

# Chapter 1

## The Metropolitan Structure for a Set of Metropolitan Landscapes



A. Contin

### 1.1 Theoretical Introduction

#### 1.1.1 *The Metropolitan Region Structure*

A metropolis exists in the scale continuum from the neighbourhood to the nation. It is a specific scale, enabling strong relationships amongst diverse agencies working as an entangled system in both the strategic and physical level. Hence, a metropolis has the potential for ‘leaping the scale’ between the global and the local. The metropolitan spatial patterns are dealing with and determine metropolitan complexity. The acknowledgement of this mutual impact is crucial in defining the spatial quality that, in the end, is experienced at the human scale. In order to take care of today’s fragile territory and promote a space of quality, we need to understand the complex relationship between the physical context and the metropolitan patterns of settlement. Nevertheless, we have to think of the relations between nature and the built space in the entire scale spectrum as the accessible and inhabitable Landscape of the metropolitan public realm.

In order to define the metropolitan approach, it is essential to recognise the paradigm shift from the urban to the metropolitan scale, thus seeing the contemporary metropolis as a “net-city”.

According to D. G. Shane (2005), the net-city is “a multi-centred network system” emerged “to handle the apparently chaotic flows of diverse participants in an increasingly global network. Growth appears to take place at random over the network, with no clear hierarchy or top-down patterning. Relationships can shift and change among actors, resulting in rapid change and instability.”

---

A. Contin (✉)

Department of Architecture and Urban Studies, Politecnico di Milano, Milan, Italy  
e-mail: [antonella.contin@polimi.it](mailto:antonella.contin@polimi.it)

The net-city is essentially a system of cities of different sizes functioning as a whole throughout a network of physical and virtual infrastructures. In this polycentric system, however, we are not only dealing with the nodes and edges of the network. According to authors such as Terry McGee (2009), Edward Soja (2000), Neil Brenner (2014), and many more, we are dealing with a hybrid territory where the urban and the rural define a seamless heterogeneous landscape. This space in-between the network is called “body-space” (Shane, 2005), where the continuity and the connection with the previous system are lost due to metropolitan infrastructure systems. The shift from the paradigm of a polycentric model to the network of the net-city (Shane, 2005) is significant for the contemporary metropolitan city. This causes the need to deal not only with the nodes of the network and the infrastructures that make them accessible, but also with space in-between the networks, which must be re-conceptualised with new meaning, structure, and new image in the metropolitan era.

### ***1.1.2 The Re-Conceptualization of the ‘Space In-Between’: The Green-Grey Infrastructure as the Metropolitan Architecture***

The recognition of “body-space” allowed us to discover new patterns of settlements that are beyond the dichotomy of urban and rural patterns. It opened the whole new possibility of shifting between different scales and time that require new spatial practices, social behaviours, and organisational structures. This change also fostered engagements of new spatial agencies such as private, collective, and public organisations, universities, families in the interactions amongst global and local forces challenging fixed administrative boundaries at different scales and requiring innovative forms of institutional organisation, and planning.

The green-grey infrastructure is the metropolitan form, the architectonics (the structure) of the new metropolitan 1:1 scale map. We practice the concrete metropolitan city map inside a vector (car, train) at the speed-scale; this happens without any prosthesis, at the local scale. Let’s say, therefore, that there is an “urban fact” of the metropolitan scale, as well as a portion that is not the built-city, but cultivated or natural field within the metropolitan city: we call it “agricultural or natural fact”. The metropolitan city with the green-grey metropolitan infrastructure and its networks of medium and small cities are the urban vertebrae of an eco-region.

We analyse the contemporary territories that we define as fragile based on an integrated learning approach that refers to metropolitan complexity. Our goal is to identify the metropolitan dynamics that have generated the fragility of territories, recognise their shortcomings, and finally propose a project based on a metabolic vision (maintenance, improvement, or transformation) of the life cycle of the city, which determines the metropolitan biography (Contin, 2016) over time. The specificity of the current city is a multipolar way of local growth/transformation

involving increasingly large areas based on the effectiveness (performance) of infrastructure networks.

## 1.2 Metropolitan Landscapes

### 1.2.1 *The New Metropolitan Monumental Approach to a Robust Public Civic Image*

A new Metropolitan Landscape, – its structure and imageability-, is therefore needed, and this issue also involves a sensitive reshaping of an already existing environment (Lynch, 1960): natural and built. Nowadays, the exclusive technology approach to Landscape reduces the local value of the characters of a place, because, – according to that vision – they are increasingly connected to supra-local economies. The progressive globalisation of the system of values considers nature and cultures a heritage to make money out of it (Gregotti, 1966). Although the metropolitan dimension, – considering the metropolitan continuity of eco-armatures and their articulation with the grey infrastructures through a Metropolitan Architecture project-, can be the engine for the construction of a new relational non-static identity, that reevaluates the local characters of a place connecting them also to the net of the cities of the world.

Besides, according to Lynch, the manipulation of the world can be sensuous and because of that, can strengthen a robust public image at strategic points. However, we would like to also remember Secchi, who spoke about the modification of the existing territory and cities through a not ordinary, reductive, technic and inarticulate project of the ground (Secchi, 1986). Moreover, Frampton (1983) promoted the interaction between the “wet: landscape place-form and the “dry” rationally assembled product-form-. He also proposed to introduce a visual plan whose final objective is not the physical shaping and reshaping itself but the quality of the image in mind inside the analysis and proposal of Urban Design. According to us, the quality of the image reveals the quality of the dwelling that is the principal aim of the Metropolitan Architecture project. According to Lynch, the human modification must be carried out with an awareness of the interconnectedness and yet the individuality of both: natural resources and personal purposes (Lynch, 1960).

To conclude, according to Lynch, “a large city environment can have a sensuous form” relevant for the mental map production of metropolitan city and its articulated identity. To design the metropolitan form, we have to conceive it as a “complicate pattern, continuous and whole, yet intricate and mobile. It must be plastic, open-ended and receptive to the formation of new imagery. It must invite its viewers to explore the world”.

Unfortunately, “the density and the extent and elaborate technology of the modern metropolis all tend to obscure the underlying topography and the pre-existing natural setting”. Nowadays, it is more and more evident that as the city expands the

significant “natural” factors become the larger, more fundamental ones (Lynch, 1960). The topography is “an important element in reinforcing the strength of urban elements” and “the modern high-speed path is an excellent viewpoint from which to grasp topographic structure at extensive scale”. Lynch started to suggest an intense green and grey infrastructures interaction in 1960.

Due to this, according to McGee, we need to consider two main layers: the metropolitan off-site grid, – that we organise through the Metro-Matrix geometrical model (Ortiz, 2014)-, and the in-site archipelago, – that we take into consideration either to maintain some tremendous common forms or to build “a richness of possible structures and clues” within the environmental materials.

### ***1.2.2 Metropolitan Architecture and Landscape Projects***

Metropolitan Architecture and Landscape Projects work as equipment of technique for structuring and intervening at a big scale: they are a specialisation of the different methodologies related to the form issue at different scales.

Due to the “Bigness” issue (Koolhaas, 1995), – spatial extension and temporal acceleration-, specific equipment or techniques for structuring and intervening at big scale, related to a formal definition, is needed.

Landscape at Bigness scale is a possible material for Architecture too, that receives a new and vast meaning. In the past, Baroque Architecture used the Landscape as a construction material for the Baroque city: nature was a dialectic element concerning the production of buildings; not a mere background.

According to Gregotti (1966), the environmental question not only concerns the most prominent set of problems but slightly different issues.

If this is so, the territory of the architecture discipline becomes more extended, dealing with environmental sets at all scales. An audit of the architectural discipline is mandatory, which will allow the consideration of architecture as a work on the transformation at the territorial scale too.

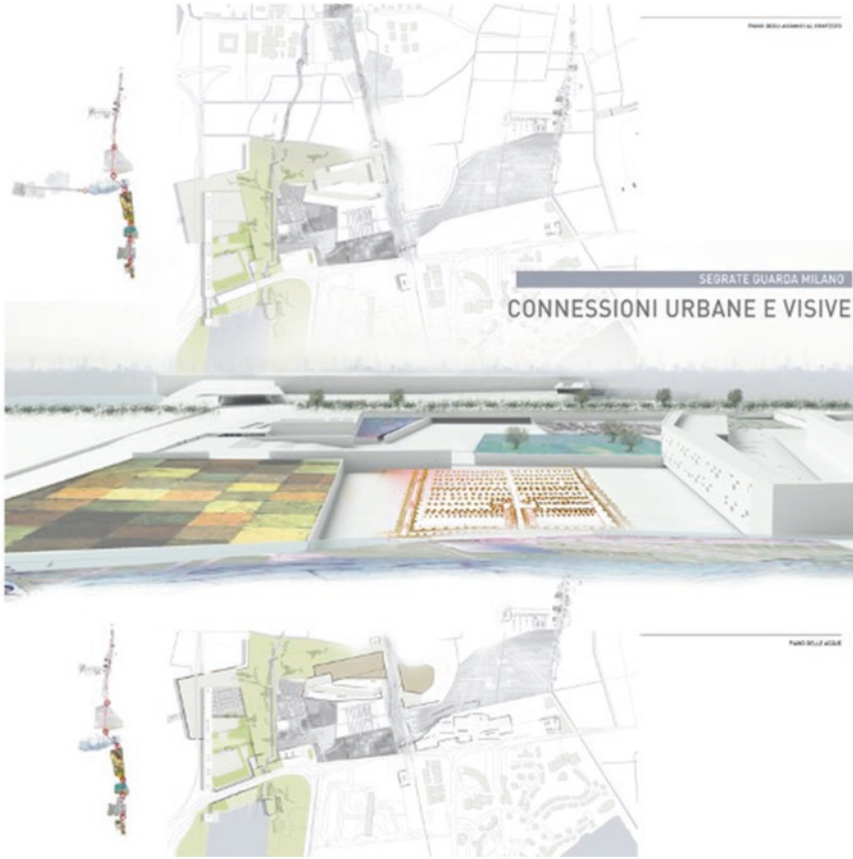
Architecture discipline must deal with the specialisation of the different methodology related to the form issue at different scales. The metropolitan discipline, consequently, founds a technology for the form of the metropolitan anthropic-geographical Landscape (Gregotti, 1966). Gregotti considers Architecture as the technical description and related project of the “surrounding”, in other words, a synthetic way to define a place constituted by built and natural environment together (Focillon, 2002).

Metropolitan Architecture and Landscape projects work as a meaningful articulation of green and grey infrastructure (# wet and dry lands; # project of the ground; # constructive ground) to shape a robust metropolitan civic image: a collective memory deposit and a metropolitan multiplicity of spatial identity which is not only local but global.

Nevertheless, Landscape is not only a production process but also a significant element for a bigger scale city project per se. It produces the quality of the figure of a specific landscape, in other words, its identity (Lynch, 1960). The Metropolitan Architecture project applied to the landscape issue is not only a technical language for a small group of technicians, but also an impoverished language. It is similar to a linguistic corpus, – within its syntax, grammar and vocabulary-, which coincides with the total physical visible environment. This is why Landscape functions as a sign marked into the ground by men (and therefore their values and ideas) which will be forever the shape of the collective memory of a specific social group (Fig. 1.1, 1.2, 1.3, 1.4).



