Residential neighbourhoods: utopia and sustainability

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Abstract

Urban planning is the science that, at different scales, deals with the organization of territories; the goal is to allow the community to carry out the different activities of urban and territorial life.

Since the beginning of time, people had to give themselves rules of coexistence, including the rules for use of all public areas. Therefore, in other words, before we had the modern urban planning discipline, people have always practiced urban planning, both spontaneously and applying theories but also working off utopias.

After recalling the foundation cities of ancient history, the production of ideal urban models and cities built in the Fascist period, this contribution focuses on the "foundation of the city in the city", or the "invention" of the neighborhood residential and, in particular, the Italian economic and popular housing neighborhood.

The foundation of the new residential areas, that is, of "small cities" realized ex-novo, triggers, inter alia, the break with the historic city and the new process of urban expansion and establishes the concept of suburbs.

The case studies examined in the Italian production of Edilizia Residenziale Pubblica –ERP (i.e., Public Residential Housing) neighborhood and, more recently, of the requalification and recovery interventions that concerned them, are also addressed in terms of neighborhood, comparing them to international case studies. In particular, we explore the dimensions of sustainable development, capable of effectively activating both natural capital and functional and social mixité.

1. Sustainability in historical buildings

Urban planning is the discipline that organizes "... the use of land for the purpose of localizing and typifying settlements of all kinds with its infrastructure at the different scales provided, deals with pre-ordering the organization of the territory, in order to allow the social community to be able to carry out different activities".1According to this definition it can be tautologically stated that urban planning is assigned the task of founding cities and then re-founding them as a result of social, economic, technological, etc. changes. Since people began to build communities, it has been essential to establishing rules of coexistence, including those for the shared use of common spaces. Therefore, people have practiced urban planning, building "spontaneously" the town or planning it and, in some way, prefiguring the final result, before urban planning was considered an autonomous discipline (Greco, Torelli, 1983).

The construction of urban places, a consequence of utopian theories and models, has not acted by transforming existing places but has founded new cities. Even when the city was already a consolidated element of the territory, both in ancient times and in those closest to us, there were times during which the ex Novo construction of the city was particularly intense, as well as there were times when the theoretical elaboration and production of treatises and urban models were more copious than in others (Petrella, 1992). The foundations that from time to time have inspired theories and urban models were quite different from those that inform the current civilization. "... the Hippodamia city [is] traced without taking into account the nature of the soil and its location, with a series of secondary ways and parallel to the two main ways, in a theoretical and abstract scheme. On the contrary, the Roman city, even if of similar shape, derives from more realistic reasons, that is, from the crystallization of the castrum, located by choosing the land best suited to the needs of the military camp" (Della Rocca, 1939, p. 7). If these are the principles of the Greek and Roman cities, it is difficult to find in them the precursors of sustainability, even though both the Greeks and the Romans practiced the search for environmental comfort in buildings. In both cases, however, the sustainability of air conditioning systems is, trivially, due to the unavailability of electricity and therefore to the ingenious use of natural systems not dissipation: pipelines for the transport of fresh air, cryptoporticus, nymphaea, and so on (Minutoli, 2009). Much earlier, even more sophisticated systems, such as the Wind Towers (badger), had been developed in ancient Egypt and Persia to cope with the strong heat of those climate zones (Picone, 2009). The recurrent medieval patterns are linear or herringbone type or, again, winding, radio centric, spindle type of acropolis, and so on (Piccinato, 1978); the defense from external attacks was the main purpose of these installations that characterize both the village of the church and that of the merchant (Le Goff, 1977), both the urban foundations of the Carolingian period and those of the municipal age; the same urban types can be found in the villages of the early and late Italian Middle Ages (Ennen, 1975) as well as in the founded or re-founded cities of the Spanish reconquest (Calmette, 1962), in the ancient English abbatial villages (Beresford, 1967) and in the French bastides (Chèdeville, Le Goff, Rossiaud, 1998) of the twelfth and thirteenth centuries. As for the most ancient people, also the medieval sustainability is the result not of a choice but of the constraint to the use of natural energy; a practice that today we can declare sustainable are the collection and disposal of waste and the prohibition of tanning skins in the urban core (Le Goff, 1998). Leonardo argues: "water is the vehicle of nature"; this is also why sustainability in its own right can be traced back to the work of the master.

