BDC

Università degli Studi di Napoli Federico II

23

numero 2 | anno 2023

BDC
Università degli Studi di Napoli Federico II

23

numero 2 | anno 2023

Integrating Nature in the City to Face Climate Change

BDC

Università degli Studi di Napoli Federico II

Via Toledo, 402
80 134 Napoli
tel. + 39 081 2538659
fax + 39 081 2538649
e-mail info.bdc@unina.it
www.bdc.unina.it

Direttore Responsabile: Luigi Fusco Girard
BDC - Bollettino del Centro Calza Bini Università degli Studi di Napoli Federico II
Registrazione: Cancelleria del Tribunale di Napoli, n. 5144, 06.09.2000
BDC è pubblicato da FedOAPress (Federico II Open Access Press) e realizzato con Open Journal System

Print ISSN 1121-2918, electronic ISSN 2284-4732

Indice/Index

BDC 23, 2/2023 | print ISSN 1121-2918, electronic ISSN 2284-4732

fedOAPress

Integrating Nature in the City
to Face Climate Change

Journal home page www.bdc.unina.it

BDC

Editorial

Editoriale

Luigi Fusco Girard

1. Urban regeneration and nature in the city: which approaches?

The city, and especially the metropolitan city, has expelled nature: planted areas have been gradually shrinking over time. Biodiversity has been greatly reduced, the air is increasingly polluted, heat islands are multiplying, causing costs especially for the older and marginalised and young people.

Soil has been systematically sealed, having been regarded as a resource to be used in building/residential production, ignoring its regenerative potential: it has been seen as a factor capable of developing high property rents. More than for its bio-ecological characteristics, it has been considered as *passive physical matter*. Sometime, as a source of *value capture* and/or land equalisation processes.

Little attention has been paid to the soil as a complex ecosystem that has formed over the centuries through the disintegration of rocks under the pressure of atmospheric events (rain, wind, various volcanic phenomena, temperature variations, etc.). Lichens, fungi, bacteria, worms and various insects have combined with the various particles thus formed. Plants growing on the soil were gradually added to the plants that had already decomposed over time. The plants, consumed as food by animals (which in turn fertilise the soil itself with their production of biological waste) gradually enriched the soil with new minerals.

Especially in large/metropolitan cities, empty/open soils have been subjected to instrumental use: they have been asphalted and cemented/built over. At other times they have been abandoned to progressive decay. The result is an absolute inadequacy in their management in relation to the needs connected with the ecological crisis and climate change.

In practice, traditional urban planning has contributed to using nature in an entirely instrumental sense, having been characterised for the most part by a rationality grounded on economic matrix: reductive of multidimensionality, complexity, heterogeneity. The urban planning of negotiations, of bargaining, of territorial marketing, is one recent example. Attention has ended up focusing on volume density, form, possible real estate trends, possibilities for equalisation between market values, rather than on analysing the health condition of the natural ecosystems on which the very health of the inhabitants depends.

2. Urban regeneration and ecology

Urban regeneration sees the city no longer through the lens of economy, but through the lens of bio-ecology. It is therefore urban regeneration planning that prioritises the fight *against climate change* and for improving the city *resilience*. It requires reforestation/replanting, implementing nature-led solutions (also for decontamination due to urban industrial locations). It assumes new points of view with which to look at the city: the point of view of young people and future generations; that of marginalised/poor subjects; that of the elderly; that of the third sector (as well as the point of view of other living species, to guarantee biodiversity).
Urban regeneration becomes an important entry point to implement a *circular model*: to imitate the functioning of nature economy, that is of the ecology (Fusco Girard et al., 2023). That is to initiate the ecological transition, capable of integrating with the human economy to reduce poverty, marginality and inequality.
Here we want to focus on the implications at the local scale. According to UNDP, 70 per cent of mitigation measures and as many as 90 per cent of adaptation measures depend on local governments (choices in urban planning, mobility, waste management, etc.).
Indeed, cities play a key role in promoting new development strategies. The European Union's New Leipzig Charter (2020) emphasises the notion of the *transformative power of cities* to achieve the *common good* by evoking the circular economy model and that of the 'circular city', which provides for the closing of cycles (of water, energy, materials, etc.).
The Leipzig Charter introduces the notion of 'smart, green and productive cities' (§B). Impact assessment is considered essential to realise these 'smart, green and productive cities' based on the *principle of subsidiarity* (see §§C; D.1; D.2; D.2.2).
In fact, already in the 1980s the Council of Europe had emphasised in the European Urban Charter the need to integrate nature into the city, through parks, gardens, urban forests, roofs and green facades of buildings, not only to improve the quality of the urban landscape but also to create a stronger bond between inhabitants and nature. Forms of public open space management based on local micro-communities and in any case on public/private participation were evoked. At the same time, the critical role of urban planning and management grounded on the ex-ante and ex post evaluative capacity of urban public policies was emphasised.
The ecological/biological (and nature-led) approach in regenerative city planning strategies has to face the crisis due to *climate change* and the loss of biodiversity.
A new urban planning is needed today, one that focuses primarily on underused and/or unused spaces. They are the waste of the linear city development and they become the entry point for implementing the circular city strategy.
They represent particular resources from which specific opportunities arise. Their re-use is crucial for a city to better adapt to the new contexts and improve its performance and its *resilience*. These under-utilised/unused spaces can be used (or recycled) as public parks, gardens, urban parks, urban gardens, areas for urban agriculture, etc., providing a series of interconnected *networks of living spaces*. The fundamental benefit is an improvement in the quality of life, well-being and health of the inhabitants, as well as the closing of circuits and a better overall metabolism.
Many recent analyses (Nowak, 1987) have well highlighted how important urban replanting is for combating climate change in view of the impacts it entails. Every space in the city, from the open space to the boulevard, to the park, to the public space, etc. needs to be de-waterproofed and replanted. In short, the future of cities depends on the ability to transform every roof, every façade, every corner into a green space, i.e. an O_2 producer and CO_2 sequestrator space, thanks to the energy of

