective category information). The product is a map showing the best route. The other categories are visualized in a bar, with a grade from 0-5 (0 being the lowest, 5 being the highest). Because of the different nature of the categories, it is futile to have an accumulated value with the average of all the categories. The platform can be accessed in a computer or a phone.



Figure 1: Tirana noise map, 2011, visualized in a heat map (The Municipality of Tirana; Stefano Boeri architetti; UNLAB, 2017)

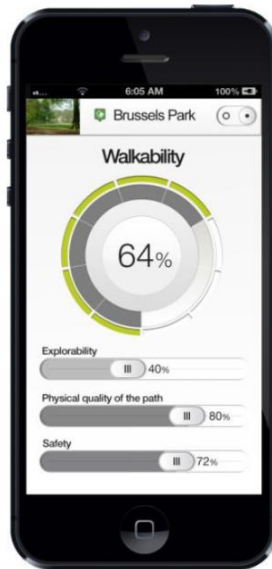


Figure 2: Conceptual interface proposed by Pak & Verbeke, 2015

DISCUSSION

The platform is based on the indicators from the ITC data package. However, information from the experience of the citizens are the backbone of data. Pak & Verbeke, 2015, stress the importance of the testimony of the user’s experience. Their proposed methodologies are based on Lynch’s interpretation of public spaces, and citizen involvement in walkability evaluation (Pak & Verbeke, 2015). In their case, the proposed methodologies justify the complex walkability indicators (such as explorability). We make the case that the five categories are quantifiable, and straitforward, i.e.: the data gathered from the indicators leaves almost no room for interpretation. Noise pollution, for instance, is graded based on the benchmarking values set for the indicator of noise levels in the street. The value cannot be rebutted, as its basis is entirely scientific. However, the user surveys offer substantial information that would be otherwise un-quantifiable. The user survey information serves as the backbone, and audits the validity of the ITC friendly route, only if it is periodically updated.

CONCLUSION

In conclusion, we support and motivate the creation of a platform that contributes on the phenomenon of “a safe city for all”. The platform

offers live information which would be instrumental in the amelioration of the quality of ITC life.

For further research, one should keep in mind the potential the platform has as an urban planning tool encompassing, but not limited to, distribution of public spaces, parks and educational facilities, traffic planning, and building an online catalogue which will help city planners and implementers deal with any urban infrastructure “conundrum” (Schmidt-Beltz, Vos, Coulon, & GMD, 2012). The factors which would be taken into consideration, closely correlated to the well-being of ITCs, will be air quality, noise, lighting quality, paving, parks and schools or kindergartens. We propose that on the later stages, the platform can be used to encourage participatory design, and to engage people in the process of urban decision making.

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This book is about to provide a multidisciplinary context for a general debate about the forthcoming approaches in architectural and urban designing for the human's Next Places/Next Spaces.

The continuous concentration of the world population in the urban areas requires more and more spaces and places, resources and energies, modalities of mobility and transport, social inclusion and integrated economies. The past general trend in urbanization has produced or helped many environmental challenges in both local and global scale: such as climate changes, social marginalization, advancing in land consumption, growing in demand for energies, loss of jobs, and so on. These have become the major challenges for the 21st century and some of the greatest problems facing humanity in the close future but starting from today. The book provides a useful tool for researchers, students and enterprises, to keep up with current developments in architectural and urban designing, in exchanging next ideas and next "utopias" and in showing good experiences and best practices. This book may definitively represent a reading in which, through a collection of international works, scholars can reflect about how designing is evolving in the arena of worldwide practices and "experiments" aimed to a better quality of life.