In the following times, the ideal cities of the Renaissance favored the search for a formal order through new architectural languages and the configuration of urban spaces; in them, there was the "dominion of secular reason over nature" (G. Cantone, 1994). In Alberti's (1452, 1966), Martini's (Torriti, 1993) and Filarete's theories, urban green spaces take on a relevant importance, but it is rarely conceived as an element of environmental mitigation; urban green spaces are codified in its rigorous geometries, in its location and in its function as an open space, in which nature is subject to the context in which it is placed. The disposal of waste, including animal and human excrement, was one of the main problems to be faced; in 1500, the "Master of garbage" came into operation with a significant social and economic power that, like today, attracted the interests of the underworld (Simoncini, 1974). The invention of the steam engine, the consequent affirmation of the industrial economy and the deleterious impact on the city, are answered with the flourishing of new social and urban models that are opposed to urban degeneration and the exploitation of man on man (Sica, Greco, 1991, p. 185 et seq.). The assertion of the rights of all human beings and the declaration of independence of the United States can also be interpreted as attitudes to social sustainability. Some of the hypotheses formulated on these issues are translated into concrete experiments that, in some cases, although revised, will also significantly guide the urban expansion that will characterize European cities after the Second World War. Mumford (1997, p. 233) distinguishes between utopias that hypothesize "the perfect model" and utopias that aim to reach a possible ideal model in a short time. Even if in a variegated way, all the reformists, pursuing a society founded on the union between agricultural and industrial economy, produce urban models that today we would define sustainable, as they are based on the search for a balance between the economic, environmental and social dimensions. At the beginning of the new century, research and proposals for ideal city models continued, as critical responses to a consolidated process of urban industrialization.

This is also true of Ebenezer Howard's "Garden cities of tomorrow" (1898-1902); the theory of the three magnets, acting as a sort of synthesis of the many previous hypotheses, structures an urban-type that aims to bring together in a single solution the pleasures of the countryside and the opportunities of city life, including industrial work. If

participation in the choices is the basis of any hypothesis of sustainable development, then the experiences illustrated so far are not. The models envisaged are predetermined and rigid: participation in the model offered is shared but participation in its construction is not envisaged. The attention paid by rationalism, urban and architectural, to the functioning of the city is badly combined with urban sustainability (Pawlowski, 1976). Although Le Corbusier, a rationalist, and Wright, an organist (Smith, 1983), paid close attention to sunshine and shading techniques, Congrès Internationaux d'Architecture Moderne — CIAM's "Athens Charter" theorizes a city as a function of the car, and in Brodoacre City individual air transport will also have to be used.

The whole complex system of contemporary urban laws in residential neighborhoods, developed in the mid-nineteenth century, is similar to the processes that have formed urban utopias and ideal cities, from antiquity to modern times. Although conceptually different, the new residential districts are inspired by the theoretical and non-theoretical production of the socialist Utopians and reformers.

The new and accelerated process of urban expansion, which from slow, unitary and organic becomes an accelerated and segmented aggregation of "parts", produces the fracture with the historical city and introduces the concept of suburbs, hitherto unknown.

The post-war needs required the creation of residential neighborhoods, which responded to the demand for housing caused by the destruction of war, migration to major cities and migration from the south to the north of the country.

In Italy, in the second half of the century that has just passed, on the basis of the experience gained in other European countries, various models of neighborhoods were experimented with, characterized by dimensions, systems, equipment, etc. that have changed a lot over time, in relation to the various social needs, the breadth of demand for housing but also in relation to utopias, or rather, ideas and urban and non-urban weltanschauung..

