

From expansion to sustainable growth thanks to the ecological transformation of the existing

Stefano Aragona*

Issues at stake

The territory and the modern city have been built according to localization needs, criteria, technologies and materials of very high efficiency and effectiveness. But both of these are not “static”, i.e. they vary both in relation to the change in the functioning of the space and in the duration of the materials.

After decades of expansion and of infrastructures the nations with more ancient industrialization have long since stopped this trend. This, on the one hand, constitutes a potential benefit in terms of environmental and social sustainability given the obvious limits of development of the industrial city declared since 1972 with *The Limits to Growth*¹, limits that highlight the exhaustion of the industrial city paradigm². But at the same time, it represents an opportunity and a threat. Opportunity to maintain or transform, with care and attention, the historical, social, urban and architectural values of territories and cities, that is morphology, infrastructures, building types: a structure that corresponded to a social and spatial functioning that had long since changed but that was among the reasons for the formation of the landscape, result of the relationship between human activities and nature as recalled in the *European Landscape Convention drawn up in Florence*. Choices that increasingly involve the systems of the green and water, both as a resource and as a problem, which have become, since some decades, essential elements of urban quality³. But the threat is that all this depends on criteria that are indifferent to the local context and the well-being of the inhabitants and governed by powers and economic choices only, plus having an increase in various types of risks. It will be highlighted how territorial and urban policies can, using an *integrated ecological approach*, produce different development scenarios that are environmentally and socially sustainable.

Territory structures to rethink

Development that, especially in our country, had its heart in the combination of the expansion of residences and private mobility: in Italy most of the infrastructures, primarily the network ones, have chased the building developments. This in an overall vision that aimed at a continuous, growing, quantity of real estate, and at means of movement on two, four and more wheels, to be produced and more and more land to be built. So roads and motorways, viaducts and bridges were built to allow access to the built areas, mostly in an anarchic way (legal and often illegal), since the 1950s⁴.

It is now a few decades that we are witnessing processes of de-industrialization and the arrest of population growth. And that, basically, the classic "home-work" model has lost its utility both for the modification of the characteristics of the job itself, with the breaking of most of the "synchronies" between space and time (Ernesti, 1995) but above all for its precariousness and, thus, creating a structural instability in the relationship with the residence⁵. That means that many of the existing infrastructures, thought to be "at the service" of productive activities may no longer have the utility originally thought. This consideration opens up many questions. One of the most relevant is relative to how to behave when an infrastructure no longer responds to the original economic needs but to residential ones (and possibly to related services) that were born connected to the previous productive activities.

¹ Report commissioned by Aurelio Peccei, President of the Club of Rome, at the MIT in Boston, Club whose 50 years since its foundation were remembered on 17 and 18 October 2018.

² Borrowing the term used in 1962 by Khun talking about scientific revolutions.

³ With the DM 1444/68 the green appears as a quantitative obligation, but for some time the theme of the green is becoming more and more a relevant component of the quality of the space.

⁴ On the other hand, the philosophy of the urban planning law 1150 of 1942 was the result of the need to build ever larger and more modern cities and which, especially after the Second World War, could welcome the work force for the many nascent industries. It is these that at the beginning of the 1960s realize the so-called “economic boom” and these are the years in which the “baby boom” is also created which, by age group, will be associated with the lack of nursery schools and schools primary and then secondary. Those that will later be called public services have always participated significantly in the structuring of the city as Clementi recalls in *Pianificare i servizi (Planning the services, 1983)*.

⁵ In the course of thirty years we have been witness the phenomenon opposite to that of the 1960s with negative birth rates and the closure of school complexes that became superabundant for requests.

Given the above, there is also a great opportunity to change the current prevalence of road transport over the iron one. Above all this when dealing with local public transport which has seen a drastic downsizing since 1993⁶, while the construction of high-speed lines began. But if in the few urban poles – when compared to so many medium and small ones that are the majority of the Italian ones⁷ – reached by this there is not a valid distribution network, while “approaches those who are far away” it “moves away those who are close”. Next to the downsizing of the networks there has been also that of services, that is trains and frequencies, which in fact creates other negative effects, thus stimulating the growth of transport by road and giving a further element for the abandonment of the internal areas and the many small or very small centres that draw the Italian landscape. All this with a growing gap between the north and the south both in the construction of new infrastructures and their maintenance.

