

## Future cities, between technology and environment

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### Abstract

The 21st century has turned the spotlight on climate change, which has altered the balance of the environment, placing the emphasis on the actions to be taken to safeguard the world to be handed down to future generations. One example of this is the Fridays for Future movement led by the young Greta Thunberg.

Cities have had to cope with rapid climate change, which has increasingly affected coastal areas and helped to isolate marginal areas considered at risk. There have been many urban regeneration projects related to sustainability, especially large projects in Northern Europe, aimed at creating the right proportion between architecture and nature.

Yet cities have been unable to cope with and counteract, both economically and socially, the effects that the global pandemic has generated in the last two years.

The enormous concentration of the population in the city, the so-called metropolitan areas, has meant that the negative effects on physical and mental health are spreading fast.

The indoor and outdoor spaces of the contemporary city have not been sufficient and adequate in guaranteeing public health both from a health and psychological point of view.

City services have been interrupted. Places of sociability and open spaces have been banned.

Homes, formerly familiar and intimate places, have become offices, working spaces that are inadequately equipped and comfortable. From a place of the heart to a place of stress, where everything happens.

Architectural spaces, especially those related to work, have not allowed social distancing, in the contemporary city everything is concentrated in order to guarantee the citizen services and infrastructures within a few kilometers.

And yet, until now, spaces have been planned with the idea of combining services, infrastructure and well-being for the citizen. The pandemic has highlighted the great problem of long-term planning, with objectives primarily for public health as well as the environmental and socio-economic well-being of the city.

The role of the designer becomes central, the cities of the future will have to be designed according to constant variables.

The concept of multidisciplinary is therefore the keystone for long-term planning and landscape design, the professional figures appointed will have to interconnect themes such as sociology, environment, health, economy and technology.

*Keywords: Landscape; city; urban design; regeneration; health; sociability; Environment*

### 1.INTRODUCTION

Economic, social and cultural contexts have influenced and modified the territory, shaping it with respect to the needs of human activities and defining the urban landscape.

The current context of sustainability policies and the UN action programme with the 2030 Agenda call for safeguarding the environment and resources. This shows us that the boundary between urban and natural landscapes is showing signs of weakening.

The Italian Constitution recently amended Articles 9 and 41, which state that "the Republic promotes the development of culture and scientific and technical research, protects the landscape and the historical and artistic heritage and safeguards the environment, biodiversity and ecosystems, also in the interests of future generations".

Sustainable development is the key to the future, so we have to ask ourselves how it can be implemented in the protection or definition of what is the boundary of the urban and natural landscape at different territorial scales. Professionals from different fields have to deal with urban regeneration projects considering the changing and variable aspects of historical-cultural, environmental and technological circumstances.

## **2. THE NEW ROLE OF LIVING IN RESILIENT CITIES BETWEEN TECHNOLOGY, ENVIRONMENT AND SOCIAL**

Resilience refers to the ability of individuals, communities, institutions, businesses and systems within a city to survive, adapt and grow regardless of the type of chronic stress and acute shocks they experience, thus a resilient city is an urban system that not only adapts to climate change, but also comes up with new social, economic and environmental designs.[1]It can be said that a sustainable city is consequently a resilient city. From a global point of view, resilience is therefore nowadays "the science of adapting to change" as defined by Andrew Zolli in his book *Resilience: Why Things Bounce Back*[1], starting from the assumption that "all systems fail: some recover, others do not": resilience explains why. Why is it so important to refer to cities when talking about resilience? Since the 1950s we have been living in what Nobel Prize winner Paul Crutzen has called the Anthropocene[2], the geological age of man, in which the human species is credited with causing the most significant spatial, biological and climatic changes on the planet. In this scenario, cities represent the densest and most complex product of this human action, and they are the home of our present and increasingly of our future: more than 50% of people in fact live in urban conglomerates today, and according to the 2018 World Urbanization Prospects almost 70% are expected by 2050. From an environmental point of view, one fact is illuminating: cities occupy less than 3% of the world's surface area, but are responsible for 75% of greenhouse gas emissions. Rather than cities, we now speak of urban systems, complex organisms of economic, social and infrastructural relations. [2] The latter form two macro-families of urban resilience actions working in an adaptive manner: blue infrastructure and green infrastructure. Blue infrastructures designate a complex of technological and natural solutions capable of managing the water component in urban areas, which for many decades has been relegated to a subterranean issue, capable of improving water quality, increasing biodiversity and promoting urban cooling, as well as managing excess water (think of the now famous flood plazas in Rotterdam). Green infrastructure is a system of point and linear natural elements, which in cities attempts to stitch together the existing fragmented green spaces, and restore ecological continuity from peri-urban green areas to denser areas, renaturalising concrete and impermeable spaces. The benefits of green areas have been known for a long time, from environmental to economic and even social ones, but in recent decades it has often been difficult to overcome the traditional approaches that relegated to green areas only a filling and numerical function for the achievement of the minimum values required by law.