Although the first organic urban law had only been passed seven years earlier, the Istituto Nazionale Assicurazioni-Casa projects (Ina-Casa) are not part of the new general regulatory plans but are the result of an economic development plan, the so-called Marshall plan (Di Biagi, 2001, p. 45 et seq.). The US funding to European governments, provided for by the European Recovery Program, has the objective of politically linking Europe to the US but also of favoring the economic recovery of the old continent necessary for the prosperity of the new one. The Fanfani law, using part of the American aid, explicitly declares that the priority of the Ina-Casa plan is to create jobs and not to plan effectively the necessary urban expansion (Beguinot, 2002, p. 149 et seq.). To better understand the references from which designers draw, it should be remembered that "Garden cities of tomorrow" was reprinted in 1946 and, thanks to the introduction of Mumford, Howard's urban model spread widely among architects and town planners working in the reconstruction of our country. In those same years, the Anglo-Saxon concept of the neighborhood also made its way into the Italian urban culture, but the unity of neighborhood cannot be fully practiced as the program Ina-Casa does not provide for the expenses related to the implementation of the services. In its original definition, the urban elementary cell, rather than indicating technical standards, provided methodological indications that today we would define as performance and participatory and, therefore, if properly set, can be indicators of sustainability; the quantity of population had to be such as to guarantee the number of pupils necessary for an elementary school but, at the same time, the number of inhabitants had not to exceed the quantity that could be accommodated at the same time in a common room (theater or other); even the necessary service equipment is not absolutely pre-dimensioned but for each one the qualitative level that it must guarantee is indicated (Perry, 1929). These principles will be applied in Italy when constructing new neighborhoods, which are larger and larger and increasingly looking for total self-sufficiency but not sustainable. The extreme autonomy of an urban part, however, runs the risk of contradicting the very foundations of the neighborhood that, instead, must be, at the same time, part of a larger whole and autonomous entity in itself. Moreover, the hypothesized qualitative standard will become purely and definitively quantitative when, in 1968 (D.I. 1444), the law imposes the dimensioning of the surfaces of secondary urbanization of residential areas, considering exclusively the number of inhabitants of the area, independently from any other consideration related to local character and lifestyles.

2. Utopias in residential Neighborhoods

Starting from the current concept of sustainability and the rules that govern it, we are now going to analyze if this principle is present in the neighborhoods that were born concerning the nineteenth-century utopias. In the past, urban utopias were not particularly attentive to the principle of sustainability, as it is currently defined or, rather, did not explicitly seek the balance between the social, environmental and economic components nor were they concerned about the relationship between resource consumption and future generations. This is because in a less crowded and technologically undeveloped world, harmful emissions were not comparable to the current ones; nevertheless, the problem of urban waste disposal was present and the activities of tanneries in the urban environment caused to water, soil and air pollution. People were not aware that the carrying capacity of the planet is limited, that the soil resource is a finite resource and that the territory is structured on the relationship between human settlements and the environment; in short, people were not aware that the customs and traditions of human societies decree the speed of degradation and energy dissipation or the period of survival of the human species. The principles that — from time to time — have inspired theories and urban models were quite different from those that inform the current civilization; the priorities concerned the symbolism of dominant power, the security of the urban core from external aggression, hygiene, and so on. Yet many of the social housing districts built in the seventies recall, even if not explicitly, the theories of the great nineteenth-century : many of them, in fact, were designed as self-sufficient neighborhoods and with large parts in common, mostly on large green spaces, basically recalling the project of the Garden City planned by Howard. For example, the districts of and Dessie Harar in Milan, which, although with different types of buildings, had the undisputed dominion of occupying every free space with greenery, not only resume the utopias but, above all, anticipate the environmental sustainability, which will become only many years later the central theme of planning. Also, all neighborhoods have instilled the concept of sustainability and social equity. The desire to ensure primary services and large areas of connection and integration in the neighborhoods is one of the elements that unite all the design of residential neighborhoods. Much could be said about the reasons for failure: the concentration of weak social groups, the distance from the city, the lack of services, the lack of maintenance of housing, but it would be another issue to be addressed. The same choice to limit the number of inhabitants, even if not voluntarily, confirms the attention to the issue of environmental sustainability, for example to the problem of the production of solid urban waste or the problems related to transport.

On different assumptions from those of the Garden city — but still Utopian —, the Neapolitan districts of Barra, San Giovanni a , La and were born. Here the theoretical reference seems to be that of Owen, also because they are close to the industrial areas of the Neapolitan capital. In 1952 in San Giovanni a (2,000 inhabitants) a central nucleus is planned, characterized not by greenery, but by the maximum concentration of housing, with a clear separation of even the smallest equipment and with greenery exclusively at the service of the residence. In this case, we are very far from the concept of environmental sustainability. Even in Barra and there is a complete lack of the concept of public and green service and, therefore, both social and environmental sustainability.

