

city as organism

new visions for urban life

22nd ISUF International Conference | 22-26 september 2015 Rome Italy

edited by
Giuseppe Strappa
Anna Rita Donatella Amato
Antonio Camporeale

STORIA URBANISTICA

DI ROMA

ALE TESSUTO URBANO

ATI • SERGIO BOLLATI • GUIDO MARINUCCI

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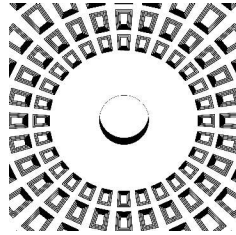
Urban Form Reading and Design
Urban Morphology Theories and Methods
New Researchers' Forum
Local Networks Forum

U+D edition

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2

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Urban Form and Theories

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Geographies of the Mediterranean city: the meaning of urban forms

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Keywords: geography, urban form, urban morphology, Mediterranean medina, Ottoman city

Abstract

The relationships between the Ottoman Empire and Venice, the Adriatic and Central Europe strongly influenced the social and urban order of a city model that paid tribute to Asia and the West but is also far from the principles of the eastern Mediterranean city and from those of the walled European city (whether Greek or Arab).

The differences are formal and structural, even though the district (mahalle in the case of the Ottoman city; khitat in North Africa) constitutes the foundational unit of the urban fabric, both in the open Ottoman model and in the closed, North African for instance, one (consider the Tunisian cities of Al-Kairawan and Nabeul). First and foremost, unlike the Mediterranean medinas and European walled cities, the Ottoman city is an open city, not enclosed by walls (unless they date from an earlier period), therefore, in a relationship of continuity with the surrounding countryside, the expression of an urban society that "appropriates" the rural world: this is why the architecture of the city is, fundamentally, a landscape architecture. The Ottoman settlements extend into the countryside, going beyond the traditional contrast between architecture and nature specific to European and Arab-Islamic walled cities. The former sites are usually characterised by special topographical and landscape conditions, which document how the origin of Ottoman settlements is to be sought in the link with the architecture of the soil rather than with a geometric plane: it is the site that determines the choice of settlement and type.

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Introduction

Through the description of three paradigms, this paper focuses on the relationship between urban morphology and physical geography. It could be a possible tool for the project (not only for the analysis), starting from a key consideration: *territory* is, essentially, *architecture*. It cannot be imposed as a will to form a priori, since the singularity of the place determines the order of the architecture, and not the contrary, even when there is a pre-established formal model. The city describes itself as the place to live in, the "territorial type": urban facts correspond with territorial facts in a scale process. (Ravagnati, 76)

Strabo says that the geographer must have full knowledge of the design to represent sizes, shapes and distances of places, as well as the architect has to know all these things in order to allocate cities and buildings. (Desideri, 1792)

The geomorphological, geographic and climatic characteristics of a site determine "urban landscapes" and "settlement systems" within a morphological continuity with the physical pre-existences, the geographical context, the topographic peculiarities and the morphological structure of the territories. The settlement is organized following precise geographical cornerstones telling the story of a territory and a civilization: settlements of ridge, at the confluence of two compluvia (headland), along the hillside, in the valley and the coast. Moreover, paths marking ridges, anticlines or isthmuses; tracks influenced by interposed hydrographic structures; centuriations; territorial infrastructures such as canals, harbours, bridges and aqueducts which become urban architectures; enclosures that emphasize meanders and river crossings; foundations anchored to the subsoil hydraulic system; architecture merged with the site topography. The territorial model, against any ancient urban-centric vision, becomes the starting point for the city project. In the Mediterranean landscape, trading routes and stopping areas are the elements causing the urban form. The city is part of a system in which the overland routes and waterways are the main framework. (Motta, 130) Starting from his consideration Caniggia develops his studies, both in a territorial and in a urban scale. He says : «the first use of a territory and the first awareness the man takes on it, is the possibility of walking through it, directly related to the orohydrographic structure». (Caniggia, 187-207)