An example of green infrastructure can be found in Copenhagen, where the Superkilen (Super Wedge in Danish) linear urban park is located in the semi-peripheral district of Nørrebro. It is much more than a landscape architecture intervention and redevelopment of a suburb. The neighbourhood of Nørrebro is a difficult area, populated by many immigrant people of different nationalities, each with their own culture, customs and religions. The project aims to redevelop an area of little urban value and at the same time to provide an opportunity for dialogue and discussion among the various inhabitants of the area. Over 750 metres long, it is divided into three basic parts. The first two are characterised by two different shades of colour: the western one in shades of red (with a vermillion

concrete and shockproof rubber paving) and the central one in black and dark grey (also paved with asphalt and shockproof rubber alternating with white stone bands to create an artistic design). We then come to a third, "more traditional" area with greenery and lawns. The park is a big open-air installation: to encourage integration, the three architects (in addition to BIG, which handled the architectural part, Superflex are responsible for the artistic part and the Germans of Topotek1 for the landscape) planned to randomly insert at least one object from each of the 57 communities living in Norrebro. So there is, for example, a fountain in the shape of the Star of David, an Arab crescent sign, Latin American seating, picnic tables from Armenia and so on. The two-lane cycle path, which cuts across the park, is also an invitation to the population to use an ecological, sustainable and healthy means of transport: one of the municipality's requests was for an area for sports and open-air activities, as well as a place for children to play.[3]



**Figure 1** – Superkilen /Topotek 1-BIG Architects Superflex  
(Source: <https://www.archdaily.com/>)

In Paris you can find the former port site of Saint-Ouen[4], with an area of 100 hectares, an exemplary and innovative living quarter in the field of urban diversity and environmental, functional and social quality, density and urban continuity. It was created with the objective of being realised over time, providing objectives to be achieved in steps taking into account possible variables. The requests also included a transformation and redevelopment of the former oil site, the need to reconnect the river to the city and the region, the creation of a sustainable urban development model for 2030 and social inclusion policies. Fifty per cent of the housing is reserved for social housing, demonstrating the desire for projects of this scale to be aimed at more than just an elite population.

