Form and nature of the sustainable city

Or rather: to think of the city as *public good*

ABSTRACT. This paper pursues to argue a simple but not so obvious matter: the suggestion that in order for a city to be sustainable, it must become once again an environmental representation of public good. Architecture has always been an act of environmental modification. The modalities and quality of the undergone transformations are a consequence of the natural cultural image held by man. Today the idea of an "Ecological Paradigm" is asserting itself in contrast to the supremacy of a "Network Society". The framework outlined above requires a deep re-evaluation of principles and methods of architectural and urban design; especially it raises a fundamental question concerning the form and nature of the sustainable city. In fact, to think of the city in a sustainable way, means to affirm the existence of a social, environmental and economic system of interconnections, that become meaningful if we come back to think of the city as public good.

KEYWORDS: Sustainable city, Form, Nature, Modification, Design, Public good.

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In every civilization nature is what culture designates as such.
André Corboz

This paper pursues to argue a simple but not so obvious matter: the suggestion that in order for a city to be sustainable, it must become once again an environmental representation of public good. To support this thesis, references will be drawn to theoretical and conceptual reasons as well as to practical and operative ones; both of which will meet through a methodology that can integrate and synthesize the points of view of both architectural and urban design.

1. Introduction on the relationships among man, architecture and nature

Architecture has always been an act of environmental modification. The modalities and quality of the undergone transformations are a consequence of the natural cultural image held by man.

It is known that man is not biologically equipped to survive in the wilderness. According to Arnold Gehlen and parallel to the point of view of Philosophical Anthropology, the human being is recognized as 'deficient' and inadequate because it lacks the level of specialization necessary to acquire a specific positioning inside the world. Man's actions, therefore, have always been technically oriented, aimed at producing survival conditions through means of a continuous modification of the natural environment.

Umberto Galimberti has drawn reference to Gehlen's arguments in his book *'Psyche and techne'* (Galimberti, 1999), while also further developing the idea. He writes: *"... technique isn't born as an expression of the human 'spirit', but as a 'remedy' to his biological insufficiency ... in fact, unlike animals who live in the world stabilized by their own instinct, man, because of the lack of his instinctual equipment, can live only thanks to his action ... in this sense we can say that technique is the essence of man ..."*

The way in which man 'acts technically' within the environment is the result of his vision of nature. This vision, or 'cultural image', has experienced profound changes throughout history and across different places, thus changing the man-nature relationship founded on this ideological value. In ancient times, nature was an unknown and dangerous element, evolving into a severe and threatening mother. Later, it became a resource of use or an object of waste receptacle. According to certain cultures, it is considered an unchanging metaphysical entity, while according to others it is the *"revelation of the order ... of the creation."*

According to Umberto Galimberti, this variety is polarized in two concepts: firstly, the ancient Greek conception of nature as a "dwelling place" of men and gods; secondly the Judeo-Christian conception of nature as a "domain field" of human action that has influenced the ideology of modern science. According to both points of view, nature remains outside the domain field of ethics and, therefore, of human responsibility.

Different cultures, and the visions of nature they produce, consequently dictate the manners and quality of environmental modifications that man accomplishes through technique.

The construction of the primitive shelter, of the house and the city, together with the harvesting of food, are perhaps the main actions of modification; even before hunting or agriculture, these actions were primitive and radical modifications of the state of nature – original acts by which humans began to inhabit the world. The

cultural idea of nature has always been a fundamental benchmark in order to define what architecture is – to build theories and to guide practices. During the development of Western civilization, although never really succeeded, this was expressed through the attempt to make a philosophical distinction between the identity of nature and the identity of artifice and culture.

The specific concept of nature, particular in every culture, has been a constant reference to architecture, with only a moment of exception when in the first half of the 20th century, the avant-garde movement and architectural culture (except few of them such F. L. Wright, Le Corbusier and A. Aalto) clearly rejected any kind of reference to nature.

The relationship between architecture and nature becomes once again important for the architectural and urban design that pays attention to new forms determined by the emergence of the ecological crisis and the rise of environmental movements.

Facing the real possibility that all of man's technical actions will eventually lead to the extinction of species and the destruction of the ecosystem, the fact that the different visions of nature, produced by Western culture, are outside the ethics domain, makes the formulation of a different cultural image of nature problematic but necessary, compatible with the need to extend the concept of responsibility also towards the relationship between man and environment.