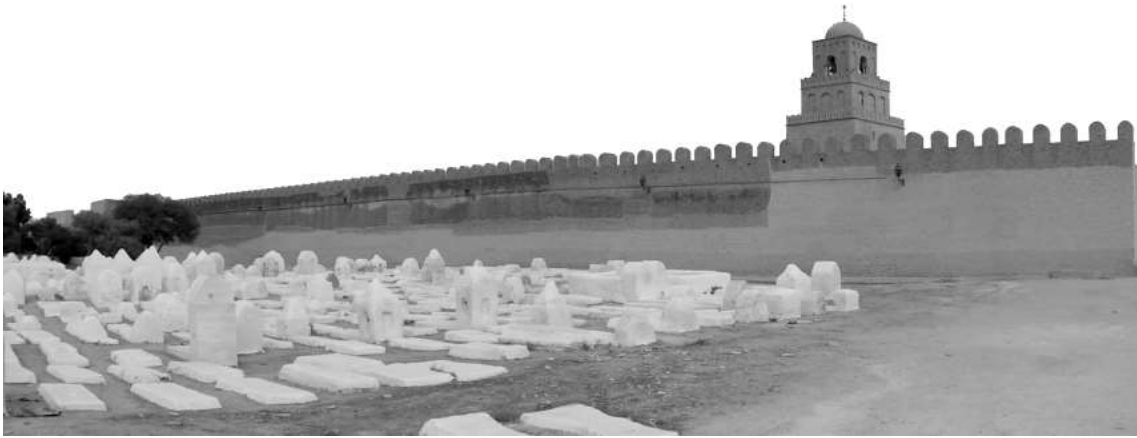
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Vincenzo Scamozzi, in his treatise, says that the geography of places offers a reference model for the urban form; the architectural design is, therefore, closely linked to the operations of representation and description of the place geography. In fact, according to him, the architect must perform two founding actions for the city project: drawing the enclosure and put it on plan. Scamozzi describes an analogical relationship between cities and island: the latter is used in its broadly speaking, as a metaphor expressing the condition of "isolation" and "clipping" of a land section. In fact, the design of the enclosure "isolates" the city from its territory (the walled city is emblematic). It has a formal and structural link with the context: a settlement on a top of a mountain or a hill living in a state of "isolation" like a city of a plain landlocked in a confluence of rivers or canals or, literally said, like an island city. Therefore, for Scamozzi, the first effort to be done is to recognize the "insular shape" of the site which, in turn, has to adapt to the rules of the geometric and architectural representation. Scamozzi's city has a geographic foundation, just like that of Filarete. In his treatise, the latter also describes the architecture as a nature representation. So, the territory forms become the key instrument of urban design, the compositional theme in defining the urban morphology: by overcoming the naturalistic and approach imitative, the city becomes rational transfiguration, sometimes geometric, also leaning to a regular grid construction, able to adapt, from time to time, to the peculiar site conditions. So, even if there is a rigid formal order imposed from the outside, the geographic and topographic characteristics always give a mark linking the city, as the singular building, to the specificity of the site. (Marfí Aris, 88)

The city and the sea: the city as "island"

«The best way to experience the city is to walk about quite aimlessly. Once the first sense of estrangement is over, the mind finds its surcease in the discovery of the dream-city Alexandria which underpins, underlays the rather commonplace little Mediterranean

Figure 1. From top to bottom. Views of Kairouan, Alexandria of Egypt, Istanbul. [Turchiarulo M., 2005, 2007, 2011]



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seaport which it seems, to the uninitiated, to be. It plays even today a somewhat unwilling role as a second capital for Egypt, the only relief offered a resident of Cairo that burning-glass of a city wedged between its deserts. It opens upon a dreaming sea and its Homeric waves are rolled and unrolled by the fresh breezes from Rhodes and the Aegean. Going ashore in Alexandria is like walking the plank for instantly you feel, not only the plangently Greek city rising before you, but its backcloth of desert stretching away into the heart of Africa. It is a place for dramatic partings, irrevocable decisions, last thoughts; everyone feels pushed to the extreme, to the end of his bent.» (Foster, xii)