Today, neighborhoods are still among the most difficult parts of the city. In order to find solutions to the challenges that these cities face on a daily basis, there are various , processes and strategies put in place, above all aimed at improving the quality of the "peripheries of living" and at "managing social tensions in order to reduce the phenomena of cultural " or at strategies to improve environmental conditions. It can be estimated that about 80 billion Euros have been invested directly or indirectly in urban areas by the European Regional Development Fund (ERDF) and that a further 15 billion Euros of ERDF funds will go to Urban Authorities to support urban development strategies that address the economic, environmental, climate, demographic and social challenges facing cities. The nature and scale of the challenges facing Urban Authorities require much more than traditional policies and services; they must be bold and innovative in designing and testing new services and products. Therefore, innovation is becoming an increasingly familiar concept for policy-makers and professionals across Europe and beyond. While respecting the rules in force and the choices made by the parties in charge, the urban plan can still tend to achieve a relationship of conformity between the "city" and the natural environment and reduce in a short time the ecological footprint of a city and its inhabitants even more than seventy percent.

Italy, with its so-called complex planning, has tried to solve the complex problems of districts in crisis and to ensure that these parts of the city overcome the existing imbalances and align with new European trends, both in terms of environmental compatibility and social equity since the Nineties. In Barra-Ponticelli, for example, an Urban Regeneration PRU has been designed with the aim of "overcoming the fragmentation, disorganization and inadequacy of the existing settlement condition, both physically and functionally, by proposing a new urban structure able to reconcile the traces of the historical territory (historical center, farms, agricultural areas, ancient formation routes, etc.) with new settlements and building episodes of more recent formation and by aiming at new integrated urban settlements able to introduce adequate conditions of functional complexity" (Municipality of Naples). The PRU, introduced in 1993, is known as a tool for transforming consolidated and degraded urban fabric to promote a more balanced distribution of services and infrastructure and improve the environmental and architectural quality of urban space, in order to eliminate the conditions of abandonment and degradation of building, environmental and social areas that affect Piano Di e PEEP (i.e. Economic and Popular Housing Plan). In Barra, therefore, starting from these premises, the recovery project aims to improve urban quality also and above all through the creation of equipment and services and the introduction of new functions at urban and territorial level and a 'green area intended for a public park and substantial vegetation within the residential area. Also, there is the provision of a differentiated road system (pedestrian within the area of the building and driveway outside), parking lots, underground for residents and public level. The PRU, however, also intervenes in buildings where the use of renewable energy sources and the adoption of construction technologies, allow limiting the consumption of primary energy to the minimum necessary and obtaining, as a result, reduced pollution. The total area of PRU Di is 543,411 square meters, of which 185,500 square meters represent the maximum surface area of 200,000 square meters, the minimum surface area to be allocated to public spaces. The regulations, in drastically reducing the residence, leave a significant tertiary minute space linked to the tertiary minute yield linked to the residence (between 10 and 20%), but also to certain functions capable of producing an increase in the centrality of the area.

Figure 1. Source: http://cdca.it/wp-content/uploads/2017/05/Parte-II-Analisi-del-territorio-i-progetti.pdf

Figure 2. Source: http://cdca.it/wp-content/uploads/2017/05/Parte-II-Analisi-del-territorio-i-progetti.pdf

In the same area, moreover, there is also a Neighborhood Agreement that, instead, intervenes in the construction. The aim of the program is to return the entire area to its former glory and to introduce commercial production activities that are financially supported by private individuals. We are still very far, at least in these Italian cases, from the application of the principles of sustainability.

3. Sustainability principles in neighborhoods

The city is a complex, open and dynamic system because the relationships between the elements that compose it, are many, exogenous elements can change its state and the relationships between elements themselves. The city is the privileged habitat of societies, as demonstrated by the fact that 55% of the inhabitants of our planet currently live in cities (UN DESA 2018). Cities represent — at the same time — the largest absorbers of resources and the largest producers of environmental degradation and, therefore, sustainable development can only be pursued with sustainable cities. Even if rankings are often drawn up and prizes awarded to municipalities for having undertaken initiatives aimed at sustainability (ecological construction, waste management, air quality, transport system, etc.), it still seems to be a long way from coming a comprehensive project that, addressing synergistically all the dimensions of sustainability, aims at the sustainability of the urban system as a whole. The experiments that best approach the control of the entire system, i.e. the verification of the interactions between all its elements, are those that address the scale of the residential district (ex-Novo or requalification of the existing) because the behavior of this subsystem is partly similar to the behavior of the entire urban system, going, in fact, to constitute an analogical model.