The emergence of the *Ecological Paradigm* (Capra 1982, 1996; Morin, 1980) may be interpreted by these terms. It is an idea based on a relational and environmental vision that considers phenomena as strongly interconnected within a reticular correlation system that operates in different scales and on several relational levels. According to this, Fritjof Capra writes in 1996: *"We could define the new paradigm as a holistic vision of the world, considering the world as an integrated whole rather than as a series of separate parts. We could call it an ecological vision also, if we bestow a meaning broader and deeper than usual on the adjective 'ecology'. A deep ecological awareness recognizes the fundamental interdependence of all phenomena and the fact that, as individual and social beings, we all affect (and ultimately we depend on) the cyclic processes of nature."* The hypothesis, formulated by Capra and drawn on by Manuel Castells, is that in recent years, this particular way of conceiving the phenomena has begun to assume the contours of a new paradigm in science and culture, which today is opposed to the conception of their spatial and temporal 'informational paradigm' of network society.

2. Considering form and nature of the sustainable city

The framework outlined above requires a deep re-evaluation of principles and methods of architectural and urban design; it especially raises a fundamental question concerning the form and the nature of the sustainable city.

The relationship between urban form and its constituent reasons is very important, because the urban form is experienced through its spatial configuration – the clearest datum of the relationship between the city and its inhabitants.

When the nature of an urban organism tends to change due to its consideration for new ethical and practical reasons affiliated with the emergence of environmental issues, the design disciplines are brought to a questionable level in regards to the innovative effect on the urban form.

This is true provided we agree on a concept of form that has surpassed the functionalist axiom 'form (ever) follows function', accepting the interdependence

among constitutive reasons, morphological issues and space use modalities expressed by the relationship between formal structure and the concept of function.

The first step could consist in trying to overcome the eco-functionalist approach, which focuses almost exclusively on the understanding and management of various aspects of urban metabolism, in order to integrate it with a vision that negotiates the form, or rather the forms, that may be determined by various proposals in terms of urban sustainability.

Discussing the relationship between nature and form of the sustainable city means therefore to consider the close relationships among the communities' actions and economic forces, the regulatory function of public administration, and the implicit spatial paradigms involved. In this framework the shape of the settlement is not the simple result of complex processes, but rather an actor of the process itself.

Urban space morphology along with its dimensional relationships of distance and proximity, the balance between empty and built-up space, the design quality of open and built-up space, as well as that of infrastructure, roads, pedestrian and cycle paths – all affect directly the environmental and ecological overall characteristics.

Therefore it isn't arbitrary to make a hypothesis about reasoning on sustainability that considers the spatial morphological structures from the intermediate scale (urban blocks, neighbourhood units, and districts), in order to understand the implications in terms of urban form at the scale of the whole settlement.

3. Recurrent topics and formulations

To begin to investigate this topic, it is convenient to try to put in order some issues that we are shaping up as constant themes. In fact it is possible to find them in different positions on the subject and in multiple design-proposals.

The renewed relationship between nature and architecture, informed by the emerging ecological paradigm, brought back to the centre of the debate some concepts that are present in different ways in the discussion of our cities' destiny.

Inside these concepts it is intended to emphasize here the role of the theme of the **limit,** expressed differently throughout the debate (limit of resources, growth limit, limits of the settlements). Inside disciplines that concern the space, but not limited to them, this theme is closely related to a **systemic view** referred to both environmental and economic aspects as well as social and territorial ones.

The fundamental characteristics of systemic thinking that clarify the connections to the ecological paradigm, may be expressed by two approaches: 'contextual thinking' and 'process thinking'. The first is expressed by the shift of attention from the parts to the whole, and from the object to the relationship. The second consists of taking into account each structure as a manifestation of 'underlying processes'.

Along with these theoretical and conceptual themes, we are witnessing the emergence of some figures or formal paradigms that support the formulation of hypotheses for sustainable settlements.

The issue of *urban density* of the built up space and the figures of **palimpsest** and **network** configurations are references in order to propose some structure to the territory, while fitting into this debate by being suggested as operating principles; these are also partial answers to the problem of urban sprawl, which is widely recognized as unsustainable and has now become the recurrent landscape of the post-industrial age.

In recent decades, the environmental movement, in its many forms, has been highlighted as one of the key aspects of ecological thought of the radical revision of the concepts of **space and time**. In particular, it should be noted that in order to refer the project to both present and future generations, one should consider recovering the idea of 'longevity' in opposition to the instantaneous time of the *Network Society*.

The formulation of the idea of 'the long now', or glacial time, is due to the work of Stewart Brand (Brand, 1999), S. Lash and J. Urry (Lash and Urry, 1994), and it consists of the concept that there is a relationship of a structured long-term evolution between humans and nature. This relationship is based on the interaction among all forms of matter. The life of every being, therefore, has to be measured and harmonized with that of future generations, to consequently reorganize institutions, society and production.

The dialectic of space and time has inspired designers and planners who have based their arguments and their critical suggestions on the contrast between practical appreciation of the past, often carried out in an ideological and regressive way, and projections into the future city, often uncritically exalting any technological innovation. Along this aspect, the basic themes of these movements put in evidence the relationship between the value of **local context** as opposed to the tendencies of globalization, and a parallel rethinking of the relationship between the **small-scale** and the **large-scale**. Finally, a further element of distinction is related to the theme that opposes the supporters of low-tech approach against those of high-tech approach.