The seaside city is a linear city which has got a potentially infinite growth. It is an "island-city", a space of passage running along the transit routes where people and goods travel; it can rule and control the geographical space thanks to the port and road infrastructures representing its essence. (Ravagnati, 25)

Since the Hellenistic period geography and geometry have been represented the city of Alexandria, in the west of the delta Nile, on a strip of sandy land which separates the Mediterranean sea from the Mareotis lake. When Strabo speaks about this city (having the form of a Macedonian chlamys, as Pliny said) writes: «It is watered by two seas: the one in the north, that is the Egypt Sea, part of the Mediterranean; the other, in the south, called Mareotis lake or swamp». The southern limit of the ancient city was bordered by a navigable canal from the south-east, from the Nile: then, it crossed the city, towards its western edge, bending sharply to the north, and flows into Kibotos (box), a small gulf within the Eunostos port; the little streets, perpendicular to the sea, were set on the ancient tracks of twelve rivers and, even today, they form the modern city.

Alexandria lives a steady tension between the Euclidean rigor of the Hippodamian by cross-axial system and the natural topography of the soil: the artificial hills, the waterways, the articulated natural, artificial, maritime, lacustrine and fluvial port-system; the complex water supply networks, made of culverts and tanks.

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Sea, rivers, canals and lake are the geographic elements that determine, from the beginning, the *forma urbis* of the main port city of the Mediterranean and that, today, in the almost total absence of open spaces, manages to regain the relationship with the water and rural landscape, only in the periurban areas.

The compact and open urban structure has a potential infinite and linear expansion which is also parallel to the coast line. The city of Alexandria, over the centuries, grows according to a rhizomatic logic. Its urban history, even in its processual development, is manifested in two complementary ways, generating a "catalog of forms": as a horizontal layerings of cities rooted in an archetypal form, the Hellenistic, preserved as mineralized fossil, geological storage of urban sediment; such as *addition* of juxtaposed parts following, in their aggregate, the geometric perfection of the isthmus, transforming an island (Pharos) in a peninsula (known today, as Ras-el-Tin promontory). Thus to the east of the city of foundation laid out to Deinocrates' plan, the Romans added their city; then, in the nineteenth century the European city, whose rotation clearly matches the morphology of the isthmus, was "hooked on" orthogonally to the earlier sixteenth-century Ottoman Turkish city that in the meantime had come to occupy the Ras el Tin peninsula.

The Hellenistic spirit was wedded with the technical and material contributions of the Western cultures brought from Europe by the exiles employed at court by Muhammad Ali, after the industrial revolution. (Turchiarulo, 334-336)

The newly imported building types change the urban fabric morphology to suit a new *modus vivendi*. The Turkish-Ottoman fabric underwent major demolitions to make way for new spaces of social relationship previously unknown in the local context (public squares and boulevards); building lots were reclaimed from the sea to give the city a promenade looking out towards the horizon. The seafront unifies a city of fragments, a city that had been fortified and now opens its gaze to the Mediterranean (Turchiarulo, 117-138), bringing, under the "layer" of European origin, the imprint of the Hellenistic-Roman one.

Like a phoenix, it was reborn from its ashes: the modern city finds its anticipation in the Hellenistic period.

It bears the imprint of the eighteen huge insulae (44 x 88 m), and of its typologies (oikos and peristyle), of the main streets (Canopic and Sema).