**Fig. 1.1** Guadalajara-Acatlan de Juarez, Landscape Tonicity, Galiulo & Di Fini



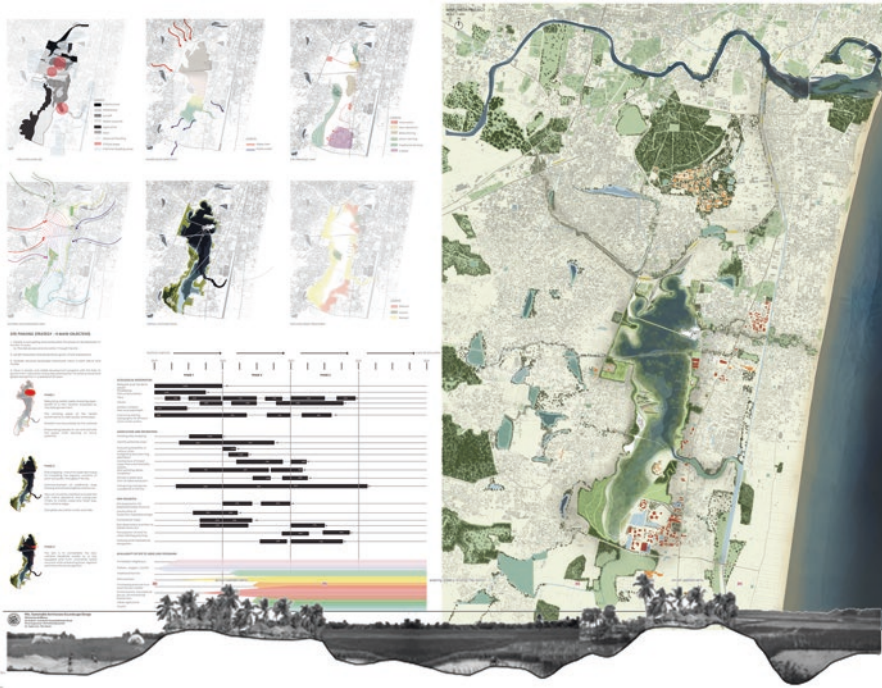
**Fig. 1.2** Milan-Segrate, Ricci Curbastro & Righetto

### ***1.2.3 Ground and Constructive Ground Projects***

It could be useful to compare Secchi's "Project of the ground" (Secchi, 1986) to Linda Pollak's Constructed ground (Pollak, 2006). According to Pollak, "Constructive ground" is a "hybrid framework that crosses between architecture, landscape architecture, and urban design to engage the complexity of contemporary urban landscape".

This can only happen in a not conventional disciplinary framework. Pollak dislikes the nowadays way to represent the ground as a void around buildings that considers the landscape, such as an unproblematic background. For Pollak and Kennet Frampton (Frampton, 1999) the priority "should now be accorded to the landscape rather than freestanding built form". Because of this, the Metropolitan Architecture project has to involve the ground as "material for design, using





**Fig. 1.3** Kolkata-Desakota Landscape, Kumar and Chennai-Masterplan, Sravya & Raval

landscape as both a structuring element and a medium for rethinking urban conditions, to produce everyday spaces that do not exclude nature”.

We can also mention Paola Viganò’s *Discovery of the empty space* (Viganò, 2010) such as a project related to space in between and its sequences, which allow new ways of land uses. Viganò argues that the term *Landscape urbanism* originally means that the urban space is made of landscape because it is built with landscape’s materials.

First of all, we have to deal with “the non-built space” where urbanity, both diffuse and fragmented, does exist, in which the landscape has an important part. This context, indeed, requires rethinking the materials and techniques of the project.

A new Metropolitan Landscape project, – its structure and imageability–, is therefore needed, and this issue involves a sensitive reshaping of an already existing environment too (Lynch, 1960). Nowadays, the exclusive technology approach to landscape reduces the local value of the characters of a place. However, the metropolitan dimension, – considering the metropolitan continuity of eco-armatures and their articulation with the grey infrastructures–, can be the engine for the construction of a new relational non-static identity, that reevaluates the local characters of a place while connecting them to the net of the cities of the world. Frampton, too, distinguished between the grid and the pathway: the rationality of the universal grid versus the autochthonous pathway or the rationality of normative technique versus



**Fig. 1.4** Istanbul-Golden Horn-Haliç Masterplan, Kadioglu

the rationality of idiosyncratic form. Frampton promoted interaction between the “wet” landscape place-form and the “dry” rationally assembled product-form.

According to Linda Pollak, “identity is grounded in space in ways that are geographically and historically specific”. That is true at the metropolitan scale dimension too. However, the contemporary relational identity is dependent on articulation, in a sociological sense. Pollak also argues that the articulation of the different collective and private spaces, or among infrastructural net’s elements, including the different infrastructural elements and built form types (Secchi, 1986), is the structural support for a multiplicity of spatial identity. These are the main “Bigness”



results (Pollak, 2006). The term resonance as opposed to dichotomy- used by Pollak-, enlightens the need for a unity of different disciplines rather than a sectorial a priori assumption.

### 1.3 The Practice of Metropolitan Discipline

#### 1.3.1 *The Practice of Metropolitan Discipline as a Support of the Metropolitan Landscape Project*

The Practice of Metropolitan Discipline supports the construction of a structure for the setting of metropolitan landscapes. It provides organizational and technical expertise for a new overall project of urbanity. That knowledge is based on the physical and virtual (Meta-city, Shane, 2005) network between the new city shape, the interfaces among built capital and natural capital, and the new forms of conviviality within metropolitan urban-rural linkage patterns of settlement.

Our metropolitan metabolism approach, consequently, nourishes the territory through an ecological interest in environmental sustainability, compatibility and resilience not exclusively tied to the balance between energy produced and consumed, but also to the integration over time and to the different scales of the rural and urban landscapes.

Metropolitan Landscapes arise where the resilient articulations of the interface between city, agriculture and nature promote the quality of dwelling sufficiently enough to ensure the human well-being within the metropolis. We aim to discuss the approach introduced by the concept of urban metabolism that considers the arrangement of landscapes in a single ecosystem, and according to the *décalage* from natural to rural, to the urban context, which is understood through new design strategies of transformation, replacement or maintenance.

The Practice of Metropolitan Discipline – that we are promoting- aims at a multidisciplinary endeavor which applies science-based approaches to assess the compliance of the municipal land use plan with the conservation and restoration model of the entire ecosystem through new-built-form-types.

Our research focus is on case studies at the metropolitan scale and discussions about possible toolkits of strategic actions based on the understanding of the territory in a geographical, urban, architectural, economic, environmental, and public policy perspectives. It considered the analysis and interpretation of the existing conditions, and the creation of integrated design tools, inter-reliant in the metropolitan system, as new planning opportunities also offered to the municipal decision-makers.

According to the United Nations World Urbanization Prospects 2018, by 2050 almost 70% of the world's population will live in urban areas. This radical transformation will be managed with a strategic vision. The widespread growth of urban areas indicates the importance of building increasingly resilient and sustainable

cities with up to date infrastructure and focused on the human scale, capable, then, of minimizing the production of climate-changing gases and smog. Solutions are needed to meet the new demand of the citizens of a renewed metropolitan landscape. Understanding the role as interface of the urban and rural linkage and its consequences for sustainable development will be essential for the successful implementation of the Agenda 2030<sup>1</sup>.

### ***1.3.2 A Cultural Reorientation: Nothing of This World Is Indifferent to Us***

Much has been said about the need to rethink the contemporary city in terms of environmental sustainability. I want to start with two texts that I consider revolutionary concerning the fundamentals of Western cultural thought that have made anthropocentrism their strong point. The first is the encyclical letter *Laudato si'* of the Holy Father Francis on the care of the shared home. The second is the Synod for the Amazon.

Francis places the terms of the discourse on the relationship between man and nature within a primarily ethical and political discourse. We are earth, and our body is earth and, Francis states, “nothing of this world is indifferent to us” and because of this “it is not possible to live healthily in a sick world”. We must start again from the sense of responsibility and interconnection that gives strength to an idea of justice that recognises the same rights to all living beings and proposes the value of the circular economy (Padoan, 2020). The human being is the guardian of creation. It is a complex fact that cannot be traced back to its poor functioning: the technocratic paradigm must be overcome through an awareness of our identity that is strengthened in our relationship with other living beings. His thought also presents a “theology of difference”, understood in the broadest sense. In our society, He argued, the aim is to include in an “agora of differences” all differences and their rights. The principle of the common good (such as water, for example) is an important issue that must be transformed into everyday practice.

---

<sup>1</sup>In this scenario, the 2018 edition of the UN World Water Development Report (UN, 2018) announces that “More than 2 billion people lack access to safe drinking water and more than double that number lack access to safe sanitation. With a rapidly growing global population, water demand is expected to increase by nearly one-third by 2050. In the face of accelerated consumption, increasing environmental degradation and the multi-faceted impacts of climate change, we need new ways to manage competing demands on our precious freshwater resources”. Nonetheless, water management is one of the biggest tasks within a city, and getting it right is necessary for cities and their inhabitants to both survive and thrive. The water management of the city also affects rural and natural areas, threatening the freshwater reserves. National and regional climate policy and planning must take an integrated approach to climate change and water management. Increased water stress and meeting future demands will require increasingly tough decisions about how to allocate water resources between competing water uses, including for climate change mitigation and adaptation.

For this reason, the economy must be invested in this kind of reasoning, and environmental justice must be linked to social justice. Urged by the drama of poverty and inequality produced by climate change and today's Covid19 pandemic, we must change the benchmarks of our relationship with the Earth to affect social and economic processes. The theme of the common good, which is the classic principle of social doctrine, must become political energy for change (Tomassone, 2015).

The Synod for the Amazon is not a local episode but also concerns a radical theological reorientation concerning an "outside" that is radical: a possible new line of direction that does not follow the thought that sees man at the centre. Compared to the old continent this "outside" means new themes, new ways of dealing with the relationship with the natural environment, and the reference to a radical decentralisation of a world that is not centred around the human being. Not anthropocentric concerning nature, not marked by the primacy of the human being within the environment. The biome is a hyper-connected reality that requires an overall interpretation of its elements not only in terms of ecological issues but also relatively to those who inhabit it. An integral ecology involves the valorisation, defense and development of all this reality. A global and intercultural, ecological, and social reflection is mandatory. It is a cultural reorientation because each part is relative to the whole. The centre is, therefore, everywhere, and the cities start in the suburbs. That is the radicality of a discourse that needs an integral conversion. What, then, does it mean to think within a situation as unprecedented as that of today? It means considering the present through the lens of a radical change in the man-nature relationship that also introduces the aspect of uncertainty and "don't know".

Gaia is the product of a process of complex interactions between identities.

In his text: *Facing Gaia. Eight Lectures on the New Climatic Regime*, Bruno Latour (2017) argues that we need to rethink the idea of progress by discovering a different relationship over time. The thought then will tend to re-learn how to be part of the natural world: "Only if we place ourselves inside this world will we be able to recognise as one particular arrangement the choice of existents and then ways of connecting what we call Nature/Culture and what has needed a long time to format our collective understanding (at least in the Western tradition). Ecology clearly is not the irruption of nature into the public space but rather the end of 'nature' as a concept that would allow us to sum up our relations to the world and pacify them".

What makes us ill – justifiably – is the sense that that Old Regime is coming to an end. The concept of "nature" now appears as a truncated, simplified, exaggeratedly moralistic, excessively polemical, and prematurely political version of the otherness of the world from which we must protect ourselves if we are not to become collectively mad – alienated, let us say. To sum it up rather too quickly: for Westerners and those who have imitated them, 'nature' has made the world uninhabitable".