As an example we can mention the neo-traditionalist movement of 'New Urbanism', born in the U.S. in the 90's, which had a European equivalent in the work of Rob and Leon Krier brothers, and other initiatives such as the 'British Urban Village Campaign', which began in June of 1992, or the movement of the 'Landscape Ecology', born between the 80's and 90's.

4. Research hypothesis

Due to the dialectical relationship between past and future, and the progressive or regressive modalities through which the debate unfolds, it is possible to offer a hypothesis contribution by opening a field of research which operates a critical re-reading, non-regressive, on some experiences of the recent past. These have been selected from those that have developed the themes according to a perspective based on the following two principles: firstly, the harmonious relationships respectively between man and environment, inhabitants and cities, and open spaces and built up spaces, that anticipate many of the instances of the debate on environmental sustainability. Secondly, the issue of public space and housing spaces as fundamental urban places, that anticipate the questions raised recently on the city as a common good and that, more generally, refer to themes of social sustainability.

Through the resumption of the theme of limits and the concept of systemic relationship, it is possible to make historical-critical research on the roots of sustainable urban design.

In order to do this we must refer to those studies that, between the second half of the 19th century and the first half of the 20th, led to the development of urban models characterized by the centrality of the relationships among man, nature and architecture (Linear City, Garden City, Cité Industrielle, Ville Radieuse, *Les Trois*

Etablissements humains, Broadacre City), which in different ways have proposed a modeling or a specification of the limit through a systemic perspective.

It is possible to interpret some of these as attempts to plan a harmonious relationship which could work on several levels: on one hand, on a level that negotiates the relationship between the human settlement and its host environment, and on the other hand between political and social aspects as well as philosophical-spiritual components of life.

The evolutionary dynamics of urban events that came after the profound changes determined by the emergence of capitalist and post-capitalist society, may be read by looking at the morphologies of their settlement, considered exemplary in the way that they control, through architecture, the relationship between space and time and also by the way that they control the research for new harmonic balances of territorial structures.

We might consider from this point of view the proposal for the Linear City (starting from Arturo Soria Y Mata's book of 1880), developed in architectural and urban research during the end of the 19th century and the first half of the 20th, in the work of some protagonists of the Modern Movement (Le Corbusier, Hilberseimer, Neutral, Sert) and in some members of the Soviet Constructivism (Milyutin, Leonidov, Ginzburg and Barshch). It is presented as an exemplary case because of its contemplating (and almost paradoxical) particularity, its structural principle and formal and functional articulation, and finally both its concept of virtually unlimited growth (and therefore of development) and its control of form (and therefore of 'limit'). In this sense, Le Corbusier's design of Les Trois éstablishments Humains (1945) is a paradigmatic design that takes in account the linear settlement issue once again, in order to build a true and genuine territorial ecology ahead of its time. In order to do so, the project put side by side the settlement design and the infrastructure design, imaged together as an integrated and multiple ribs, while considering the protection and resettlement of the agricultural heritage.

5. Conclusion: the city as a *public good*

The dialectical opposition between *Ecological Paradigm* and *Network Society* refers to the opposition between economic and ecological thinking (Mattei, 2011), or between a quantitative and individualistic conception. The latter conception refers to a competition between individuals and hierarchical communities as well as a holistic-systemic idea that recognizes the centrality of ecological communities linked to a network of symbiotic relationships.

All the considerations made so far along with the efforts to define sustainable urban models remain futile without the clarification of a further necessity. That is to recognize and promote the formation of a social and cultural model of ecological and community characteristics, entirely consistent with–the idea of the Ecological Paradigm, and alternative to the individualistic and competitive model.

We are also dealing with the necessity to integrate the anthropological vision that conceives man while facing nature unprepared, addressing the difficulties through the practice of technique, with the re-evaluation of the role of community (since man does not survive alone) and collaboration among human beings.

The idea of a community expressed in this way implies a different idea of *time* - extended to an intergenerational concept - and a different management of *space* - retrieved by the control of citizens by the re-launching of its public dimension.

As argued by Ugo Mattei in his recent book '*Beni comuni – un manifesto*': *"consider an entity (water, universities, cultural heritage, land rent, labour, information …) as a 'public good', with the aim of its government and political ecology, that has the spirit of a radical 'turnaround' …"* This reasoning can be extended to the dimensions of the city as well, especially when researching its possible developments due to the emergence of the environmental issue.

As it is, to think of the city in a sustainable way means to affirm the existence of a social, environmental and economic system of interconnections that become meaningful if we return to think of the city as a public good.

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