Summarizing approximately the scientific literature on the subject, it can be said that a sustainable neighborhood must:

- Limit the consumption of land, both direct (areas taken away from naturalness) and indirect (areas taken away from the elements supporting the main element);

- Use as a matter of priority areas that have already been developed and mainly those that have been abandoned or, in any case, are close to areas that have already been developed;

- Reuse as much as possible all the artifacts present;

- Make the modification elastic, i.e. it must be possible to restore the original condition;

- Avoid the use of non-renewable resources;

- Use environmentally friendly materials, giving priority to recycles and those produced locally;

- Maintain and improve the indigenous water resources, flora, and fauna;

- Optimize soil permeability (including filtering of pollutants);

- Guarantee local energy self-sufficiency (through building materials and systems, using producers inserted in buildings and public spaces);

- Minimize the production of pollutants (through appropriate mobility systems, air conditioning, water supply and drainage, waste production and disposal, carbon offsetting);

- Manage the coherence of inclusion with local factors;

- Set up and manage an environmentally friendly transport system;

- Organize an appropriate process for the management of sorted waste;

- Provide for and regulate the maintenance process and the disposal processes for the end of life of the construction elements;

- Not to generate ecological barriers;

- Maintain performance over time.

All the above items are useful to achieve environmental dimension of sustainability).

A sustainable neighborhood also must:

- Ensure the presence and efficiency of neighborhood exercises with appropriate influence rays;

- Implement participatory processes of all stakeholders' ex ante, in itinere and ex post, with maximum transparency;

- Maximize material and social security, including by applying the EU standard, ENV 14383-2:2003;

- Set up and manage an efficient public transport system;

- Ensure spatial and economic accessibility for all inhabitants;

- Stimulate the social mix (generational, cultural, economic, ethnic, etc.);

- Govern the relations between the neighborhood and the urban system of which it is part;

- Provide for constant maintenance avoiding degradation;

- Create spaces for the relations of the community;

- Create flexible spaces that can be easily modified to meet new needs;

- Create the articulation of the spaces must allow spontaneous control;

- Maintain and enhance the historical preexistence of quality;

- Ensure the thermal comfort of outdoor areas for common use;

- Ensure the acoustic comfort of outdoor and indoor areas.

All the above items are useful to achieve social dimension of sustainability.

Moreover, a sustainable neighborhood must:

− Harmonize the public and private components;

− Account for naturalness loss compensation;

− Provide for compatible costs for both construction and maintenance

− Use locally produced materials

− Produce domestic economy, with attention to local social capital

− Evaluate periodically the GDP and the IEP of the neighborhood

All the above items refer to the economic dimension of sustainability.

Eventually, a sustainable neighborhood must:

− Provide for objective ex ante, in itinere and ex post evaluation;

− Produce regular monitoring;

− Manage all phases with performance rules.

The above items refer to general sustainability.

4. Sustainable neighborhoods in an eco-city

But what does a neighborhood have to aim for to be livable? The utopias of the past, in an ancestral and implicit way, anticipated the concepts of equity, sustainability, and resilience that today are central to the design and recovery of a neighborhood. The periphery traditionally understood is associated with the concept of marginalization, in turn, connected to that of the poor quality of architectural heritage and life for the population, more generally of building and socioeconomic degradation. In the contemporary city, in addition to the traditional social hardship and building degradation, the new suburbs are characterized by further forms of degradation, related, on the one hand, to the urban fabric, to the lack of services and accessibility, on the other hand, to the open territory, for the consumption of non-reproducible resources (Salzano, 2000).

Still today, the large suburban working-class neighborhoods are still characterized by situations of social and spatial marginality and by urban and environmental degradation (Ostanel, 2017). A clear example is that in 2015 one of the last calls for proposals was issued for the social and cultural regeneration of deprived urban areas and that in 2017 a specific extraordinary intervention for programme urban regeneration and safety in the suburbs was planned. In 2016, again, a call for proposals was issued for the presentation of urban regeneration and safety projects in the suburbs of metropolitan cities and provincial capitals.