Having cancelled the infinite dimension of the universe by the effects of climate change, according to Latour, we return to a finite world. The distinction between nature and culture dissipated, he proposes the concept of "worldling" understood as a multiplicity of existents connected to the multiple way of life. His champion is Lovelock, who speaks of a land impersonated by the mythical figure of Gaia who

was born together with Eros and Chaos and who, understood as a “whole composite”, no longer presents the internal coherence of which holistic theory speaks. Holism is only possible if one believes in the theory of a great watchmaker who governs the world with the aim of universal harmony. Nevertheless, this is not so. Gaia’s eco-system is a systematic connection and not holism. It is not necessary then to explain the history of all things as much as it is somewhat necessary to develop a series of tests to bring to light what Latour calls the unexpected characters, in order to create “collective bodies”. The research must then focus on which are the organised agents to attribute a significant role in the conservation of the Earth. The Earth is a superorganism that has no parts and no whole. Each part acts in it without an entity to govern it. Each organism is an agent that does not develop in an environment. However, it informs it according to its particular intention and in a manner appropriate to its development and interest. Gaia’s role is to capture these intentions by determining complex interactions between them without erasing the meaning of each element at the moment of their insertion, so that each one is understandable and does not lose its identity. What counts is the number of agents who take part in the action by adapting to the environment, modifying it and thus transforming its origin. Gaia is, therefore, a single indivisible process formed by the evolution of organisms and their environment. Latour calls this creative action “waves of action”. Calculating an optimisation of the process becomes impossible (Ostrom, 2006); instead, the opportunities that complex interactions offer must be seized.

What is the economics of nature in carrying out this process? The hypothesis is that the edges between the inside and outside of the phenomena must be eliminated by following waves of action, thus modifying the scale of the phenomenon. The vision of Latour illuminates our reasoning on the metropolitan approach to complexity.

Many of the contemporary territories are places of juxtaposition of many independent singularities (parataxis). The leap in scale and the rapidity of change have been the drivers of transformation: the space of the metropolitan city is the offspring of time. A changing territory in which important reasons for crisis emerge that are highlighted by unconnected parts of the territory and that are deeply linked to the distinctive features of dispersion, within which, in particular, specific infrastructural configurations have been defined over time: the diffuse networks of water and roads, for example (Viganò, 2008). The research, starting from the experimental and concrete project of some places affected by the transformation, questions the possibility of producing a metropolitan physical space in which the syntactical structuring is characterised by different levels of physical-spatial integration between infrastructures (green/blue and grey). Primarily, we are dealing with peri-urban areas, linked to large megalopolises or the rural areas today affected by rapid urbanisation, with visible effects on the organisation of citizenships.

### 1.3.3 *The Landscape Physical Dimension: Ecology of Form*

We name the generative processes of the system of relations: Set of Metropolitan Landscapes, and we identify them as hybrid landscapes.

In today's city, cosmopolitan globalization brings about a syntactical transformation. The new cities or their new neighbourhood as individuals do not result from reinterpretations linked to their position interpreted on a different scale, and the places cancel each other out. In 1844 Carlo Cattaneo called the Italian landscape "anonymous regional garden", indicating that the Italian territory, which Lynch called "total built landscape", was social work. The identity of a place is a process in which space, time, work and memory are the crucial elements for the definition of identity matrices of geographical, agrarian, and morpho-typical nature. Today, in the discontinuous local territories of archipelagos, the new infrastructural installations articulate and disarticulate that garden, interrupting the relationships that exist in the territories and above all, cancelling the identity matrix of the agrarian nature, which is compromised. However, it is not erased. It determines a territory whose identity is not static but understood as a dynamic process (Raffestin, 2003).

Magnaghi (2003) profoundly criticizes contemporary planning, which reduces the territory into abstract space, into isotropic support, inanimate of economic activities, and which generates new poverty due to environmental degradation. That is what is produced when the territory is not understood as individuality or set of patrimonial deposits through which to build sustainable development strategies. Magnaghi proposes to plan the territory as a system that is self-sustainable when it can determine a relational system between human and natural environment.

There are two hypotheses that we can put forward. One hypothesis naturally proposes a hypothesis of molecular re-appropriation of the territory, advanced by Magnaghi, starting from local values and enhancing them by creating new relationships between territory and settlement, mobility networks and landscapes. This approach aims to create a vibrant and high-quality agro-tertiary economy, which starts from the culture of care and the awareness of a shared design around which to build new relationships for the production of lasting and self-sustainable wealth. The second hypothesis, instead, aims to work on the interchange nodes between valley and city at the new scale of the metropolitan region, and reads the territories as a network of archipelagos. We intend to make them both converge into a project for the metropolitan region and its small and medium cities, which we have called: a gradient landscape of formality or set of metropolitan landscapes.

The new model of the city in the metropolitan region that we propose incorporates agriculture by including new functions and a new idea of public space. From a metabolic point of view, growth needs a discontinuity in its structuring, which regulates the logic of decommissioning structures that are no longer sustainable. However, against the dissipation of the heritage of the past, the concept of sustainability must be perfected. The question of the research is: how is the transformation of the territory sustainable? What kind of knowledge allows us to know the problem



that is inherent in the transit of the scale and the process of metropolitanisation and “de-lamination”?

The study of the ecology of metropolitan forms such as the organization of their life processes and structures, is relevant to this.

Let us analyze then:

1. The effects of metropolitanisation;
2. The exchange agents that help the transition between an agricultural and urban culture;
3. The value of community relations;
4. The tools of the metropolitan architecture project (“Hotspots Network”).

### ***1.3.4 Hotspots Network Strategy***

Ours is essentially a design dimension that goes in search of the metropolitan infrastructure in the territory and pushes for continuous change by informing it to answer the question: how to translate metropolitan processes into space since we can anticipate change but not predict it? We are elaborating a thought on urban-rural linkage patterns that we have called “Hotspots Network”. By interpreting the concept of biological hotspots, we mean the “Hotspots Network” as an exchange pattern between these two landscapes: it is a re-balancing agent introduced to mediate a series of dynamic instabilities. It is a new form of rural settlement with urban characteristics. A hybrid space that combines the two qualities:

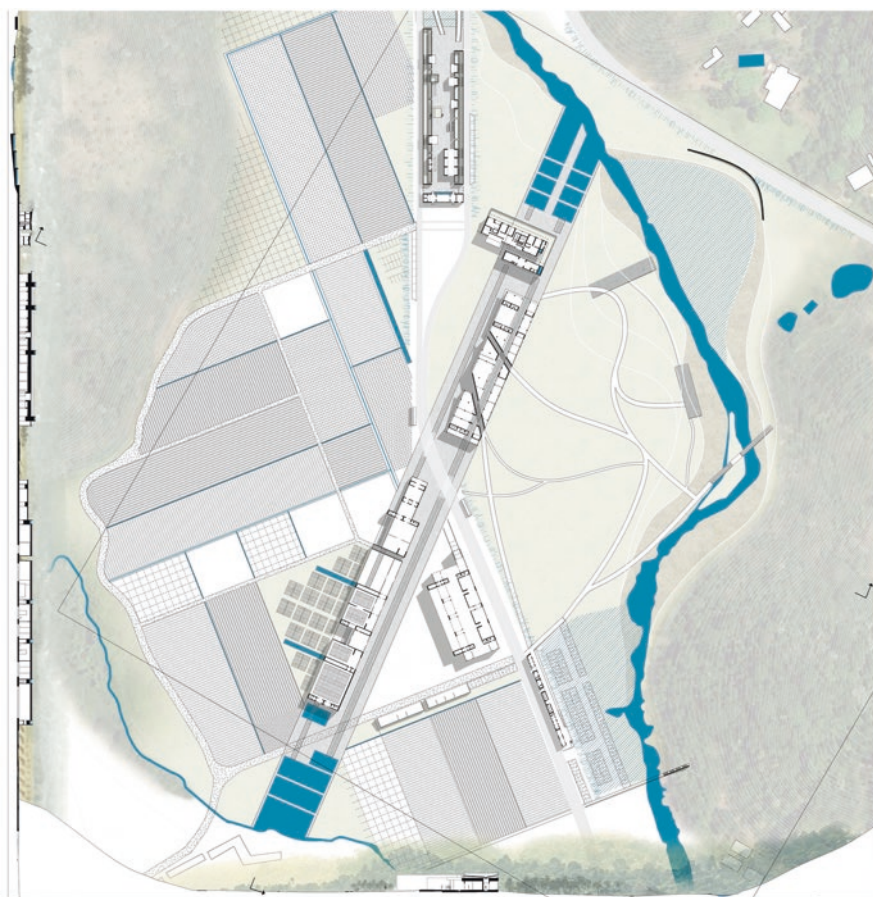
It anticipates the urban by redefining the rural.

It develops a circular rural economy.

It determines a new density typical of the rural, metropolitan character to generate a new rural community and a new type of metropolitan architecture that embodies the urban-rural linkage pattern.

Following Latour again, we can talk about a new type of metropolitan village “as an ontological ideal: modern places where the spatial organization reflects a dynamic livelihood in transition”. Our metropolitan architecture project aims at re-conceptualizing the scales of the territory (Figs. 1.5 and 1.6).

We wish to respect the local identity dimension of habitability, in a context in which the city has already, at times, grown into a formation that incorporates, within it, fragments of agriculture, which must be re-conceptualized through a synergistic relationship with the urban structure. The field conditions, then, must determine a porous plot (re-code), searching for sensitive territories and reactivating codes of self-generation as new care of the landscape. We consider agriculture, to all intents and purposes, a requirement of the metropolitan city. That is a way to rethink industrialization, which starts with geographical investments in raw materials, as happened in Lombardy in the past two centuries and which we consider an example to



**Fig. 1.5** Rio de Janeiro-Tingüa, Hotspot Networks Masterplan, Tomasella & Buzzella

be rethought. Water was considered a regional infrastructure and water took over agricultural and industrial production linked to agriculture, as a resource before local development. Based on water as an energy-industrial resource, industry built the landscape and constituted a way of sustainability: consumption and care.

Bernardo Secchi (1986) argued that we must take into consideration the different parts of a city and its territory, in other words, their differences and specificities. However, it is not only a need for documental classification. This analysis aims to recognize the generative processes or the system of relationships which have produced these differences. Because of this, the perceptual characters of the parts, which reveal their morphological features, are relevant to describe generative processes. In the end, according to Secchi, we need to mark the leaps in scale to enlighten the different spatial levels articulation; this is precisely the Metropolitan Architecture's project aim.