In many cases, the structure of the Mediterranean city is consolidated on the "re-use" of archaeological traces left by remote settlements; it is built on the remains of ancient buildings, sedimented materials through a process of continuous layering, juxtapositions and changes suited to the place topography. Probably, it is not sufficient the scientific analysis of its physical reality, made with precise philological rigor, to fully disclose the *soul of the city*, to explain the reasons of its past and recent configuration. This is the case of Alexandria, a cosmopolitan and global city-mosaic whose heterogeneity is the beating heart of its urban development and transformation. *Melting pot of cultures and races, crossroads of destinies and passions*, it reveals its enigmatic and kaleidoscopic soul in its own imaginative dimension. (Martí Aris, 83-86) It is a city that found the etymology of its form in the willing to shape the nature and to impose an order: the architect Deinokrates proposed to Alexander the Great to carve Mount Athos in human form, putting in one hand a city and in the other a lake. (Russo, 241) It is a myth that well symbolizes the meaning, the value and essence of the landscape: the archaic relationship between natural and human-transformation, between nature and artifice. Just as result of this bizarre and utopian project, the Macedonian conqueror decided to entrust the architect with the new city founding plan.

Desert city: the city as "clod"

«Below the Sahel, to the south of Sousse, which is 60 km away, in the middle of a vast plain, desert during most of the year, Kairouan raises its light brick walls, its minarets, its domes. At the edge of the enclosure, the huge cemeteries recall the long centuries of its urban life. This great city, isolated in the middle of the flat region, far from the sea, certainly looks like a nomad's camp.» (Marçais, 180)

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The desert city is a compact city, enclosed in a fence that protects it from a hostile landscape. It is a fixed and resting space (it is not a crossing place as is the city of the sea), living turned in on itself, around its civic and religious institutions.

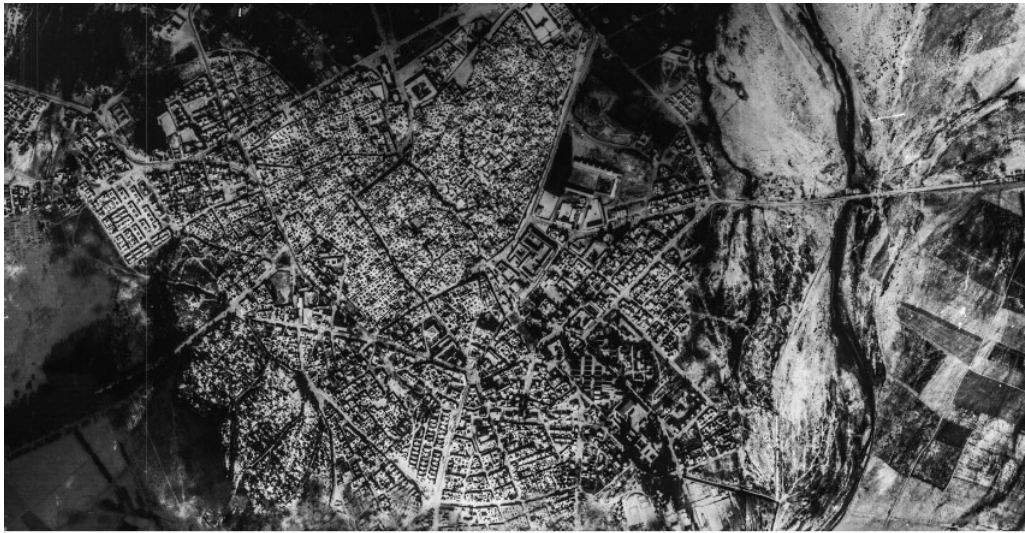
While the European city is based on a "secular" model, the Islamic city is an hermeneutic act: it is called "medina" and contains, in its etymological, structural and formal root the religious dimension: *din*, in Arabic, means "religion". The City of the Prophet, Medina (in Arabic: *al-Madina al-munawwara*, "The city radiating light"), in the *Annals* of the Assyrian era, is remembered as Yathrib (in Aramaic: "justice"). This etymological analysis emphasizes that religious and political ideal bind Islamism to the city and urban life: thus, it is not a religion of nomads wandering in the desert, like the one postulated by an older romantic vision, but a "citizen" religion.