It has also to be stressed that all the infrastructures have been designed for transport capacity that is largely exceeded, therefore with much higher frequency of use. Thus cutting the connections and services on iron means further loaded those on rubber.

It is then really surprising to “discover” how technically very daring choices, which emblematic example is the Morandi bridge in Genoa, may have been built without attention to the local context. How was it possible for pylons to literally cut houses? How was it possible to have this infrastructure, practically regardless of the residences and work activities, and that produced that monstrous picture?

The epoch of realization of these infrastructures was that of the great expansive momentum and the settlement reference came from the city proposed by North America, USA and Canada. Thus in the Rome PRG of 1962 an Equipped Urban Axis was planned, the Oriental Directional System and, still in the Capital, the East Bypass is realized. All choices that alongside the idea of expansion⁸ have that of the centrality of private road transport. Stressing that the overall picture characterizing the formation of the Italian city from the Unity onwards, with a growing surge from the second post-war period, has seen mostly the infrastructures “chase” the building development, first of all the residential one. Coming to “solutions” such as those of the Morandi bridge, now cited to solve the need to connect the productive activities that were being built and which in part are still present and of great importance, such as the many linked to ports.

And talking about houses refers us to the question of real estate, that is first and foremost residential. From the second post-war period the territory has been increasingly cemented. Legally or not, planned or not, the idea of development coincided with that of building expansion. With the use of construction techniques and materials with a non-indefinite life span. Also if it was wished to omit the recent studies that show the loss of the technical characteristics of the materials, the lack of ordinary maintenance has weakened the safety conditions of the constructions: as it seem the case of the bridge tragic recent collapse.

But talking about houses also means talking, rethinking, mostly doing extraordinary maintenance, securing the large amount of urban equipment, hospitals and schools in the first place, then barracks, courts, etc.: they have been constructed in ever larger way taking in account of the increase in population over time. Although, as mentioned, there is a situation of demographic decline, and meanwhile the needs linked to the third age and to the diversification of the demand have grown. Considering, moreover, the historical and architectonic value that characterizes many of the buildings and areas in question whose demolition or transformation would have a negative impact regarding the identity of the place: the example of the Forlanini Hospital in Rome and the creation of Committees of citizens for its defence, at least in maintaining both public use and forms of it, is emblematic of this framework.

So there are great opportunities to propose broad strategies to rethink the contemporary city, that is, to hypothesize a way to plan and design ecologically. Roberto Morassutt, Councilor for Urban Planning in Rome from 2001 to 2008, summarized this occasion well, talking about the question of how to rebuild in the area of the collapsed bridge in Genoa on the occasion of the presentation of the Master's Degree Course in Urban Regeneration. Focusing attention not so much on the bridge to be rebuilt but above all on how to recover the Polcevera river area and find other locations for homes and the many economic activities under the bridge. This means a program of displacement for both the residents and production spaces, definitived or temporary. Similar to what was realized in Rome with the *Giustiniano Imperatore Urban Requalification*

⁶ The cut of the so-called “dead branches” in the railways already criticized (Aragona, 1993) to the XIV Scientific Conference of the Italian Association of Regional Sciences.

⁷ Note that today over 60% of urban centers are under 5,000 inhabitants.

⁸ For an expansion of the population expected in 5 million inhabitants in a few decades while the current one is just under 2.9 of people.

Program in the XI Municipality of Rome. Demolition and reconstruction experience according to sustainability criteria of buildings in an area built in the 1960s close to the Via Cristoforo Colombo, before called Empire street incorporated in the broader urban area of the EUR (Aragona, 2011). From the moment of the first signs of danger, in 2001, to the delivery in 2011 of the new apartments 10 years have passed.