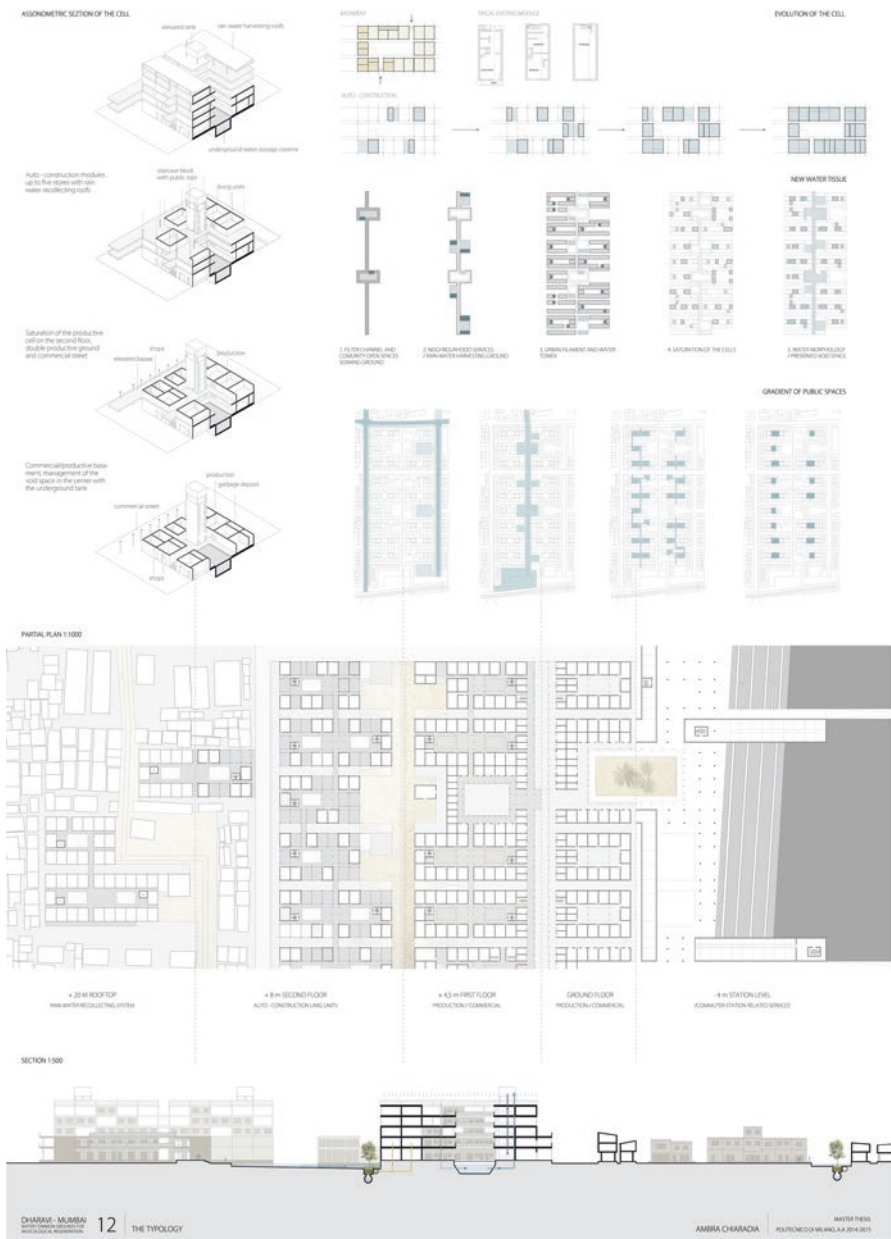


Fig. 1.6 Mumbai-Darawi, Water System Plan, Chiaradia

We would like, therefore:

- to define in the territory the metropolitan digits (operative reading unit, Gregotti, 1966): measure and position are the criteria to demarcate them (Ortiz, 2014). These must be related to geography, in other words, to the territory formal values. This means: related to the anthropic – geographical formal typologies; conceived such as the reading and representation of the indicator of formal transformation due to the planning actions; and finally, all these terms will constitute the basis to define the specific criteria for the metropolitan digit definition. Each Unit named Figural Unit of Landscape has anthropic – geographical structure and represents a Typical Figure of Landscape, not only a Metropolitan Land-Use Digit (Rogers, 1997). This is relevant because it shows how the environment issue represents a shift from architecture only to landscape too, as a way to remember the places relevant for our lives (i.e. the system of orientation in Lynch, 1960);
- to describe the relationship among the homogeneous metropolitan digits;
- to explain how to interpret each of their roles inside the whole and between different wholes;
- to recognize the different level of the field of action (section strategy) (Gregotti, 1966);
- to conceive new built form types and new land uses to enlighten the morphological rules able to allow clear legibility of the metropolitan scape (i.e. city's floor space or distribution of adapted space, – activity pattern-, Lynch & Rodwin, 1958).

## 1.4 From Territory to Environment

### 1.4.1 *The Territory Type*

The Territory (Sereni, 1961) is a dynamic concept that can be read at different scales at different times, but above all capable of integrating different scales, times and functions. Among the Italian studies, according to Raffestin (2003), Territory is understood above all in its physical component. It is subtended by a dynamic process that increases its complexity. The discussion on the concept of “Territorial Type” (Caniggia & Maffei, 1979) is relevant. It is defined as: “the concept of Territory that every man relevant to his time assumes, that is, a way to travel it, to choose the places where to settle, to place the locations where to meet. It is a concept that includes a dimensional entity. It is a gradual conformity: a typological process of Territory. [...] A dimension of a cultural area presupposes adherence to a delimited territory. There is a relationship between a leading area and marginal areas, which act in imitation of the model suggested by the leading area but do not enjoy the privileges since they practice on incongruous dimensions. The territorial typological process is the progressive change of territorial types as a system of laws of procedural transformation of a previous type into a subsequent one, the reading of the processes is carried out through the reading of a system of signs that are

recognized as inherent to the same concept of Territory as complementary. In each phase, there are load-bearing structures that in the next phase are used as secondary or marginal because they are residual at specialist structure levels.

The maintenance of these reserves of the Territorial Type is concretized in the valorization of a past cultural world given a return cycle to propose it again. (p. 243): cyclical periodization of Territorial Types. The cycle is defined through the phases of planting, consolidation, recovery, and restructuring. [...] Our time appears to be the final product of the fourth cycle: it is characterized by a high artificiality and consequent fragility of structures that have become too complex and too oppositional concerning the capacity to withstand the natural structure: high specialization and short duration. There will inevitably be a new crisis of settlement that will determine a new localized structuring, efficient on a small scale (p. 249)".

The reasoning then shifted to the local scale and typology: "Building is one element if compared to a system of larger-scale sizes, such as those necessary to reach the whole territorial organism. The Building inside is composed of smaller-scale structures and systems. It will be necessary to study the laws of connection of each scale, laws intrinsic to the same laws of their becoming in the dialectic of progressive formation-mutation. For each scale, it will be necessary to go back to the elementary matrices (gradualness of formation)". For Caniggia the continuous becoming is subject to the law of the successive doubles, but it also foresees in moments of crisis a moment in opposition to the inherited models. The growth occurs by a progressive complication, which is also the constant achievement of a greater degree of complexity and relative complementarity and indispensability of the components. E.N. Rogers in his *Experience of Architecture* (1997) had already introduced the concept of a "Typical Figure of the Territory". According to Rogers, it was not history that founded the new cities, but rather the environment. Caniggia also introduced the concept of "Environmental Organism": "Organismo Ambientale" (p. 254). This is a concept of environment and environmental type which includes the types of each scale, readable vertically, for each scale, in its proceeding from elementary matrices to complex derivations and horizontally in the unitary historical configuration of the human environment. It is operating in synchronic correlations, for each horizontal section we want to operate in the various scalar meanings of the typological process, diachronic by definition. The scale environment is differentiated for each place in the city and territory".

Therefore: Typical Figure of the Territory that introduces with the term "figure" the need to consider the geographical structure that makes the Territory and its primary unit a uniqueness; Territorial Type that changes over time according to the interpretation that different cultures give it as a resource. Nevertheless, it is the environment that holds together the vertical reading of the meaning of each place with the horizontal and historical one. From Territory to environment (each community tells the story of the Territory and its biodiversity) this is the first pair of terms that undermines the concept of "operating history" present in Muratori's (1967) works, and opens the field to the metropolitan approach to complexity.



### 1.4.2 *Metropolitan Measurements and Dimensions*

All these concepts qualify an essential architectural concept which is that of measurement. That is the relationship between large and small, where the small coincides with the body of a man and the large coincides with the whole inhabited field (total landscape made visible, as Lynch and then Gregotti said) which is the Digit or Minimum Unit of the Metropolitan Landscape.

Two definitions of minimum unity of the metropolitan landscape have emerged, that of Cultural Landscape Unit and that of the Implementation Unit. In both definitions, what is common is the principle of homogeneity. The form of the minimum unit of the metropolitan landscape is constituted in the perceptual world in such a way that the elements unified in a formal complex present a certain qualitative homogeneity, immediately identified by the expert eye. That is a property of the whole. The need to give structure to the perceptual world is a way in which there is a natural tendency of the elements to achieve a certain homogeneity of scale.

This tendency, however, also acts on the elements unified in formal complexes of new dimensions: thus, even the elements themselves tend to become homogeneous. The tendency to homogeneity supports the regulating principle that perceiving a form tends to homogenize the elements in order to make them available for the implementation of a metropolitan project. The project of metropolitan architecture, after all, is usually linked to infrastructural plans in which the technical component tends to be replicable everywhere. To overcome the de-differentiation of the places invested by metropolitan infrastructure projects, the definition of Cultural Landscape Unit becomes central.

The elements that make up the Units of Implementation are called “factors” (“Unidad de Desarrollo Equilibrado” or “Bud”, Ortiz, 2014) with an explicit reference to mathematical equations. The effects of the relationships between them can be measured and calculated:

It needs to define Metropolitan Governance, Metropolitan economics, Metropolitan sociology, Metropolitan Environment (urban and natural), Metropolitan transport, Metropolitan Land use, and others. Moreover, it also needs to prove in each of these fields the difference between the urban approach and the regional approach. Simply speaking of urban or regional and applying these to the metropolis does not mean defining a discipline. It needs to establish the policies necessary in each of these fields. It needs to establish the calculus mechanisms to be able to calibrate the components, policies, and budgets necessary to manage these fields.

It needs to apply cost-benefit analyses, externality calculus, efficiency, and efficacy standards. It needs to establish the mathematical curves that relate to determining factors. Every “factor” must be quantified. That is what helps to find the right solution with the right amount of effort to be applied to each factor.

The Cultural Landscape Unit is analyzed according to (Alcantara et al., 2018):

- Natural Factors
- Historical evolution

- Cultural landscapes and their dynamics
- Sense of belonging
- Landscape views.

The way the description of the Implementation Unit is configured as linked to prepare a response to an immediate need. In the words of Choay (1986), we would call it: “model” and “utopia”. The way of the description of the Cultural Landscape Unit is instead to be understood as an apparatus of tools for a future instance. In Choay’s terms, we would call it: “rule” and “treatise”.

The first way of approaching the metropolis, – following the French author – could be assimilated to what in the Middle Ages (Siena, 1200) was constituted by the municipal edicts. These were not the founders of generative principles of the entire field of knowledge about the city, and they were behind the royal urban edicts that founded the norms of such edicts. The first systematic royal edict was Haussmann’s Paris Plan, which recast the royal edicts in the form of a police treaty with the corrective functions of a system. An empirical approach and what had never been a real system, rather than a scientific foundation, became the pillar for the planning and construction of the city.

For this reason, the proposed normative behaviours have no claim to legitimate scientificity. We could broaden the field of critical historical analysis also to what was later called the science of urban planning from which the concept of the Unit of Implementation derives.

We are still within what Choay called the “Utopia model”. After all, even the instrument of the Metro-Matrix that we use to determine the metropolitan structural plan belongs to that category as a product of a utopian vision, which believes it is possible to achieve integration and social equity through a spatial model. The Utopia model referred to Tommaso Moro describes space as existing space that is opposed to real society. It is, therefore, a model outside of historical time and not modifiable. The poignant criticism of this model lies in the fact that it excludes planning errors.

Before Moro we can identify other authors who with their writings were prodromes of his vision. We can begin with Philaretos, who however denies the inflexibility of the model and points out its perfectibility. Leonardo configured a dimension of utopian models. He inaugurated a tendency towards “futuresology” of the city in which the consequence of the progress achieved because of the discoveries is exhibited.

Rabelais, in his *Gargantua and Pantagruel*, described the space of the world in reverse as the guarantor of a condition of freedom.

Of the description of the Units of Cultural Landscape, we can say that it is a text that comments on the territory and its genealogy, made of memory, facts and people: its geography and its specific ethnography.