Therefore Islam is an urban fact which is manifested in a precise city model, built around three main points: the mosque (*masjed*), the Koranic school (*madrassa*) and the pious foundations (*waqf*). However, Paolo Cuneo states that «[...] three variables, history, geography, ethnic diversity, and the possibility of endless combinations, offered to Islamic culture, inherently unified, in many ways, closed and equal only to itself, the conditions for an extreme diversification of urban phenomena».

Semerani writes that *everything comes from the East*. Certainly, the history of the European city cannot overlook the influence that Islamic culture has had, from the Middle Ages until the beginning of the modern age, in theoretical and philosophical thought, in modern historical geography.

Just think the work, of Platonic inspiration, *Ideas of the inhabitants of the virtuous city*, by the philosopher Al-Farabi; or, the survey on geographical explorations, *al-Rihla*, by the traveller Ibn Battuta; and yet, the modern scientific studies about urban history, understood as the civilization history, introduced by the philosopher Ibn Khaldun (*Muqaddimah*, Prolegomena). In particular, the latter begins to consider the urban problem, not only in relation to the political and social events, but also in relation to the physical and economic territory, against all sector, intellectual and formalistic simplification. (Guidoni, 193-195)

Figure 2. From top to bottom. Ortho-photos of Kairouan, Alexandria of Egypt, Istanbul and their environs [Turchiarulo M.]



1202

Two rivers, the desert and a caravan route affecting the morphology of Kairouan medina (Turchiarulo, 19-33): the oldest Muslim center in North Africa and the ancient capital of Ifriqiya. It lies between the Mountains Atlas and the Mediterranean Sea. It was founded as a parade ground in the middle of a plain, very fertile at the time of the first Arab conquerors. Its origin first as military camp, then as caravan city is mainly due to its strategic geographical position: even today, an ancient and important road, connecting Tunis to Gabes, crosses the medina in the center line, longitudinally. Along the segment, intercepted inside the walls, two gates (of the eight) are aligned: the Bab Tunis and Bab Jalladine. Two *uidian* (plural of *uadi*, *wad*, *oued*, stream), Zeroud and Marguellil, washing Kairouan in the north and south: over the centuries, their frequent floods have strongly influenced the morphology and the direction of the city development through alternating phases of expansion and strong contraction.

The structure of the new Kairouan, founded by Uqba in 670, recalls models of the Umayyad city. It is a city model which incorporates the Roman system on two axes, the *cardo* and the *decumanus*, intersecting at right angles, with the consequent opening of the four gates. This is the possible original town planning scheme.

Today, it is a closed and compact city, a mosaic articulated in tiles, in "clods", formally and spatially recognizable. The fullness prevails on emptiness. The city has a constant thickness: it is a basement from which only the minarets and mosques domes rise out; a continuous and compact mass, engraved, hierarchically carved from empty spaces: those narrow and branched of the fork streets, innervating the urban fabric; those approximately square of the courts piercing the "plate".

Inside the existing walls, in an eccentric position, the Grand Mosque lies: worship place, once also *Arengario*. In earlier expansion steps, the building position was barycentric compared to the surrounding urban fabric.

While *madrassas* and *zawiyas* often result by a specialization process and private houses recast, mosques appear to be generating urban fabric. It is possible to recognize two different orientations. The most common direction is one that follows the orientation of the Great Mosque: 53° to the southeast. This direction is also found in agricultural partitions, outside the walls. It highlights, to the north-east of the city, near the *uidian*, the probable traces of the Kairouan extension, after reached until its current size. This alignment is due to the shape of the city during Aghlabids period, that is the period of maximum urban expansion. Its extension was higher than today and the city extended to the vicinity of *uidian*.

Probably, alignments with significant corner variations, belong to further spontaneous expansions phases abandoning the prevalent orientation, imposed by the Great Mosque, and following different directions: those of the caravan routes and primary or secondary paths.