The situation now described it is aggravated by the increased risk due to the change in the relationship with nature. That is because the buildings have been constructed in areas of high fragility⁹ and this is growing with the modification of climatological conditions. Taking into account these changes, it is absolutely necessary that action be taken to increase the resilience of both i.e. artefacts and the environment. That is, designing or transforming the existing according to local conditions, taking them as suggestions and no longer considering them as mere constraints.

This is what Vitruvio suggested and that Salvatore Settis recalled, in 2014, in his *Lectio Magistralis*, receiving the honorary degree in Architecture. *Wisdom*, not by chance the name of the University of Rome born in the '300, consists in this. In other words, to overcome the “technological” vision in favour of “cultured technology” as R. Del Nord reminds us since 1991.

More governments have allocated funds to the paper for securing the territories but those actually spent are always very few “... *the Ministry of the Environment, in 2013, estimated 40 billion euros of the need to remit Italy to a reasonable level in terms of hydrogeological instability. While governments are changing, the answer to this need therefore remains largely insufficient, as we noted on these pages already in 2015 (about "first time"), during the presentation of the National Plan against the hydrogeological instability wanted by the Renzi government. At that time the Plan was presented by the #Italiasicura mission structure: in May 2017 there were 1,108 interventions planned by the government against hydrogeological instability, but up that date of the available 29 billion euros had been spent just 4.86% of the total ... there are 7,275 (or 91% of the total) municipalities at risk of landslides and/or floods*” (greenreport, 2018). Giving substance to these steps means not only decreasing the hydrogeological risk but also building professionalism and technical skills that are increasingly essential to face the aforementioned climate change. This twofold aspect, that is, putting into safety and planning/building of modes of “allied” anthropizations with the nature and formation of operational figures, constitutes an essential part of the *ecological approach*.

Nature enters territorial and urban planning

The arguments in discussion also concerns issues related to the theme of greenery, of which emerges the ever greater need for management, after it since several decades it entered into the themes of planning and construction of the city. Just as, also due to the modified climatic conditions, another relevant argument is that of water considered as a resource and, at the same time, as risk.

These two elements must be considered in an integrated way since the conditions of well-being, ie of the microclimate, derive from the relationship between temperature and humidity, whose “outcome” is the perceived temperature. Elements that are strictly dependent on the presence or absence of vegetation and how much water is locally present. And if it is absorbed, or not, by the surfaces and how quickly this happens.

Another important component is the wind that can strongly improve or worsen the above conditions, just think of the so-called “wind chill” whose presence significantly lowers the perceived temperatures.

All of these components did not participate as “protagonists” in the construction of the Italian city. Green has been inserted as a “number” by standard, more or less high according to the Regional Urban Laws or by indications, forecasts or prescriptions of the Plan. But there was no special consideration about the new “requirements” whatsoever when the trees in modern cities – that were under construction – were planted, and the same it was in the previous nineteenth-century towns. Roads of great importance such as the Via Cristoforo Colombo in Rome, a major thoroughfare in the EUR area and of great importance because it unites the Via del mare with the area just before the Colosseum, has in many sections Mediterranean pines.

With the passing of the decades the roots of these magnificent trees have grown in a very important way, on the other hand it is in their nature to do so and this is creating a serious dangerousness in following that path.

⁹ Recalling that the Risk is a dependent function of the hazard, that is from the geomorphological conditions – mostly given by the history of the places but that can be aggravated by the action of the sound such as deforestation, covers of rivers, etc. –, from the vulnerability or from the urban morphology, from the building typologies and constructive and material modalities, having the construction period as a relevant element, and from the exposure that is from the settlement density, from the presence of historical-architectural assets, of network or punctual services such as hospitals, schools and other public or private places of public function.

Taking into account the risk situation, moreover that will increase in the absence of “contrast” actions, recently the Mayor has assumed to bring the speed of the road axis to 30 km per hour.