Leaving aside all the talk about the redevelopment of suburbs and neighborhoods, the question that has been asked is what are the characteristics that a neighborhood must have today? From the analysis of some emblematic and/or paradigmatic European realizations, it is possible to extrapolate some recurrent elements that have structured and directed the design logic of the sustainable requalification of the existing and/or of the ex-Novo construction. However, making a neighborhood sustainable does not only mean building: many sustainable buildings do not automatically lead to a sustainable city and many sustainable neighborhoods do not automatically lead to a sustainable city. If this is true, then it is also true that the neighborhood, taken as a sub-system, can simulate the behavior of the urban system to observe the relationships between the different elements that make it up. Therefore, starting from the eco-cities it is possible to deduce some central criteria in the sustainable design of a neighborhood. There is no generally accepted definition of an ecological city or a concise definition of an eco-town. Different authors have very different opinions on what makes a city ecological. The following table gives several examples of terms used to refer to ecological cities (Berrini, Colnaetti, 2010). Eco-towns are on the rise in different parts of the world. In the Middle East, Abu Dhabi launched a $22 billion project in 2006 to build the world's first zero-emission city, Masdar. The city is planned over a territorial area of 6 sq. km. for a population of 45,000 to 50,000, setting new standards for green

living, including clean energy, solar-powered desalination plants, magnetic trains for transport and 100% separate waste collection (Riva Sanseverino, Riva Sanseverino, Vaccaro, 2014, p. 110).

Figure 3. Source: city, https://transsolar.com/projects/masdar-city

In the UK, Prime Minister Gordon Brown announced in 2007 the construction of 10 eco-towns across the country (BBC News 24 September 2007). A new planning policy statement setting out the standards that eco-towns will have to meet was published on 16 July 2009. The intention is to provide an opportunity to promote sustainable living and zero-carbon development while maximizing the provision of green space and affordable housing. In China, eco-city construction is proposed not only for large cities such as Beijing, Shanghai, and Tianjin but also for small and medium-sized cities such as Yuxi, Weihai, Rizhao, and Changshu. Under the Guidelines for the Construction of Eco-communities (1996-2050), the intention is to promote the planning and construction of throughout China (A. Gobbicchi, 2012). The aim is to apply sustainable planning and design principles to the construction of new communities. In 2007, the Chinese and Singapore governments announced the signing of a collaborative framework to plan and develop a 30 km2 eco-city in Tianjin. By 2010, the basic infrastructure for the start-up area (4 km2) had been completed. The project is still under construction and has a total gross surface area of over 800,000 m2. This project includes both short and long term objectives for key aspects of eco-city development such as water and waste management, air and water quality, green buildings and transport, resource use and conservation, and public construction. The eco-city of Tianjin is planned with several distinctive features including the use of clean and renewable energy; 100% green buildings, an efficient and easily accessible public transport system, extensive vegetation, heritage conservation, water recycling and more efficient use of water resources, integrated waste management, development and strengthening of social harmony among residents and specialization in service industries. Other Chinese cities have followed suit. In January 2010, Kunming (China) was honored by the United Nations as "the most eco-friendly city in China and the most livable ecological city in the United Nations. Equipped with a pleasant year-round climate and a local advantage, Kunming has become known as the Chinese eco-city benchmark.

In addition to the Chinese cases, in 2009 the World Bank, within the Eco2Cities program, also includes the city of Stockholm. The European city is an example of how integrated and collaborative planning and management, based on the principle of cyclical urban metabolism, can transform an old industrial area of the inner city into an attractive and ecologically sustainable district. Vancouver is also an example of a city that becomes livable to a set of basic principles of spatial planning and inclusive planning. Leaving aside the numerous examples of now widespread eco-cities, it is clear, however, that there are common features that can be applied to the neighborhood scale.