The medieval Panegyric of the city of Florence, written by Friar Lazzaro of Padua, and Bonvesin de la Riva’s *De Magnalibus Mediolani* can be considered the predecessors of this operation produced by the Autonomous Metropolitan University of Mexico City, since in both of them, space is given a primacy determining its possible “objectivity”, that is, its positive description. The structure of space is put in a

position of dominance because it allows the authors to communicate the message about the value of the territory and of its cities to be shared and handed down.

### ***1.4.3 New Technologies and Metropolitan Landscapes: Sets and Scenes***

We introduced with Secchi (1986) the concept of “ground project”. The soil (solea) is the horizontal line of the ground in the descriptive representation of a drawing. Given an elevation 0 (zero), we establish the two elevations +1 (plus one) and –1 (Below 1), creating a more complex image generated by a plane scan. We then determine the question of the scene: evocative scene of memory/experience for a psycho-geographic awareness of places (Lefebvre Situationists). For metropolitan landscapes, technology becomes a poetic reaction tool to determine a new environment when it is placed in a situation to generate an aesthetic object (Simondon, 1969). However, the ground and soil for metropolitan landscapes are also a fundamental archive of places to stimulate an imaginative action in the spectator (Chrislov Bakargiev & Vecellio, 2009). The metropolitan project creates a relationship with memory through the creation of a virtual image, conveyed by new technologies, which coexists with the current perception of the object. The structure of memory is not a nostalgic or picturesque feeling linked to the landscape, nor a philological reconstruction or a mechanical memory. It is rather that complex mixture of memory, experience and space that through the quotation uses traces of removal to find a past that is always present, thus anticipating the future (Vidler, 2006). It is as much a project of the past as a project of the future. The landscape as a scene must have within it: a futuristic component and the sense of a collective memory generated by the sharing of archetypal images. Its aim must be to make explicit the meaning of a place for the city (Jedlowski, 2002) by reactivating it from an experiential point of view. His compositional form then is that of editing (Contin, 2004). That is why we talk about Sets of Metropolitan Landscapes.

## **1.5 The Social Landscape Dimension: The Right to the Landscape**

### ***1.5.1 The Green-Grey Infrastructure as the Metropolitan Agora***

Like Harvey (2014), Lefebvre (2014) saw the normal workings of everyday metropolitan life as generating unequal power relationships, which in turn manifest themselves in inequitable and unjust distributions of social resources across the space of the metropolis. This demands greater access to social power and valued resources

by those most disadvantaged by inequitable and unjust geographies define the struggle to reclaim the manifold rights to the city. The aim, at least from a liberal egalitarian point of view, is to gain greater control over the forces shaping urban space, in other words, to reclaim Democracy from those who have been using it to maintain their positions of advantage. Within the metropolitan studies context framework, the inclusion of the rights to Landscape and the Lifestyle is fundamental.

The right to the Landscape is related to the identity rooted in the Landscape. Every city has a Typical Figure of the Landscape (*figura típica del territorio*) that is the result of a long mediation between the environment and the settlement. When natural resource refers mainly to the utilizable source of the environment, the right to the landscape concept underlines the importance of the shape and image of the Landscape as an intangible resource. It cannot be simply disregarded by economic rationale and global intervention.

How is Democracy linked to the idea of nature, Metropolitan Landscape and new land uses? Unfortunately, the idea of Democracy has been emptied of meaning, and it has been tinselled since the counterbalances of economic power were eroded. The first problem, however, is the speed of change in the metropolitan regions. We are facing the knowledge that the metropolis space-time must come to terms with the dislocation of unity. Design experience no longer proceeds from the understanding of the landscape digit because the rules in all fields are constantly changing, and the space of the observable is rapidly evolving. How, therefore, can Galileo or Maturana and Varela's experiment by setting its limits be implemented if everything changes so quickly?

The political role of the metropolis should be reconsidered. Its public responsibility in managing employment and investment, first of all. Is this possible if we continue to talk about the competitiveness of metropolitan regions? It is hard to believe so. Two themes are engaging today.

The brain runs on 20 watts of energy, and we are replicating a cerebral cortex with the matrix on the territory. What is of interest today is the urban part of the metropolis, its atopic digital proximity which, we have now discovered, can also be emotional. However, its physical proximity, the slow speed that today seems to be scary, must be mentioned.

We must also put in the foreground what we do not see in the urban metropolis: poverty and women's work. That could be one of the more passionate aims of the metropolitan studies as the metropolises are the contexts in which these invisible ones are most visible.

There is a lack of debate on how we should arm our thinking to face an unprecedented situation: to rethink our human condition. In short, how we have access to the reality of our cities it is only related to the issues of health, public hygiene, its size and viability. According to David Harvey (2020), a new type of collective action is needed so that all of us can be free individually. Arendt reminded us how the city needs places from which Democracy can arise: places where the joyful emotion of being together in a space and enjoying active participation in the town can begin (Cavarero, 2019). Participatory Democracy, therefore, understood as a dynamic resource, as an affection that can always be activated, as a positive and

creative emotional experience. However, today due to the Covid pandemic, it is particularly frightening to “be together” because of the distance that must be above all physical. So, what happens to this Democracy? How can we rediscover the freedom to act together in common (the Latin concept of *communis*: something that the citizens share until when they use it together) or public space as a horizontal space of participation?

What must the metropolitan society do so that women and men can be bearers of a citizen's rights? Every social evolution passes through an anthropological transition that is made of relationships: the city and architecture and their physical and mental space are the tools for “intersomaticity” (Choay, 1972): entering into relation with other bodies, whether animated and not.

Democracy escapes the mesh of classifications. It does not end in a model of government defined by a set of principles, rules, and procedures, nor in a system of values. It belongs to the phenomenology of political experience (*polis*) which according to Arendt is focused on the material sharing of a common space (*agorà*) in which free individuals interacted as equals. It is a place in between, which affirms itself as the place of the relationship between a plurality of equal and distinct actors. This physical space of participation has as its purpose to relate and make those present appear to each other, while leaving them separate so that they do not merge into an indistinct mass (the multitude of Marxist individuals). This discovery takes the concrete form not only in space but also in a type of life “*bios politikos*”: a full realization of plurality.

How can the metropolis qualify Democracy through the re-founding of the concept of habitability, removing it from the grey zone of universal trivialization that identified it only as governance, policies, law or representative regime?

The metropolis is characterized by a horizontal conception of widespread, participatory, and relational power between equals that are such because they horizontally share the space that is the Earth (Environmental Justice). This is a political characterization of the metropolis that does not refer to Plato's political doctrine on government, which replaced the experience of the *polis* with the notion of politics understood as the technique of governing citizens and administering their interests. The metropolis can be the alternative model; it is another political idea that has a generative and affirmative, germinal aspect.

Politics must not only deal with social and economic activities but must propose a new way of living. This is written in the Metropolitan DNA structure which is described by the Metro Matrix and Genoma ([www.pedrobortiz.com](http://www.pedrobortiz.com)) as the continuity of the green-grey infrastructure, that we also name eco-armature, the common space where the metropolitan citizenship can live and act. It promotes an eco-systemic approach to integrate the management of land resources and water into the Metropolitan Landscape project, promoting its conservation and sustainable use. The whole metropolitan complex system functions as an extensive ecological infrastructure -composed of blue, green, and grey infrastructures- that can reconnect the different parts of the territory, crossing natural, rural, and urban areas.

The habitability of this space-time (where time is that of man but also that of nature) is linked to the category of plurality with its ontological meaning as



constitutive of the specific human condition. There is a mental and corporeal spatial dimension of political interaction. This agora today is the green-grey infrastructure. It is a space that allows bodies to appear by acting, a materially shared space in which to show themselves with acts and words. Equity here is achieved by accessing the visibility of the public sphere where the human beings define and understand themselves as equals: qualities of the world generated through “nomos” more than “lex” and which allow everyone to be citizens, living beings endowed with rights and duties.

### ***1.5.2 Post Landscape. The Environmental and the New Public Space Question***

The Brenner analysis (Brenner, 2014) linked to the environmental issue, will lead the discourse of urbanisation to understand the profound changes in production and economic processes associated to the contemporary society (Luis Monte-Mor, 2014).

According to Henri Lefebvre (2014) the countryside, right now, is the town’s environment, its horizon, and its limit. However, urban problematics cannot be engage at every problem: there are problems that are exclusive to agriculture and industry, even though urban reality modifies them. Therefore, our responsibility is to identify, analyse and design what happens to the forms, functions, urban structures and landscapes within their different contexts that are transformed by the breakup of the ancient city and the new process of fast urbanisation.

In this sense, Lefebvre introduces the considerable idea that urban society, virtually covers the planet by recreating nature, which has been wiped out by the industrial exploitation of natural resources and the destruction of the so-called natural particularities.

If it is so, today, there are essential issues of post-urbanisation which will characterise our landscapes (built and natural) in the same way as post-industrialisation did in the past. For example, what will happen to the previous low urban context spread in our territory?

Regarding the natural landscape, we try to describe new common spaces where people could relate to the land not as individuals but as persons inside a community, through new inclusive land uses and social facilities for different citizens. That means that we have to insert the post-landscape dimension (Harvey, 2005; Wall & Waterman, 2017), reclaiming land for new hybrid territories, understood and evaluated at the large scale, but discovered at the small one which is in fact the only scale real.

Observing the built landscape, however, as Wall (2019) claims, inside the city new landscapes of high control, through security, gating and fencing-off, was countered within the creative resistance of protests and demonstrations – both approaches attempting to redefine social relationships through appropriation and occupation of public spaces. In practice, these new metropolitan landscapes, reconfigured

landscapes formed through mass demonstrations which gathered in public spaces, undermine scenography promises of managed, pacified and comfortable urban spaces which had accompanied contemporary developments across the city. For this reason, contemporary cities with highest informality rates are the most prominent laboratories to experiment alternative forms of socio-ecological organisation through alternative re-combinations of public/common space patterns informing the city (Frigerio, 2016). The public space issue and the concept of the public realm, which alternates a space that today is only a public-use space will be a relevant point to discuss along with the chapter.

### *1.5.3 The Economic Landscape Dimension*

Reading of the territory from the perspective of *οικονομία*, the economy dimension alongside a more cultural and anthropological approach, allows us to analyse a city and the territory it controls, based on its capacity for development. Consequently, we can investigate the place within its particular moment of development. After this reading, concluded with a hypothesis of experimental design, the need to make the regulatory apparatus and the three metabolic operations of maintenance – restoration interventions, conservation; replacement – the normal state of design and approval of the works; transformation – verification of compatibility, and integration project concerning impact studies and the European Landscape Convention consistent becomes clear.

As we advanced from the modern to the contemporary era, the driver of the economy shifted from land and labour to entrepreneurship and innovation ([www.pedrobortiz.co](http://www.pedrobortiz.co)). The new combination of technology to address the existing problems and meet the new demand of the evolving market is fundamental in nowadays economic growth. A conception of the economical alternative to the dominant one, – in which profit is still kept as a value (values of exchange and use)-, but also as a value of relationship (Luigino Bruni et al., 2019), that includes a plurality of values in itself, is mandatory. In the current state of over-production and over-consumption, it is essential to investigate alternative models, such as the circular economy, within the metropolitan discipline.

The circular economy is a model of production, circulation, consumption of goods and management of the relative waste, guided by the principle of temporal and spatial conservation of the socio-economic value of the assets (value of use and exchange value). Moreover, the model is realised through the design of economically closed systems, in which the use of renewable energy is privileged. To be applied, the model requires both a technological evolution, related to new skills in design and use of material waste (biological and non-organic) and an evolution of territorial policies, related to the ability to privilege the socio-economic processes of circular type.