But the theme also arises in the oldest parts of the city. In many areas such as Prati or Monte Sacro, trees planted many decades ago with their radical plant are occupying both the roadway and the pavement, making it difficult even to walk. Note that it is the same maintenance operations of the roads and pavements that often create difficulties because the performance of such works often involves cutting off parts of the roots.

Taking note of the relevance that, in a more and more significant way, the green is having in 2013, Law 10 is issued, *Regulations for the development of urban green spaces*. Followed in 2017 by the *National Green Urban Strategy* whose full title is *Resilient and heterogeneous urban forests for the health and well-being of citizens* and by *Guidelines for urban green management and first indications for sustainable planning*. Documents both drawn up by the Committee for the development of the public green areas of the Ministry of the Environment and of the protection of the territory and the sea. The documents now cited in many passages combine the theme of green with that of water, taking into account the close relationship that associates the two elements for the reasons highlighted above. The *Plans of the Green* are requested for the Municipalities over the 15,000 inhabitants for which, first of all, it is necessary to know the status quo. So the starting point is that of cataloguing, tree by tree with the construction of a database, a long, difficult and expensive operation.

And after said all that, it requires remember the serious problem linked to the enormous lack of personnel destined to manage urban green spaces and more. In an investigation by Repubblica, recalling the blockage of recruitments of these years, A. Mori, who was in charge of the Green public service in Rome, highlighted “.., here in Rome the blockade started earlier, in fact there are no hires since 1990, and of the 1800 employees of the Garden Service present in 1980 today remained about 250 units, with an average age that far exceeds 50 years ”... While “... In Rome in the 80's there were 2 thousand hectares of public green, half of now ... these workers over fifty, the last ones graduated by the Gardening School.. when I see them climb on the pruning baskets, maybe at twenty meters high, I have some fear. It is true, however, that in Rome in 2004 there was a race to transform gardeners into administrative personnel, so on the field there were 270 fewer people. This led to the opening up to external tenders, very often for direct assignment, a mechanism that allowed the Mafia Capital system to establish itself also in this sector (Cecioni, 2016).

The ecositemic services (ISPRA, 2017) fall within, embrace, many of the things mentioned so far. They can be considered a sort of contemporary vision of the “Civic Uses2. In fact, they too are present in the documents previously mentioned of the Committee of the Ministry of the Environment. Above all because it is in their nature to consider in an integrated way the natural components and the anthropic aspects. Indirectly linked to them, but of great importance, there is the vast theme of the re-naturalization of spaces, river auctions, canals that over the decades have been covered, intubated, narrow, occluded arches of bridges, to give space to the buildings ignoring all this and so enormously increasing the territorial fragility and lowering the resilience of the places i.e. the ability of these to respond flexibly, resisting, to atmospheric events.¹⁰ (Fig.1).

Final cues: management and maintenance of the space

It is therefore necessary to start a different philosophy in considering the territory and the cities. We need to plan to build sustainable scenarios, both environmentally and socially. Despite the difficulties linked to the growing lack of conventional social and economic points of reference as highlighted above. But acting in the short and medium term is an urgency that can no longer be postponed.

Thus it is essential to carry out the control and maintenance activities of the infrastructures and of the buildings and the identification of specific responsibilities. As many parties are arguing, the former should return to public hands since they can be assimilated to public services for which the main objective is social efficacy and not technical efficiency. On the other hand, the private sector aims to make a profit by sacrificing other elements such as reliability or security: it is no coincidence that even in Great Britain, the home of liberalization and privatization, we are turning back in some sectors such as the railways to get them back into the State activities¹¹.

¹⁰ Tansi, the Head of Civil Protection of the Calabria Region until the last months of 2018, CNR geologist, has for years been claiming that ducted rivers are a terrible threat. (Caridi, 2018).

¹¹ So recently not only the Labor Party of Jeremy Corbyn but also Prime Minister May in 2018 was thinking of renationalising the East network after the North one (Kirby, 2018) due to the serious inconveniences and accidents that have occurred. (Editorial, 2018).

These considerations highlight how, in the contemporary city, the management aspect of the space, of the infrastructures and of the services that represent its backbone takes on more and more importance and will take on more and more of it.