5. Conclusion

Currently there is no definition of what an ecological city is, but through the guidelines of the Zofnass programme Riddel, 2004; Pollais, 2016) it is possible to go for sustainable spatial planning. The Zofnass research team has begun to develop Zofnass planning guidelines for sustainable cities for contemporary urban practice, both for new, expanding and existing urban developments. In addition to eco-sustainable planning, changes in consumer behavior will be necessary, just like a combination of better management of the resources that make up and from which the infrastructures analyzed draw. The district to be redeveloped or the part of the city to be recovered should aspire to the following principles:

– A compact and mixed urban form that protects the natural environment, biodiversity, and food production areas;

– The natural environment permeates all free spaces;

– The motorway and road infrastructure are downsized in favour of walking and cycling infrastructure, with particular attention to rail. The use of cars and motorcycles is reduced to a minimum;

– There is a wide use of environmental technologies for water, energy and waste management: the city's life support systems become closed-loop systems;

– The city centre and suburbs within the city are "human centres" that prefer access and circulation by means of transport other than the car, and absorbed a high percentage of employment and residential growth;

– The city has a high sense of civic responsibility, common sense of community, fairness and good quality of government. The public sphere includes the management of the entire transit system and all associated environments;

– The city structure and urban design, particularly public environments, are very clear, permeable, robust, varied, rich, visually appropriate and customized for human needs;

– The city's economic performance and job creation are maximized through innovation, creativity and the uniqueness of the local environment, culture and history, as well as the high quality of public and social environments;

– Planning the future of the city is a visionary debate and decision-making process, not a prediction or calculated process;

– All decision-making is based on sustainability, social, economic and environmental integration, and cultural and urban considerations, as well as compact, are oriented towards changing urban substantive principles. These decision-making processes are democratic, inclusive, and empowering and hopeful.

These decision-making processes are democratic, inclusive, and empowering and hopeful. These principles will try to be applied in Italy as we proceed in the construction of neighborhoods, larger and larger and increasingly looking for total self-sufficiency that should not be understood in terms of sustainability.

The extreme autonomy of an urban part, however, runs the risk of contradicting the very foundations of the neighborhood that, instead, must be, at the same time, part of a larger whole and autonomous entity in itself. Moreover, the hypothesized qualitative standard will become purely and definitively quantitative when, in 1968 (D.I. 1444), the relative norm imposes the dimensions of the surfaces of secondary urbanization of residential areas, considering exclusively the number of inhabitants of the area, independently from any other consideration related to local character and lifestyles. The residential areas created under the per GEStione CAse per i Lavoratori – GESCAL program (i.e., workers' housing management) do not differ much from those produced under the aegis of Ina-Casa. With the Coordinamento Edilizia Popolare – CEP (i.e., housing project coordination) neighborhoods, the urban cell expands the dimension on which the Ina-Casa had settled and, while continuing to remain detached from the historic city, tries to reconnect the previous working-class neighborhoods, which, scattered throughout the peri-urban area, are characterized by a dimension that hardly goes beyond five thousand inhabitants and the absence of services for the community.

The inclusion of a portion of private housing to be provided within the districts "economic and popular" would like to pursue a dual-purpose: eliminate the presence of only one social group of new residential areas and, at the same time, encourage the production of service equipment that the presence of the pg. 10 bourgeois class would be imposed.

References

Alberti, M., Solera, G. (1994). Vula T, La città sostenibile: analisi, scenari e proposte per un'ecologia urbana in Europa, Franco Angeli, Milano.

Beguinot, C. (2002). "Piano-progetto-prodotto", in AA.VV., Fanfani e la casa, Istituto Luigi Sturzo, Rubbettino Editore srl.

Beresford, M. (1967). New Towns of the Middle Ages,London Lutterworth Press, London, GB.

Berrini, M. (2010). Colonetti A. (ed.by) Green life: costruire città sostenibili,Compositori, Bologna.

Biondo G., et al. (2005). Abitare il futuro. Città, quartieri, case, BeMa, Bologna.

Calmette, J. (1962). Storia di Spagna,Sansoni, Firenze.

Cantone, G. (1994). "Utopia urbana, Utopia della storia",Arte Lombarda Nuova Serie, n. 110/111 (3-4).

Cappiello, V. (2005). Alla ricerca dell'urbano: scritti e progetti sul recupero della periferia, Edizioni Graffiti, Napoli.

Chedeville, A., Le Goff, J., Rossiaud, J. (1998). La ville en France au Moyen Âge: des Carolingiens à la Renaissance Editions du Seuil, Paris.