Both can measure the results obtained from the application of the model: economic indicators (increase in product value-added) and environmental indicators

(reduction of the production of pollutants, solid, liquid, and in the form of greenhouse gases). In a growing number of areas of application, indicators related to the social sphere are also considered, in particular the increase in jobs produced by the circular economy.

## **1.6 Metropolitan Architecture and Landscapes Project as Generators of the Theoretical Part**

### ***1.6.1 The Metropolis Architectural Project. Spatial Phenomenon and Environmental Question***

The Metropolitan Architecture project is based on research on types of buildings, units of land use, and types of Landscape studied regarding a metropolitan urban fact that defines meaning and significance. A precise definition of dimension and size (bigness) is linked to its recognisable image and a possible determination of a mental map even at the scale of the spread city rise.

The projects carried out within the Measure and Scale Laboratory of the Contemporary City, start from the study of geography, as a layer of the Earth. It determines the characteristics structuring the process of territorialisation of different cultures in history (urban biography). Changes in territorial hierarchies, the structure of the poles and networks, which are the basis of contemporary landscape schemes (territory plus landscape) are the first focus of the research. The Landscape, then, becomes an image of transmission of a vision, and value. The Landscape or, as Magnaghi says (Magnaghi, 2003), its celebration, makes the invisible visible. The basis for a long-term process of territorialisation are determined by identifying the aspects of territory invariance (material and cultural sediments), which can determine new balances between man and environment.

Nevertheless, it also changes as a place of new metropolitan relationships, especially on the scale of urban agriculture. These are projects, in fact, that outline a utopian scenario, a conceptual reference, a vision. That identifies the value of the limit of measure of technique, applied to the construction of the metropolitan city. Our projects start from the dimension of the infrastructural node. According to Ortiz (2014), it varies alongside the hierarchy of the different centralities (national, regional, urban), to arrive at the project of the neighbourhood, which can renew the typological dimension of living by incorporating urban agriculture and the pattern of urban-rural linkage (Fig. 1.7).

Our study's objective is the government of the leap in scale of the contemporary city, through the definition of a multiscale structural paradigm for the metropolitan city, which promotes an architectural and urban design and Landscape. The design of the shape of the Metropolis must derive from a spatial concept that synthesises the strategic activities of the different areas in a global form. Once the strategic form is recognised, therefore, the tactical positioning of specific projects can be carried

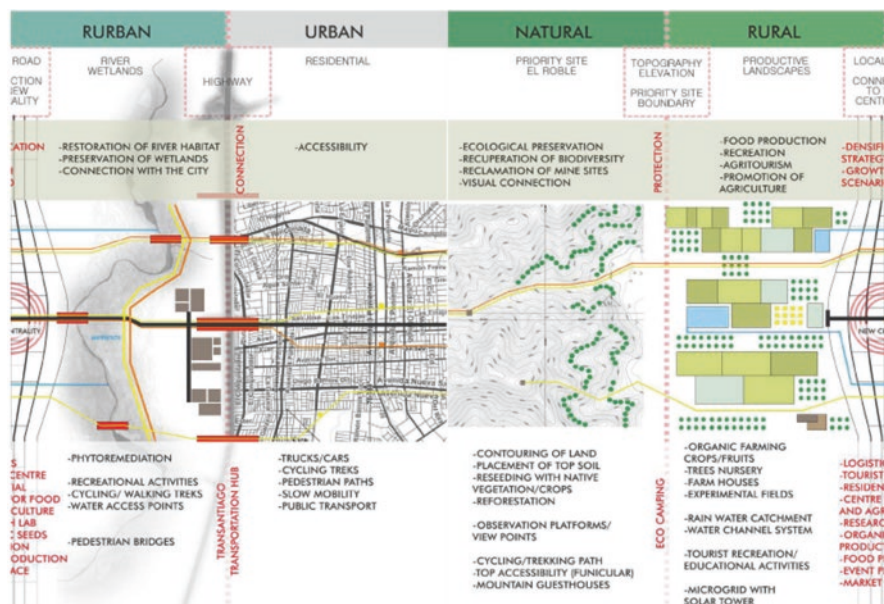


Fig. 1.7 Linkage Urban-Rural Diagram, Perkova

out. This implies that each urban project must reflect the strategic concept as applied tactically to that area. Only the Metropolitan Architecture projects can shape the strategic concept. The metropolitan form is immeasurable with the anthropometric scale. Therefore, the feeling of adequacy is given only through the image of a project at the urban scale.

The architectural project together with the infrastructures and landscapes that allow and present it at the metropolitan scale is no longer considered only as a sign imprinted on the territory. It interacts with the soil and determines a rhythmic sequence (expansion and compression of space/time) in the Landscape, which identifies different sets of landscapes as tones of living.

The forms of movement (new linear infrastructural system: commuter trains and motorways integrated with BRT, subways, minibuses and local capillary transport systems), are significant elements of the structure of the metropolitan scale, starting from the assumption that a new concept of territoriality at the geographical scale is based on the organisational principle of the Earth as a place of meeting and mobility (Lynch, 1980). The concept of infrastructure, be it grey, green, or green-grey, conceives infrastructure always linked to services, i.e. interpreted as what supports, allows, and presents services, i.e. the functions of the city. Even at the metropolitan scale, it is still understood as one of the founding elements of urban reality. The Green-Grey Infrastructure is connected to a new concept of monumentality, today attributable to the Landscape as a scarce asset to be safeguarded, and to the anonymous urban or agricultural fabric (Rossi, 1978). Cattaneo defined the agricultural territory of the Lombardia Region in Italy in 1844 as an “Anonymous Regional

Garden”: a garden as a sign of culture and anonymity of the work of the generations that cultivated it. It is a sign of a Landscape as social work with aesthetic and not only productive intent. The result is the definition of the Metropolitan Landscape through the visual rhythm (Le Corbusier, 1973), generated by the compression and decompression of the space, determined by the infrastructures. The green-grey infrastructure space is linear, in the dimension of global relations of distance, but at the local scale, it becomes areal and topological: space of relationships, rhythmic space, non-Euclidean undulating. In the new Metropolitan Landscape, then, movement, as if it were a new settlement principle, generates space also through its environmental qualification: the soil expresses itself. The Landscape section (The Valley Section, Geddes, 2015) and its strategy of levels, becomes the dominant element of the project. The mobility network becomes, for this purpose, an essential and characteristic element, which does not follow the model of the historical city. As Gustavo Giovannoni argued (Giovannoni, 1995), it is possible to preserve and develop the ancient cities only if we can connect them to a new network. That is an important factor, because precisely the old structures, well-rooted in the territory, behave, on a regional scale, as structuring elements also of the new metropolitan reality. They allow it to be connected with the geography of the territory and with the Landscape that is its figure and image, considered as a fundamental resource on the local scale (Geddes, 2015). One can thus attempt to construct a vertebral system for the new dimension of the Metropolis, which we call green-grey infrastructure.

Metropolitan models need, in fact, a form of coordination of rail and road accessibility infrastructures. However, usually, the versatility and capillarity typical of the railway network within the urban fabric, and vice versa, in the metropolitan territory, are not reflected. The potential for preferential growth, then, should be defined by possible extensions of the railway network. At the same time, the road network will have to be diversified to avoid the collapse of an excess of concentration towards a single route and a single centre. Diversified sites in advance of railway expansion will thus avoid over-dependence on a linear structure. The green system that accompanies the grey (Zarza, 1992) is no longer only conceived as a protective green, but as an inter-scalar system or eco-armour (Gouverneur, 2016) capable of making social sustainability compatible with ecological sustainability.

Green infrastructure and mobility infrastructure acquire a geographical, urban and architectural “skin”. The nodal points of interchange between the stairs are shaped and shape the compatible form of the green-grey infrastructure, which articulates the territory of the Metropolis. The architecture project of the Metropolis: new built form types, land uses, urban-rural linkage patterns, becomes the skin of the infrastructural framework, the geographical skin connected to the structure of natural and artificial soils, as it becomes the place of relationships with the rest of the cosmos or metropolitan archipelago.

The concept of environment, finally, must be integrated into the metropolitan fabric as capital to be preserved and implemented. A definition of environmental values must be determined before planning itself and accepted as a pre-established policy. The flexibility of the model produced by the Reticular Metro Matrix methodology (Ortiz, 2014) allows compatibility between environment and urban



development. The environment prevails when the two continuous grey and green infrastructures overlap (the only two continuous ones, while housing, services and industry are not continuous and therefore determine the sprawl). Natural environments must have a continuity to allow networking and biodiversity, which must filter through the metropolitan fabric to reach the heart of the urban system.

The needed tool is the construction of a topographic map, which is the device capable of supporting a mental map at the metropolitan scale. That passing from a geographical scale to local geography consists of a continuous and discontinuous system and a thick soil surface. Concerning the urban structural paradigm, finally, we want to define the possibility of a syntactic and communicative value of metropolitan architecture (cognitive value). It can succeed through the determination of a new multidisciplinary dimension, which tends to the definition of a statute of the architectural subject, as the ground project (Secchi, 1986). It is recognised as an instrument of construction and symbolic interpretation of the environment at the new scale: natural landmark and built as a new relais for the interconnections between the scales (Lynch, 1980).

1.7 The Tool

1.7.1 The Goal of Sustainability

First of all, we refer to an urbanised geographical field. It is often organised in an unorderly manner, jeopardising the city’s ecological footprint sustainability. The dispersed or widespread urbanisation, in fact, is characterised by the inability to protect the continuity of the natural armour on which the health of the land and its inhabitants depends. The Basque Declaration of 2016 is taken as the reference text for the Goal of Sustainability. The design of further works that insist on our territories, and especially those of metropolitan dimension, requires a more complex and updated conceptualisation (Fig. 1.8).

This is true in particular, for the need to recognise not only the preservation of geographical eco-region but also the style of an ideal and utopian intention

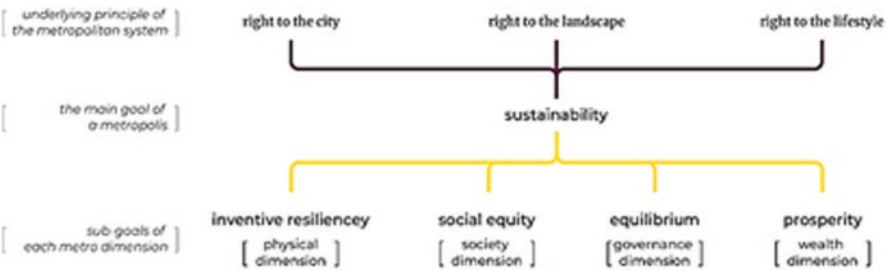


Fig. 1.8 The Underlying Principles and Goals of the Metropolitan Discipline

(principles and values) that animate knowledge, techniques and behaviours. The awareness of new actions of living in the map construction is fundamental to establish a practice of metropolitan living at different scales of spaces and times. This approach determines the temporal cadences of life (the new “metropolitan rites”). It introduces the notion of Right to the city and Right to the Landscape but also the Right to the Lifestyle, which is well-rooted at the local scale (Fig. 1.8).

### ***1.7.2 The Principle of Continuity/Discontinuity: Atopic Proximity and Meta City***

The Metropolitan concept is related to a measure and a scale which are not associated to human dimensions or commensurate with the urban fabric and the density parameters/index of urban concentration, represented in the concept of proximity. Metropolitan as a category is related to a context of mass mobility of people and goods, which implies a different relationship between individuals and groups. The technological utopia, embodied by the spreading of metropolitan infrastructure networks and the overlapping natural universe, has erased previous geographical traces, which were continuous, disarticulating agricultural and urban historical topological patches. Nevertheless, as a result, we may notice a sense of loss of productive and symbolic connotations of the cultivated land.