the sun. It depends on the appropriate forestation and planting (in order to multiply the urban/metropolitan natural capital) together with the use of sun energy and the reuse of meteoric water.

3. Coming back to *planning with nature*

The new urbanism finds its foundation not in economic/real estate values, but in ecological/environmental values, i.e. in the ecosystemic *intrinsic values*: in the so-called primary values (Gren et al., 1994), i.e. in the *intrinsic values* (Turner et al., 2003). As they are the foundation for the performance of all human activities, they express the set of ecosystem services provided by natural capital.
One cannot fail to recognise here how in the 1960s McHarg had already proposed an early form of *adaptive planning*, i.e. congruent with the evolutionary dynamics of nature. This meant seeing nature not as an element of conflict but as a factor of co-evolution/cooperation (McHarg, 1969), from which positive impacts on wellbeing and quality of life/health follow.
McHarg's proposal was to identify and estimate the values that characterise an area (landscape, aesthetic, agricultural, economic, social, cultural, symbolic) and to search for solutions that can best *fit* these complex values, being less in conflict with them. In other words, this procedure leads, for example, to the inclusion of new road infrastructures in areas of lowest overall value (McHarg, 1969). The overlapping of the multiple maps of the distribution of different values leads to the identification of the solution of least conflict between conservation and transformation.
McHarg (McHarg, 1969), together with Buckminster Fuller (Fuller, 1982), Mumford (Mumford, 1970), can be reminded as some previous proponents of nature-led, i.e. co-evolutionary planning (based on continuous feed-backs).
The mitigation and adaptation action plan is the first stage of the new biodiversity regenerative urban planning. It implies the identification of horizontal surface and façade areas to be used as green areas.

4. The circular model and empty spaces

In the perspective of the circular economy, soil is interpreted through the lens of ecology, i.e. as a living, dynamic and complex organism: that is, as a precious resource of which to avoid any form of waste, i.e. under- or overutilisation. New planning is organized to avoid new consumption of soil. And also, to avoid empty spaces in the city.
Major events have been multiplying to improve competitive capacity. But in parallel, *public spaces* have been shrinking and increasingly marginalised. It has failed to address issues such as global warming or the reduction of different forms of poverty. It has preferred to analyse and focus more on interests rather than on the values at stake and the happiness of the inhabitants, with an approach that should have been one of the long-term futures. Instead, the short-term view prevailed.
The smart city (OECD, 2020), the hyper-technological city that solves its problems by relying on technological innovations, has been at the centre of the urban planning debate, rather than the vision of the *city of man for man* (Lazzati, 1984). Too often, it has preferred to entrust urban regeneration to events such as the Expo, the Olympics, *international games*, etc., i.e. to architectural projects capable of astonishing the public with great 'staging', great care for the aesthetic dimension associated with accurate marketing. Meanwhile, many suburbs were turning into

slums, i.e. areas characterised by all forms of decay and ugliness.
The result of the technical approach has been a lack of attention to restoring a sense of living together in the city: to reduce social fragmentation, to create *public spaces* and *places* capable of expressing the spirit, the very soul of the city; capable of regenerating community, relational, cooperative values. Nor has it done anything to reduce the dis-connection between cities and networks of life, between cities and natural ecosystems. The result has been a loss of ecological biodiversity, with negative impacts on health and well-being of people.
Regenerative/adaptive town planning does not propose the distribution of the open/green spaces of the city according to mercantile criteria, i.e. as *residual* or *marginal*, but on the basis of ecological processes, i.e. it seeks the most suitable functions because they are most capable of adapting creatively in a certain context, being as consistent as possible with the nature and characteristics of the area itself.