Commission Brundtland-WCED-World Commission on Environment and Development. (1972). Our common future, Oxford Univ. Press, Oxford.

Della Rocca, A. (1939). Lo sviluppo della città moderna, aspetti e tendenze, Officina poligrafica laziale, Roma.

Di Biagi, P. (2001). Il piano Ina-Casa e l'Italia degli anni cinquanta, Donzelli, Roma.

Dierna, S., Orlandi, F. (2005). Buone pratiche per il quartiere ecologico. Linee guida di progettazione sostenibile nella città della trasformazione, Alinea, Firenze.

Farneti, S. (2002). Un nuovo quartiere residenziale a Malmö, Svezia: Bo01 l'esposizione europea dell'abitare in Aa.Vv., Costruire sostenibile. L'Europa, Alinea Editrice, Firenze.

Greco, E. (1983). Torelli M., Storia dell'urbanistica: il mondo grecoLaterza, Bari.

Gobbicchi, A. (2012). La Cina e la questione ambientale, Franco Angeli, Milano, p. 166.

Le Goff, J. (1977). Tempo della chiesa e tempo del mercante, Einaudi, Torino.

Le Goff, J. (1998) L'immaginario medievale(traduz. A. Salmon Vivanti), Laterza.

Meadows, D. H., Meadows, D. L., Randers, J., Behrens III, W. W. (1972). The Limits to Growth, Universe Books, New York.

Minutoli, G. (2009). "Tecniche di ventilazione naturale nell'edilizia storica" in Balocco, C. Minutoli, G. Farneti, F. I sistemi di ventilazione naturale negli edifici storici. Palazzo Pitti a Firenze e Palazzo Marchese a Palermo, Alinea Editrice, Firenze.

Mumford, L. (1997). Storia dell'utopia, Universale Donzelli.

Ostanel, E. (2017). Spazi fuori dal Comune: Rigenerare, includere, innovare, Franco Angeli, Milano.

Pawlowski, C. (1976). Tony Garnier, le radici del funzionalismo, Faenza editrice, Faenza.

Perry, C. (1929). The Neighborhood Unit, in Regional Survey of New York and its Environs, Volume VII, Neighborhood and Community Planning, New York.

Petrella, B. (1992). Spazio, tempo e velocità per la città del XXI secolo, in Beguinot C., Cardarelli U. (a cura di), Per il XXI Secolo. Un'Enciclopedia. Città Cablata e Nuova Architettura ed. DiP.ST/IPiGeT, Francesco Giannini e figli, Napoli.

Picone, A. (2009). La casa araba d'Egitto: costruire con il clima dal vernacolo ai maestri., Editoriale Jaca Book Spa, Milano.

Piccinato, L. (1978). Urbanistica medievale, Dedalo libri, Bari.

Robert, R. (2004). Sustainable Urban Planning Tipping the balance, Blackwell Publishing .Victoria Australia.

Riva Sanseverino, E., Riva Sanseverino, R., Vaccaro, V. (2014). Atlante delle smart city. Modelli di sviluppo sostenibili per città e territori, Franco Angeli, Milano, p. 110.

Salzano, E. (2000). La città nel Terzo millennio, Universo, anno LXXX, n.5.

SICA, P., GRECO, E. (1991). Storia dell'urbanistica, Laterza, Bari.

Simoncini, G. (1974). Città e società nel Rinascimento, Einaudi, Torino.

Smith, N.K. (1983). Frank Lloyd Wright, edizioni Dedalo, Bari.

Spiro, N. (2016). Pollais, Planning Sustainable cities, Routledge.

Stenti, S. (2003). Riprogettare la periferia: scritti e progetti sul recupero dei quartieri di edilizia pubblica, Clean Edizioni, Napoli.

Thai-Chee Wong- Belinda Yuen. (2011). Eco-city planning. Policies, Practice and Design. Singapore, Springer.

Torriti, P. (1993). Francesco di Giorgio Martini, Ed. Giunti.

UNCED. (1992). Agenda 21, the Rio Declaration on Environment and Development, the Statement of Forest Principles, the United Nations Framework Convention on Climate Change and the United Nations Convention on Biological Diversity.

Un-Habitat,Planning Sustainable Cities (2009). Global Report on Human Settlements Policy. London, Abridged Edition.