The trading system center is the street of the souk, which is the segment of the ancient caravan route, from Bab Tunis to Bab Jalladine. This road is linked to the heart of the medina through covered walkways and separates two districts: the Cherif (Houmet Ech Chourfas), to the west, and the Grand Mosque (Houmet Ejjamaa) neighborhood, to the east.

The urban fabric is made of a network of neighborhoods: they are clearly recognizable in their shape and size, with its own identity and autonomy. Everyone includes inside the residential fabric, its own mosque (*masjid*), a fountain and a hammam: it is bordered outside by streets from which deepen, according to a hierarchical "tree" structure, the *cul de sac*. These are real roads of penetration to the urban fabric, leading into the heart of the "clod" (macro-unit, *khitat*) and, sometimes into the house, whose lot is foundational as the elementary cell. In particular, the *culs de sac* are derived from the original lots of housing units, taking as width the dimension of an elementary cell: an important element of mediation between the public space of the street and the private sphere of the house, organized around the courtyard. The basic unit of settlement is represented by the lot of the courtyard house.

Therefore, the neighborhood looks like a city inside a city, an enclosure inside an enclosure: so, it seems to express the ethnic isolation of different tribes who, with the Hegira, pass from a Bedouins condition, in constant motion through the expansive desert, to a permanent condition: from outside to inside the walls, where the urban organization (through neighborhoods, *khitat*) reflects a social organization based on the distinction in

ethnicity and crafts. The medina is a fence; a large caravanserai in an empty plane, a desert; a milestone in a hostile and boundless landscape.

The city and the slope: the city as “forest”

«No one knew which way to look. We had on one side Scutari and Kadi-Kioi; on the other the Seraglio hill; in front of it Galata, Pera, the Bosphorus. To see everything, it was necessary to turn on themselves; and we were turning, throwing all sides the flaming glances, and laughing and gesturing without speaking, with a pleasure that was suffocating.» (De Amicis, 16-17)

The urban history of the Mediterranean cities, according to Petruccioli, can be traced through three basic steps: the prehistoric world of the ridges, the Roman Empire and the Ottoman one. The mesh of the ridges allows one to grasp the meaning of the oldest form of human settlement in the territory: to move up, for the prehistoric man, means to be able to orient directly with the topography and to control the territory militarily. With territorial grids of the Roman centurions, the political and military control is guaranteed, on the contrary, by a “geometric” control developed from the minimum family unit (*domus*) up to the municipality and *regio*. During the Ottoman rule any systematic and unitary modification of the territory was left apart as well as any regular geometric structure: we act for parties, through the installation of monumental pious foundations (*imaret*), centers where city develops. (Petruccioli, 170-174)

Through the identification of this third paradigm, which uses the metaphor of the forest, we want to describe the character distinguishing all urban fabrics, from the Ottoman era, embedded in the landscapes of the western Balkans and Anatolia, often territorially organized in a high part and a low very close to the coastline. It is a model of an open city, which “flows” following the “rhythm of places” and that finds its *raison d'être* in the relationship of strong interpenetration between built and natural.