4. Regenerative planning and historic districts

Regenerative urban planning deals as a priority not only with marginal spaces, considered waste spaces in neo-liberal real estate strategies. They have been abandoned together with many historic assets are often used by marginal subjects, the poorest and most fragile social subjects, often regarded as *waste* by the hyper-consumer society.
The historic districts are characterized by a *human scale*, a *human dimension*. In the focus on the regeneration of historic cities through the preservation of cultural heritage, the suggestions of Ruskin, Morris, Violet le Duc can be perhaps evoked. The conservation is integrated with the provision of open spaces, public gardens, parks, planted green areas, etc., which is often proposed to integrate the beauty of the cultural landscape with the beauty of the natural capital.
In the European Union, which is the continent where the ageing of the population is the highest in the world, town planning has the task of regenerating the existing fabric, more than designing new neighbourhoods. The starting points are the historic centres, which represent with their historical and cultural heritage the spirit and soul of cities. They have been more or less conserved with all the necessary and hybrid adaptations over the centuries.
Since even cultural heritage is recognisable as having a particular form of value independent of use, and also an *intrinsic value* (Fusco Girard & Vecco, 2021; Council of Europe, 2005), it should be appropriate that this particular value could become central in new urban planning.
The *intrinsic value* is the essential value that a site/landscape/cultural heritage has because it is able of expressing the elements of permanence in the continuous urban/territorial dynamic. It has to be considered as a *structural invariant*.
The *intrinsic value* emerges in particular in the religious architecture heritage (i.e. convents, abbeys, cathedrals, sacred sites) and survives even when a cultural asset is no longer used. The intrinsic value is therefore the hidden or secret organizational order that ties together many components in a city/site, from which the particular identity and beauty emerges (as in natural ecosystems, where the harmony is reflected in their beauty).

5. Towards a regenerative urban and territorial planning

We need to go beyond traditional negotiated urban planning whose rationality has been much influenced by the rationality of orthodox economics, by introducing other principles and values: resilience, inclusion, care, social equity, sustainability, beauty.

The new urban/territorial planning can be defined as the *urban planning of complementarity and interconnections*, realised on the basis of not only physical/digital infrastructures but also immaterial and cultural infrastructures. The economic production system appears increasingly disconnected from the community and the territory. But it is above all increasingly disconnected from the vital evolutionary dynamics of Mother Earth: from the networks of life with serious implications that are often irreversibly modifying the ecosystems. The new urban planning will be increasingly attentive to urban metabolism and to its quantitative/qualitative improvement. It will be the urbanism of regeneration rather than of new production. At the same time, it will be the urbanism of adaptability.
This regenerative urban planning strategy should be capable of regenerating not only natural and man-made capital but also all other forms of capital: human and social capital.

6. The papers in this issue

The twelve papers in this issue of BDC can be all organized around these three key topics: *climate change, city regeneration and resilience.*
In particular, Federica Paragliola investigates the aspects related to the life cycle of the built environment, implementing the urban regeneration project with processes for the Construction and Demolition Waste (CDW) flows management, with the aim to develop local supply chains through the designation of eco-districts.
Laura Casanova and Francesco Rotondo propose an analysis of the state of the art in the scientific literature on the issue of 'public space' through the study of two projects (one implemented and the other in progress) in the Municipality of Bari, one of the 14 Italian metropolitan cities which, through the European cohesion funds, is investing more in 'public spaces' and on its waterfront.
In the context of regeneration and maintenance processes of the built environment, Francesca Ciampa identifies the values of material and immaterial culture as requirements to be respected to guide interventions for the reuse of urban voids as spaces of collective use for the community, starting from the research project 'Playgrounds and Art for Communities in Transition: a pact of care for cities', funded by the University of Naples Federico II.
Marianna Ascolese and Alberto Calderoni present result of a scientific research aimed at systematising a specific set of questions related to the processes of transformation and regeneration of areas on the periphery of the consolidated city, with a particular reference to an area situated to the south of Naples Central Station.
Anna Attademo, Maria Gabriella Errico and Orfina Fatigato defines prefigurative designs, inserted in articulated multiscale strategies, to re-inhabit 'common places' of the city of Casoria in total or partial abandonment, starting from the experience of research, teaching and third stream, developed by researchers from the Department of Architecture of Naples.
Marichela Sepe, starting from a study carried out in the framework of the PRIN2020 research project, within the ISMed-CNR Unit, defines and identifies what are the kinds of risk and the main kinds of overlapping among them in sites; what are the main places which are subjected at multiples risks. Furthermore, she proposes a method to comprehend what are the better and sustainable solutions in terms of adaptation and regeneration of different kinds of places interested by multiple crisis and by enhancing cultural heritage.
Gaia Daldanise, Martina Bosone and Domenico Vito, in the framework of the 'Green Blue Youth Vision 2030' methodological approach, investigate which cultural