The old urban typo-morphological structure, whose functioning was mostly centripetal, suffers from congestion and lack of efficiency. Therefore, the concept of “paesaggio” must be integrated into the Urban Landscape discipline. Metropolitan works, consequently, are an alternative, intense urban form. Their environment, where discontinuity of the city fabric and atopic proximities due to the new technologies are produced, provides a convenient bridge to the abstract and invisible world of the informational and networked city (meta-city) as the content for the new technologies and new maps.

Our research field of action is the city that is the first engine for social integration, economic growth, worldwide cultural production and metropolitan architecture projects such as its structure demands a new discipline. Nevertheless, incommensurability emerges as one of the main topics, also concerning a new sensitivity toward the natural and local ground, and with the attention of new styles of behaviours induced by virtual communications in real-time. The mental conception of the new Metropolitan Architecture and Landscape projects must deal with a necessity for a discontinuity. It arises from the incommensurability of the new city dimension. The research investigates ways and strategies to adapt and reform the typological and morphological paradigms of architecture and urban design and new linkage urban-rural patterns for the transformation of sustainable contemporary urban territories.

Shane (2005) calls the era we are living in the Telecittà era, which takes the form of a net-city and a meta-city. The meta-city concerns the size or the virtual

telecommunications layers that determine proximity that is no longer linked to a continuity of the urban fabric and instead determines atopic proximity. The *Telecittà* is a net-city, and it is characterised by landscapes that are defined as the new hybrid landscapes (McGee, 2014). A sustainable approach to heritage leads us to integrate the structures of the past – often out of scale now – into the new Hybrid Landscape. The Landscape Urbanism discipline must describe that environmental issue.

The environmental issue, furthermore, carries two big cultural clashes: there is the so-called Latin Landscape, that Kevin Lynch (1980) called a total visible environment, and there is the wilderness of the Anglo-Saxon Landscape. It is essentially necessary to outline a profound conflict between the concept of Cityscape (Corner, 2006), further subdivided into techno-scapes, transportation-scapes, suburb-scapes and even sub-city-scapes. The peripheral strips and debris that Gruen calls the “scourge of the metropolis” is the living space inside the plots of networks. Consequently, these are defined as water channelled and regulated territory, against a landscape or wilderness, which is a space between the plots of networks and where water is managed, but it is a naturally flowing water.

We refer the principle of continuity to the green-grey infrastructure, the continuous metropolitan dimension elements, defined by the Metro Matrix. These systems require protecting the still free areas, according to the concept of *desakota* (McGee, 2014) and define the transport infrastructure. Thus, some regional blocks and areas of growth are identified, due to the infrastructure nodes that will increase the strategic role and the impact of housing, services, and productive activities (the discontinuous elements of the metropolitan area). The increase will result in continuous and constant feedback on the two main elements.

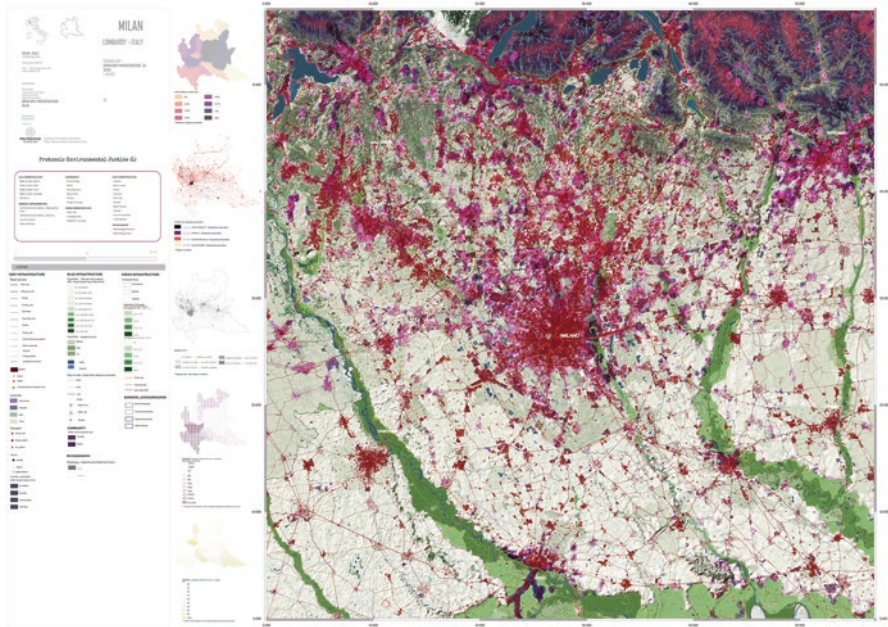
### 1.7.3 *Metropolitan Cartography (Fig. 1.9)*

While in the Latin culture the keywords for the urban discipline are scale and limit, in the Anglo-Saxon urban the keywords are scale and growth (without necessarily defining a measure). Often, the Anglo-Saxon world (Rowe & Koetter, 1984; Banerjee & Southworth, 1990) has interpreted the Latin world from the patterns’ characterology and not from its value as a paradigm. In defining the contemporary urban models, the twentieth century had three crucial moments:

Paris: the attainment of the limits foreseen in 1850. The theme of density.

Chicago: the overcoming in one hundred years of the limits previewed and the consequent invention of an original type of settlement that comes from the urgency of exchange between the points no more tied by contiguity of fabric.

After 1950: the discovery of the regional dimension. Hilberseimer (1993, 2012) said “on the side of the city” it is no longer visible; later Lynch (1960, 1980) considered the regional dimension as a total visible environment, and Forman (1986) perceived it as the landscape ecology.



**Fig. 1.9** Metropolitan Cartography – Environmental Justice Protocol Map of Milan. V. Galiulo (Contin et al., 2021)

Today, we return to Lynch (1996) because we are interested in his question: how can we come up with a new model of the city that, by embracing the environmental issue, becomes part of a spatial phenomenon? We are interested in analysing the explanation of the city as a spatial phenomenon, which integrates the natural element, now necessary to obtain a model of sustainable development.

An investigation on ways of thinking about spaces that change as a study of the urban paradigm over time, able to define a series of mental and real maps where the highest scales imply the lowest scales, is necessary. We are developing the Metropolitan Cartography as a useful tool to define metropolitan urban paradigms that are more complex, concerning the cultural theme of urban Biography.

Within a definition of the new metropolitan paradigm, having understood that the critical threshold of growth has been reached, it is a matter of delivering the design of the metropolitan works. These must evolve the existing city patterns towards the scale of the net-city according to a paradigm that requires:

- strengthening citizens' personal-social actions (Right to the Lifestyle);
- being sustainable (Right to the Landscape/Environmental Justice);
- accepting a democratic principle (Right to the City/Social & Spatial Justice).

The skills we need to produce achieving this are:

- competence regarding the historical-geographical situation of the area: a survey on the strong geographical support point for the living (Febvre, 1980);

- competence concerning the moments-events that establish the broad present, i.e. the Biography of a city. The Biography of a city means how each culture has interpreted the role of the geographical situation (orography) as a constituent element of the city (Focillon, 2002);
- competence in choosing metabolic interventions of maintenance, substitution, and transformation, necessary for the growth/development of the settlement, whose current state has been produced by activating what has been preserved or invented in the territories of the past.

Architecture is no longer a real map for settlement orientation, with different shades, aimed at marking the differences between the set of landscapes that people had learned to recognise and live and, at the same time, had built. In the past, it was just the architecture of the city, which allowed man to elaborate an anthropological image through geometric construct semantics. The place known as living space was conceptualised through geometry and recognised, therefore, through its constructed forms. Nevertheless, we are now in a moment of passage, where catastrophic places of discontinuity and change are generated, in which the meaning of architecture and landscape is re-founded through the definition of a new inter-scalar formative trace that the Metropolitan Cartography must represent with new codes and signs.

## 1.8 Conclusion

### 1.8.1 *Bioresistances. Spatial Intelligence Mappings*

The word Environment and its relative concepts can help us to rethink the territory not in its legal meaning, but geographically and substantially through the search for its “intelligence”. Territorial Intelligence is a concept developed within the Sixth Framework Programme of the European Community between 2002 and 2006. In post-industrial societies, Territorial Intelligence is the science that aims at the sustainable development of the territories, and that has as subject the territorial community. In particular, the concept:

- links the multidisciplinary knowledge of the territories with their dynamics;
- strengthens the capacity of territorial communities to participate in their development in an equitable and sustainable way;
- improves the exchange of territorial information and disseminates its methods and tools of analysis using new technologies;
- promotes governance, decision-making processes and practices that improve participation and partnership and action-research that contribute to the equitable and sustainable development of the territorial community.

The concept underlines the contribution of intangible resources to overall development, allowing differences not to become an obstacle to the affirmation of these needs, but to underline the value of the territory’s heritage. Territorial Intelligence reconciles post-material values with those of the culture of industrial society,

supporting the development of territorial resources, and recognises the inherent qualities and uniqueness of the latter and makes their use attractive to heterogeneous “glocal” societies.

Some people oversee Territorial Intelligence that implements a political activity. They named it “bioresistance” from the consideration that resisting is first of all is right and then it is beautiful. Bioresistance starts from the recognition of the value of a common good that occurs when there is a community that recognises it. It is carried out through non-intensive agriculture that protects the landscape and communities. Safeguarding agriculture, a guardian of the territory, it fights for legality through the protection of sustainability and thus builds Democracy.

The term “bioresistance” is intended to describe a plurality of situations related, on the one hand, to environmental protection and, on the other, to the protection of rights and legality through concrete actions. “Bioresistance” is a project of the Italian Confederation of Farmers (CIA) which aims to highlight the great heritage represented by a particular type of agriculture: that agriculture which is aware of the concept of limit, time, the complexity of the environment works for the common good. Agriculture is an action of safeguarding rights and legality. Legality does not mean the abstract principle of the positive observance of laws but the constitution of a space where the rights of all are realised and applied, where people are citizens; an action to safeguard the environment, an act of protection of the territory, the landscape, biodiversity.

The term “bioresistance” is, therefore, intended to describe a plurality of actions that revolve around a “healthy” relationship with the territory. It shows that agriculture is not only an economic/financial action but also a practice of resistance to forms of illegality. It is also a resistance to standardisation (which is flattening and not egalitarian) of both culture and food, resistance to the violence with which natural resources are treated and managed, resistance to the disappearance of biodiversity.

A path capable of recalling and underlining the link between these agricultural practices and responsible citizenship; agricultural experiences that build and implement Democracy in Italy: companies that, perhaps without realising it, every day uphold the principles and values of the Republican Constitution by defending the common good of the land.

### ***1.8.2 Openings. For an Accumulation of Intelligence***

The challenge, referring to a possible Metropolitan Architecture and Landscape project, consists in defining the approach capable of activating new productive processes for collaborative metropolitan development. It takes advantage of heritage and culture to regenerate and accumulate local values to also connect them to the socio-economic sphere at other scales through participation and innovation. This type of accumulation of Intelligence is what interests us and is opposed to the contemporary situation which, on the contrary, sees the territory as being colonised and not accumulated. Investments and infrastructures that accumulate within the



territory are counted as densifications and not as accumulations. The specificity of today's city is a multipolar form of local growth/transformation that involves increasingly large areas based on the efficiency (performance) of infrastructure networks. The paradigm of the contemporary metropolitan city is no longer a polycentric model, but a network: the network city. This change is significant because it implies the need to address not only the network nodes and the infrastructures that make them accessible but also the space between the networks, which must be reconceptualised. That space is often a contested territory between new inhabitants, almost rural migrants, and the local host population. In other cases, it is the city itself that in its growth occupies the rural field expelling the local communities.