1204

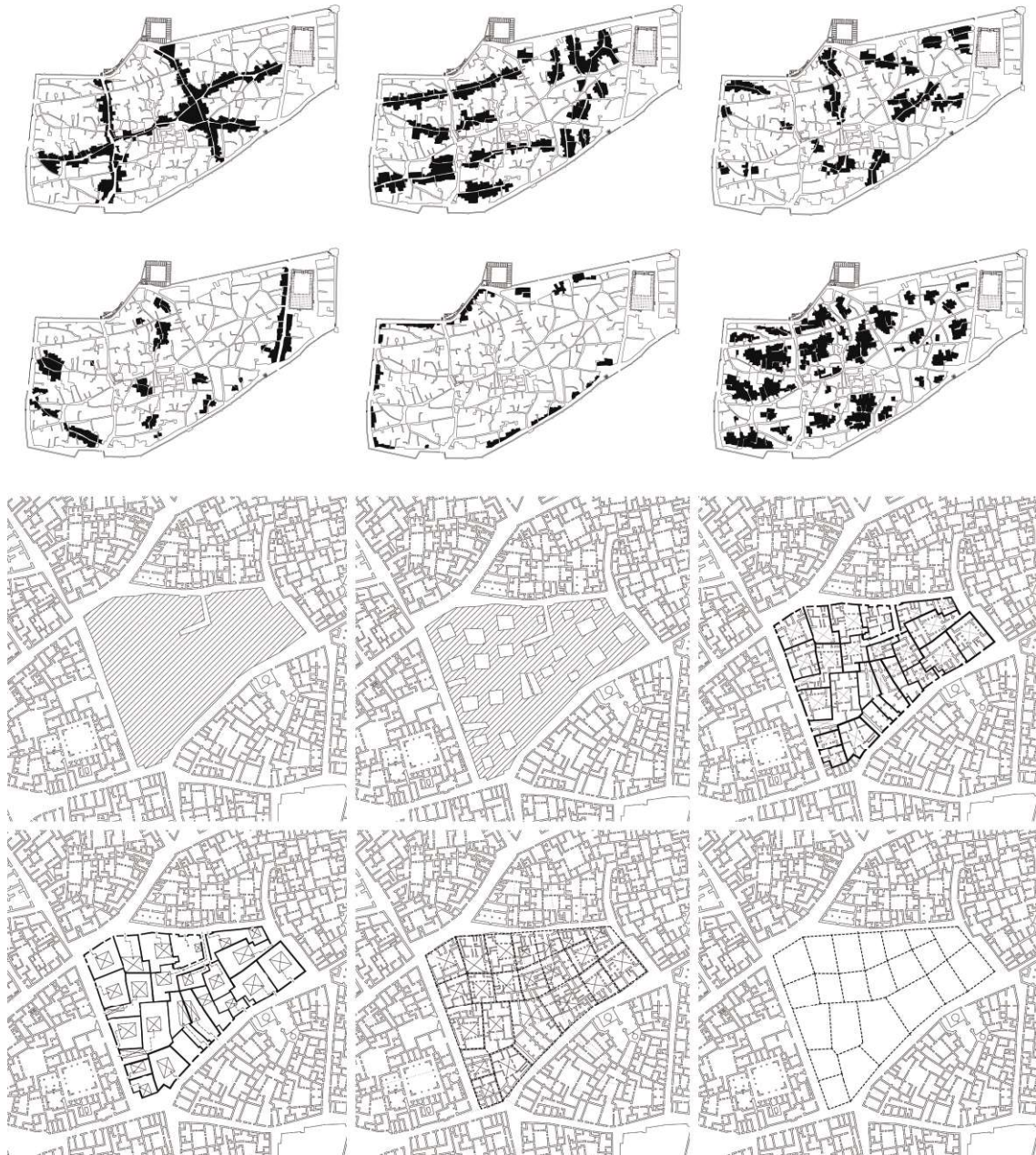
These are cities building their form incorporating nature in their “design”: the Bosphorus, the Golden Horn and the hills are elements perfectly integrated into the urban structure of Istanbul: in this *mosaic of ports, geography* (indeed the geographies!) *causes the history, and the ancient produces the project.*

In general, we can say that the Ottoman city (Turchiarulo, 23-45) is made of individual free elements rooted to the ground and not of compact parts: the sofa house, central and tripartite, is a type that stands isolated in the garden refusing aggregation. Therefore, the Ottoman city is a “punctual city”, built by a sequence of rooms, dotting the cityscape in separate units. They do not build the public space and even identify its perimeter. They do not represent the place, understood as geographical site, but redefine it. The countryside belongs to urban and vice versa. It is a town product of a urban society deeply exploiting the rural world, divided into two distinct parts: the *čaršija*, or public and commercial area, and *mahalle*, or residential neighborhoods.