It should still be pointed out that the director of the transformations we are talking about must be the public subject. And therefore the policy must return to play an active role and no longer be in the service of the economy. After more than 35 years of experimenting of “free market” both in the realization and management of space and services, the results have been not good. If we aim to improve, or not worsen, the well-being of citizens and to structure material such as transport, and intangible services, spatially more equitable and effective. In other words, territorial and urban policies are needed that lead, with the participation of the inhabitants, towards sustainable, ecological scenarios. Certainly not proposing new building amnesties¹² but facilitating the performance of administrative practices related to the government of the territory that are the responsibility of the Local Authorities. This through “ad hoc” funding for the recruitment, even temporary, of technical personnel for this purpose, considering – as mentioned – the block of the recruitments that has significantly weakened the Municipalities¹³.

In all that has been written here, in order to give effectiveness to the suggested indications, it is essential that information, listening and involvement of the populations, the local ones in the first place, have a great deal of space. On the other hand, if this is not achieved then dissent manifests itself democratically or not.



Figure 1– Genoa Ponte Morandi; Rome, East Bypass; Rome, Montesacro, trees and traditional “big nose” fountain on sidewalk
(Source: from the left Huffington Post, 2017, la Repubblica, 2016, Aragona, 2018)

Note

* Department of Heritage, Architecture, Urban Planning – PAU, University *Mediterranea* of Reggio Calabria, saragona@unirc.it

Bibliography

Aragona, S. (1993), “Infrastrutture di comunicazione, trasformazioni urbane e pianificazione: opzioni di modelli territoriali o scelte di microeconomia?” in Atti della XIV Conferenza Scientifica dell’Associazione Italiana di Scienze Regionali, vol.2, Bologna

Aragona, S. (2011), “Progettare città senza petrolio significa riprogettare la città ‘tout-court’” in Moccia F.D. (a cura di) *Città senza petrolio*, Atti VI Giornata di Studi INU 2011, Sessione “Il progetto urbano”, Edizioni Scientifiche Italiane

Caridi, P. (2015), *Le 7 fiumare che fanno tremare Reggio Calabria. L’esperto: “hanno intubato tutto, sarà un disastro”* in <http://www.meteoweb.eu/2015/02/7-fiumare-fanno-tremare-reggio-calabria-lesperto-intubato-tutto-disastro/403232/> (ultimo accesso 27 agosto 2018)

Cecioni, A. (2016), *Il verde pubblico è sempre più marcio*, in http://inchieste.repubblica.it/it/repubblica/rep-it/2016/05/25/news/il_lungo_addio_al_verde_pubblico-139666516/ (ultimo accesso 5 ottobre 2018)

Ciafani S. (2018) *Condo Parla Legambiente* in <https://www.facebook.com/agorarai/videos/2230588540509410/> (ultimo accesso 31 ottobre 2018)

Clementi, A. (1983), *Pianificare i servizi. Problemi e tecniche dell’intervento urbanistico*, Gangemi, Reggio Calabria – Roma

¹² How could do the yellow-green government that took office in mid-2018. (*greenreport*, 2018).

¹³ Issues highlighted and proposed by Stefano Ciafani, general manager of Legambiente, in the Agora broadcast (2018) in the live broadcast from Piazza del Parlamento where a demonstration was taking place against a feared building amnesty.

Club of Rome, (2017), *50th Anniversary conference of the Club of Rome*, Rome, October 17-18

Del Nord, R., (1991), "Presentazione", in (a cura di) Mucci, E., Rizzoli, P., *L'immaginario tecnologico metropolitano*, F. Angeli, Milano

Editorial (2018) *This latest rail chaos will deepen the well of anger that is fuelling talk of nationalisation*, in <https://www.independent.co.uk/voices/editorials/rail-chaos-govia-thameslink-southern-great-northern-timetable-changes-nationalisation-privatisation-a8362161.html#r3z-addoor> (ultimo accesso 15 ottobre 2018)