Over time, the relationship between the city and the metropolis has changed significantly. In order to solve the problem of the inclusion of different identities in the same (contested) territory, instead of the city-countryside opposition, we are interested in studying the form of a metropolitan region. In it, simultaneously, the mother city within a multitude of medium and small cities (places) is involved in a relationship, which is transformed locally.

We need intelligible and wise tools to diagnose the metropolitan context with the intention of projects.

Finally, the proposal for a metropolitan project is:

1. Not the territory but the environment.
2. Types of dynamics and integrated environment.
3. Space as a constructed space; the physical dimension as a starting point (without sociology only).
4. Architecture as built space is the tool to create the space, which is the capacity for acclimatisation and the cultural habit.
5. If it is the environment, the struggle is for its sustainability which is “bioresistance” and healthy agriculture for a Metropolitan urban pattern of green-grey infrastructure as a new metropolitan agorà.

## References

- Alcantara, S., Zamora, A., Alvarado, M., González, S. R., Herrera del Real, V. R., Itzel, D. M., Contreras, V., & Juárez Guerrero, J. A. (2018). *Trabajo Terminal para optar por el Diploma de Especialización en Diseño, Planificación y Conservación de Paisajes y Jardines*. Ciudad de México: UAM.
- Banerjee, T., & Southworth, M. (1990). *City sense and city design, writings and projects of Kevin Lynch*. Cambridge, Massachusetts (US): The MIT Press.
- Brenner, N. (2014). *Implisions/explosions: Towards a study of planetary urbanization*. Berlin: Jovis.
- Bruni, L., Becchetti, L., & Zamagni, S. (2019). *Civil economy and sustainable development*. Roma: Eura.
- Cattaneo, C. (1844). *Notizie naturali e civili su la Lombardia*. Milan: G. Bernardoni.
- Caniggia, G., & Maffei, G. L. (1979). *Lettura dell'edilizia di base*. Venezia: Marsilio Ed.
- Cavarero, A. (2019). *Democrazia sorgiva*. Milan: Cortina.

- Chrislov Bakargiev, C., & Vecellio, M. (2009). *Hito Steyerl. The city of broken windows*. Milan: Skira.
- Choay, F. (1972). *L'allégorie du patrimoine*. Paris: Seuil.
- Choay, F. (1986). *La regola e il modello*. Roma: Officina Edizioni
- Contin, A. (2004). *Atlante*. Milan: Maggioli Editore.
- Contin, A. (2016). *The narrative structure of the agro-urban metropolitan territory. The metropolis as Hypertext for the history of the XXI century: A network of middle cities as an operational topography*. Berlin: Springer.
- Contin, A., Ortiz, P. B., & Galiulo, V. (2021). THE “UNEQUALS” INCLUSION. Hotspot's Network Strategy for a Metropolitan Agriculture Revolution Eluding Informality. In M. Meninato (Eds.), *Informality and the City*. Berlin Springer: (ongoing).
- Corbusier, L. (1973). *Verso una architettura*. Milano: Longanesi. (Original work published 1923).
- Corner, J. (2006). Terra fluxus. In C. Waldheim (Ed.), *The landscape urbanism reader* (pp. 21–34). Architectural Press. [https://cdland4.files.wordpress.com/2013/06/corner\\_terra-fluxus1.pdf](https://cdland4.files.wordpress.com/2013/06/corner_terra-fluxus1.pdf)
- Febvre, L. (1980). *La terra e l'evoluzione umana. Introduzione geografica alla storia*. Torino: Einaudi (Original work published 1922).
- Focillon, H. (2002). *Vita delle forme seguito da Elogio della mano*. Torino: Piccola Biblioteca Einaudi (Original work published 1934).
- Forman, R. (1986). *Landscape ecology*. London: Wiley.
- Frampton, K. (1999). Megaform as urban landscape. In B. Carter (Ed.), *1999 Raoul Wallenberg lecture*. NY: The University of Michigan A. Alfred Taubman College of Architecture + Urban Planning and Kenneth Frampton.
- Frampton, K. (1983). Towards a Critical Regionalism: Six points for an architecture of resistance. In *The anti-aesthetic essays on postmodern culture* (Vol. 1, pp. 16–31). Seattle: Bay Press. [https://monoskop.org/images/archive/0/07/20150505143904!Foster\\_Hal\\_ed\\_The\\_Anti-Aesthetic\\_Essays\\_on\\_Postmodern\\_Culture.pdf](https://monoskop.org/images/archive/0/07/20150505143904!Foster_Hal_ed_The_Anti-Aesthetic_Essays_on_Postmodern_Culture.pdf)
- Frigerio, A. (2016). Facing rapid urbanization: A century of East African Urbanism. *Proceedings of HISTORY URBANISM RESILIENCE: Scales and Systems*, 17(6), 67–78. <https://doi.org/10.7480/iph.2016.6.1323>
- Geddes, P. (2015). *Cities in evolution*. London: Williams & Norgate. (Original work published, 1925).
- Giovannoni, G. (1995). *Vecchie città ed edilizia nuova*. Milano: Città studi (Original work published 1931).
- Gouverneur, D. (2016). *Diseño de nuevos asentamientos informales*. Bogotá: Universidad de LaSalle.
- Gregotti, V. (1966). *Il Territorio dell'Architettura*. Milan: Feltrinelli.
- Harvey, D. (2005). *A brief history of neoliberalism*. Oxford: University Press.
- Harvey, D. (2014). Cities or urbanization? In N. Brenner (Ed.), *Implosions/explosions: Towards a study of planetary urbanization* (pp. 52–68). Berlin: Jovis Verlag.
- Harvey, D. (2020, March 19). *Anti-Capitalist Politics in the Time of COVID-19*. <http://davidharvey.org/2020/03/anti-capitalist-politics-in-the-time-of-covid-19/>
- Hilberseimer, L. (1993). *Das neue Frankfurt 1926–1931* (G. Grassi, Ed). Torino: Dedalo Edizioni (Original work published 1929).
- Hilberseimer, L. (2012). *Metropolis architecture*. GSAPP Columbia University Graduate School of Architecture, Planning and Preservation. (Original work published 1920).
- Jedlowski, P. (2002). *Memoria, esperienza e modernità: memorie e società nel XX secolo*. Milan: Franco Angeli.
- Koolhaas, R. (1995). *Bigness, or the problem of large. S, M, L, XL*. NY: The Monacelli Press.
- Latour, B. (2017). *Facing Gaia. Eight lectures on the new climatic regime*. Cambridge: Press Cambridge UK.
- Lefebvre, H. (1991). *The production of space*. Oxford: Basil Blackwell.
- Lefebvre, H. (2014). From the city to urban society. In N. Brenner (Ed.), *Implosions/explosions: Towards a study of planetary urbanization* (pp. 36–51). Berlin: Jovis.

- Lynch, K. (1960). *The image of the city*. Cambridge Massachusetts: MIT Press.
- Lynch, K. (1980). *Managing the sense of a region*. Cambridge Massachusetts: MIT Press.
- Lynch, K. (1996). A theory of good city form. In R. Melai (Ed.), *Progettare la città. La qualità della forma urbana*. Milan: Etaslibri.
- Lynch, K., & Rodwin, L. (1958). A theory of urban form. *Journal of the American Institute of Planners*, 24(4), 201–214. <https://doi.org/10.1080/01944365808978281>
- Magnaghi, A. (2003). La rappresentazione identitaria del patrimonio territoriale. In G. Dematteis & F. Ferlaino (Eds.), *Il mondo e i luoghi: geografie delle identità e del cambiamento* (pp. 13–20). Istituto di ricerche economico-sociali del Piemonte.
- McGee, T. (2009). *The spatiality of urbanization: The policy challenges of mega-urban and Desakota Regions of Southeast Asia*. Proceeding of UNU-IAS 161. ISSN 1564-8427.
- McGee, T. (2014). The emergence of desakota regions in Asia: Expanding a hypothesis. In N. Brenner (Ed.), *Implosions/explosions: Towards a study of planetary urbanization* (pp. 121–141). Berlin: Jovis.
- Monte-Mor, R. L. (2014). Extended urbanization and settlement patterns in Brazil: An environmental approach. In N. Brenner (Ed.), *Implosions/explosions: Towards a study of planetary urbanization* (pp. 109–120). Berlin: Jovis.
- Muratori, S. (1967). *Civiltà e territorio*. Roma: Centro Studi di Storia Urbanistica.
- Ortiz Castano, P. B. (2014). *The art of shaping the metropolis*. NY: Mc Graw Hill.
- Ostrom, E. (2006). *Governare i beni collettivi* (G. Vetrillo, & F. Velo, Eds.). Venezia: Marsilio. Venezia: Marsilio (Original work published 1990).
- Padoan, D. (2020). *Niente di questo mondo ci risulta indifferente*. Rimini: Edizioni Interno4.
- Pollak, L. (2006). Constructed ground: Questions of scale. In C. Waldheim (Ed.), *The landscape urbanism reader*. NY: Princeton Architectural Press.
- Raffestin, C. (2003). Immagini e identità territoriali in territorio. In G. Dematteis & F. Ferlaino (Eds.), *Il mondo e i luoghi: geografie delle identità e del cambiamento* (pp. 3–12). Istituto di ricerche economico-sociali del Piemonte.
- Rogers, E. N. (1997). *Esperienza dell'Architettura*. (L. Molinari Ed). Milan: Skira (Original work published 1958).
- Rossi, A. (1978). *L'architettura della città*. Milan: Clup.
- Rowe, C., & Koetter, F. (1984). *Collage city*. Cambridge Massachusetts: MIT Press.
- Secchi, B. (1986). Progetto di suolo. *CASABELLA*, 520/52, 19–23.
- Sereni, E. (1961). *Storia del paesaggio agrario italiano*. Bari: Laterza.
- Shane, G. D. (2005). *Recombinant urbanism. Conceptual modeling in architecture, urban design, and city theory*. London: Wiley-Academy.
- Simondon, G. (1969). *Du mode d'existence des objets techniques*. Paris: Aubier – Editions Montaigne.
- Soja, E. W. (2000). *Postmetropolis: Critical studies of cities and regions*. Los Angeles: Blackwell Publishing.
- Tomassone, L. (2015). *Crisi ambientale ed etica. Un nuovo clima di giustizia*. Torino: Claudiana ed.
- United Nations. (2018, March 19). *World Water Development Report 2018*. <https://www.unwater.org/publications/world-water-development-report-2018/>
- Vidler, A. (2006). *Il Perturbante dell'Architettura*. Milan: Einaudi. (Original work published 1992).
- Viganò, P. (2008). Water and asphalt. The projection of isotropy in the metropolitan region of Venice. *AD Architectural Design*, 78(1), 34–39. <https://doi.org/10.1002/ad.606>
- Viganò, P. (2010). *Il territorio dell'urbanistica*. Roma: Officina edizioni.
- Wall, E., & Waterman, T. (2017). *Landscape and agency*. London: Routledge.
- Wall, E. (2019, 11–16). *Landscape citizenships*. (Conference presentation) Greenwich, University of Greenwich, UK.
- Zarza, D. (1992). Límites: Arroyo Culebro. Imágenes e ideas para una ciudad verde en el sur metropolitano de Madrid Región. *Arquitectura*, 293, 1–23. <https://www.coam.org/es/fundacion/biblioteca/revista-arquitectura-100-anios/etapa-1987-1990/revista-arquitectura-n293-1992>