The residential fabric of this polycentric city, well described by Cerasi, is a fabric in open series and is set on regulatory tracks: the main routes follow the course of contour lines; the secondary link up the jump altitude. Therefore, it is divided into a terraces settlement system, for isotope lines, with a preference for a precise solar thermal orientation and panorama. The principle of settlement of the Ottoman house, based on an aggregation of the rooms in free standing schemes, allows a great flexibility, so if the ground floor is bound by uneven road network and by its relationship with the physical geography of the area, with the rotation and the upper floors projections we can enjoy, however, the best orientation and the best disposition.

The intensive use of the *hortus clausus*, specifically Mediterranean custom, characterized by the filling in of the lot from the edges inward, is substituted by the extensive use of land, specific to the Ottoman model. The plot on the terrace is the foundational unit. The single-family house is built in the walled garden, in direct contact with the public street: the wall builds the house basement. It is developed on an orthogonal axis, through a free arrangement of rooms, from the street to the inside of the plot.

Figure 3. Top. The medina of Kairouan: hierarchy of routes.
 Bottom. The medina of Kairouan: reading of the building structure of the khitat [Turchiarulo M. et al.,
 Laboratory of Degree, a.a. 2003/2004, Supervisor: Prof. Carlo Moccia, Polytechnic University of Bari]



The architecture of the Ottoman city is an “architecture of relationships”. The internal chaotic image is often in contrast with the perception of the city from a distance, from an outside perspective. Spaces and architecture seem to be jumbled up on top of each other, apparently without any conventionally intelligible order, but linked by a virtual network of visual lines and moving relationships. The relationship with the site’s orography makes it possible to understand the underlying logic of the settlement process, which is strictly linked to the character of the place.

As in a forest, in the apparent disorder, everything seems to take place, to regulate itself. (Rosini)

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Conclusions

Prof. Giuseppe Strappa
Conference Chair

Dear Isuf members and Participants to our meeting, the Twenty-Second Isuf Conference is now concluded. I hope it has been an exciting experience for all of us. Let me propose a few brief reflections.

Each Isuf Conference has some specific features depending on the culture of the city where it takes place and through the institutions that hosts it.

I think our Conference has had two peculiar characters.

The first was a particular attention to the historic environment: to the historic territory, city, buildings.

I think this is a very significant field of study for the Urban Morphology.

A field different but complementary to historical studies. The historian is interested in the urban and architectural phenomenon in its singularity and specificity, in its value of documents, in its artistic quality. Many papers have confirmed, in this Conference, as the morphologist studies them, instead, in their transformations, as a process, linking the single phenomenon to the generality of similar phenomena. These are two aspects of the same problem. I think that the number and quality of the papers presented in this field of studies have given a special spirit to our Conference.

A second specific character depends, I believe, on the fact that the Conference was organized in a Faculty of Architecture.

Not by chance, many of the interventions have been interested in design.

We consider vital for architects to use Urban Morphology studies. Reading urban phenomena on a rational basis, the study of forming processes by scientific methods are not just design tools. They can correspond to a choice against the spectacular drift of much contemporary architecture. I believe they can even encourage an innovative way in making architecture: the project as an aesthetic synthesis of processes, not only a result of individual creativity. We all have seen how interesting are the designs of architects who are beginning to pay attention to the issue.

I think it was also noteworthy the session dedicated to the formation of local networks. They will be, I believe, the future of Isuf. The more the different local networks will have their own character and will be rooted in their own culture, the more Isuf will be rich in fruitful contributions, capable of innovating our studies and our researches.

At the conclusion of this conference I would like to thank:

the Isuf Council, for having encouraged that the conference take place in Rome;

all the professors our PhD School and especially Irene Del Monaco, Marco Mareto, Dina Nencini, Paolo Carlotti, Fabrizio Toppetti;

the students of Draco Doctorate, for their enthusiastic help;

I would like in particular to thank the Conference secretary Anna Rita Amato who has played an invaluable role in the organization of our Seminar.

Thanks to all for your participation.

We will meet again next year at the Isuf Conference in Nanjing University.

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