approaches are suitable for building a vision of sustainable development as a 'common good' and which actions and tools can contribute in achieving the 2030 Agenda goals at the local scale.

Lilia Pagano and Paola Galante analyse the role of infrastructure Architecture in some Southern Ports, with particular reference to the urban design for the New Eastern Maritime Station, demonstrating that the reconfiguration of the "relational fields" of the urban landscape can involve the layout of the railways, usually considered non-modifiable barriers.

The contribution of Eduardo Bassolino and Sara Verde aims to develop an operational workflow for the verification and implementation of the setting criteria defined within the methodological framework developed for the subsystem of open spaces with the 'PLANNER' research, a study activity that investigates the definition of climate proof environmental design strategies in the urban context.

Camilla Sette investigates the role of resilient and adaptive retrofit intervention, within the broader framework of Water Sensitive Urban Design and Nature Based Solutions, in order to achieve climate adaptation of urban and peri-urban areas. The study area of her research is the immediate western suburbs of the city of L'Aquila, the capital of Abruzzo.

Maria Federica Palestino, Cristina Visconti and Marilena Prisco, by applying forms of experimental teaching on the effects of climate change to the city of Naples, look at "urban climate experiments" starting from a university action-research laboratory which, placing itself at the interface between institutions and civil society, facilitates the connection between climate policies and practices. The paper highlights the potential of university research and teaching on the 'public engagement' front.

Finally, Federica Isola, Sabrina Lai, Federica Leone and Corrado Zoppi, taking Sardinia as a case study, provide a methodology to ground the relationship between green infrastructure and ecological corridors to the definition and implementation of spatial policies and planning measures by combining the appraisal of a set of ecosystem services with the identification of an ecological corridor network based on the concept of resistance to spatial flows of species.

References

Council of Europe (2005). *Framework Convention on the Value of Cultural Heritage for Society*. Council of Europe Treaty Series, no. 199. Faro, Portugal, Spain. https://doi.org/10.1007/978-3-030-30018-0_1051.

Fuller, B. (1982). *Synergetics: Explorations in the Geometry of Thinking.* Estate of R. Buckminster Fuller.

Fusco Girard, L., Nijkamp, P., & Nocca, F. (2023), *Reconnecting the city with nature and history. Towards circular Regeneration strategies.* Franco Angeli, Milano, Italy.

Fusco Girard, L., & Vecco, M. (2021). The "Intrinsic Value" of Cultural Heritage as Driver for Circular Human - centered Adaptive Reuse. *Sustainability*, 13 (6): 3231. https://doi.org/10.3390/su13063231.

Gren, I.M., Folke, C., Turner, K., & Batemen, I. (1994). Primary and Secondary Values of Wetland Ecosystems. *Environmental & Resource Economics*, 4:55-74.

Lazzati, G. (1984). La *città dell'uomo. costruire, da cristiani, la città dell'uomo a misura d'uomo*. Editrice AVE, Roma, Italy.

McHarg, I. (1969). *Design with Nature.* Wiley Online Library, Hoboken, New Jersey, United States.

Mumford, L. (1970). *The Myth of the Machine: The Pentagon of Power*. Harcourt, San Diego, California.

Nowak, P.J. (1987). The Adoption of Agricultural Conservation Technologies: Economic and Diffusion Explanations. *Rural Sociology*, 52(2): 208-220.

OECD. (2020). *Smart Cities and Inclusive Growth.* OECD Publishing, Paris, France. www.oecd.org

Turner, R.K., Paavola, J., Cooper, P., Farber, S., Jessamy, V., & Georgiou, S. (2003). Valuing Nature: Lessons Learned and Future Research Directions. *Ecological Economics*, 46(3):493–510. https://doi.org/10.1016/S0921-8009(03)00189-7