Ernesti, G., (1995), *Tempo pubblico e tempo della soggettività: disciplina e società oggi*, in *Urbanistica* n.104

Greenreport.it *Dal governo «subito 50 milioni di euro» contro il dissesto idrogeologico, ma servono 40 miliardi* in <http://www.greenreport.it/news/clima/dal-governo-subito-50-milioni-di-euro-contro-il-dissesto-idrogeologico-ma-servono-40-miliardi/> (ultimo accesso 30 ottobre 2018)

Huffington Post "Non c'è problema". Così rispondeva Autostrade sulla stabilità del Ponte Morandi un anno e mezzo fa in <https://it.notizie.yahoo.com/non-c-è-problema-064600366.html>

ISPRA, I Servizi ecosistemici in <http://www.isprambiente.gov.it/it/temi/biodiversita/argomenti/benefici/servizi-ecosistemici> (ultimo accesso 9 ottobre 2018)

ISPRA, I Servizi ecosistemici in <http://www.isprambiente.gov.it/it/temi/biodiversita/argomenti/benefici/servizi-ecosistemici> (ultimo accesso 9 ottobre 2018)

Khun, T. S. (1962, 1970), *The Structure of Scientific Revolutions*, Chicago University Press, Chicago, tr. it della II ed., (1979) *La struttura delle rivoluzioni scientifiche*, Einaudi, Torino

la Repubblica Roma.it *Roma, dalla tangenziale Est alla Magliana: viaggio tra i ponti e i cavalcavia della capitale* in https://roma.repubblica.it/cronaca/2018/08/17/foto/roma_dalla_tangenziale_est_alla_maglia_viaggio_tra_i_ponti_e_i_cavalcavia_della_capitale-204295827/1/#1 (ultimo accesso 15 ottobre 2018)

Legge 10/2013 *Norme per lo sviluppo degli spazi verdi urbani*

Meadows, H.D. (et al.) (1972), *I limiti dello sviluppo*, Club di Roma, Mondadori, Milano. Meadows, D.L. (et al.) (1972) *The Limits to Growth*, Universe Books, New York

Ministero dell'ambiente e della tutela del territorio e del mare, Comitato per lo sviluppo del verde pubblico *STRATEGIA NAZIONALE DEL VERDE URBANO. Foreste urbane resilienti ed eterogenee per la salute e il benessere dei cittadini*, in file:///C:/Users/Stefano/Documents/Piani%20del%20verde/strategia_verde_urbano.pdf (ultimo accesso 1 ottobre 2018)

Ministero dell'ambiente e della tutela del territorio e del mare, Comitato per lo sviluppo del verde pubblico (2017), *Linee guida per la gestione del verde urbano e prime indicazioni per una pianificazione sostenibile*, in http://www.minambiente.it/sites/default/files/archivio/allegati/comitato%20verde%20pubblico/lineeguida_finale_25_maggio_17.pdf (ultimo accesso 14 ottobre 2018)

Morassutti, R. (2018), Seminario Inaugurazione CdL Magistrale *Architettura-Rigenerazione Urbana*, Dipartimento PDTA Sapienza, 22 ottobre

Municipio XI, *Programma di riqualificazione dell'ambito Giustiniano Imperatore*, Comune di Roma

Kirby, D. *UK rail revolution. Biggest shake-up of Britain's rail franchises since 1990s privatisation*, Wednesday, 5 September 2018

Settis, S. (2014), *L'etica del architetto e il restauro del paesaggio*, Lectio Magistralis per il conferimento della Laurea ad honorem in Architettura, Università degli Studi Mediterranea di Reggio Calabria, in https://www.unirc.it/documentazione/materiale_didattico/1464_2013_356_18354.pdf (ultimo accesso 5 ottobre 2018)

Ue *Convenzione Europea del paesaggio* (2000), Firenze, Testo della Convenzione. pdf (sito della Direzione generale per il paesaggio, le belle arti, l'architettura e l'arte contemporanea) in <http://www.beap.beniculturali.it/opencms/export/BASAE/index.html> (ultimo accesso 15 ottobre 2018)