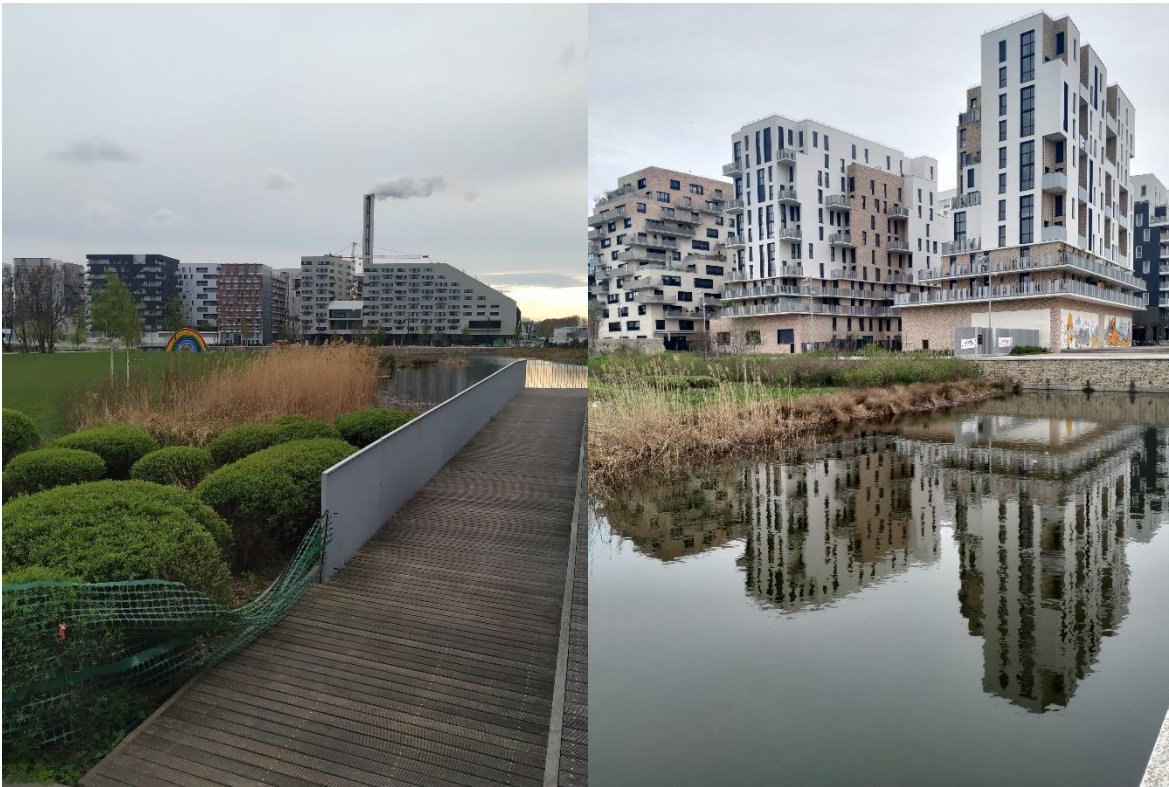


Figure 2 – Écoquartier Les Docs Saint Ouen

### 3. INCLUSION AND ACTIVE PARTICIPATION OF CITIZENS

The resilient city is certainly based on a technological design, which focuses on environmental quality, but places among its main objectives that of sociality and the value of the local community. The concept of territory and landscape have often been interconnected at the theoretical level but distinct from the social context. In the 2000s, the European Landscape Convention[3] introduced a new definition of landscape, emphasising the importance of how it is perceived by the population and, above all, stating that its character is the combination of natural and/or human factors and their interrelationships. Perception is thus linked to the context of well-being, a fundamental principle for a resilient city. "It is therefore possible that a beautiful landscape, or if we want a landscape perceived as such by the people who inhabit it, frequent it, live in it and transform it, derives from a functioning territory"[4], a functioning territory is therefore the *conditio sine qua non* for defining the quality of life, the subjects that enable this condition are those who benefit from it is that we simply define as citizens who are actually the local community. Metropolitan cities have undergone vast transformations over the last twenty years, particularly social ones, which have contributed in part to the dissipation of this concept of globalisation and equality as a sense of normality. Inequality, which was once marginal, has now become the strong point of an area, placing the sense of living in a place at the centre, a sense of identity which is the result of transformations and becoming, as André Corboz states: "Not only has the number of regions with a concentrated population increased enormously since the Second World War, but above all mentalities alien to the city, on the whole at least in Western Europe, are undergoing a decisive metamorphosis, which has already taken place in the United States. The operation has taken place thanks to the spread of the

mass media: more rapidly than the railway in the last century, radio and, even more so, television have succeeded in modifying behaviour, proposing a sort of homogenisation of lifestyles, by levelling out cultural reflexes"[5]. The concept of the local now becomes the focus of design and experimentation, with two fundamental characteristics at the heart of the project: inclusion and participation.

The suburbs of large cities and small towns often experience hardship, neglect and isolation. As Baumann says: "Uniformity nourishes conformism, and the other side of conformism is intolerance" [6], the consequences of the isolation of the territory should also be read from a social point of view, and thinking of rehabilitating a place without considering those who live there is not possible.

"The history of each city and each territory can be narrated from different points of view: as an examination of settlement and architectural dynamics, as a history of the inhabitants, of the conflicts and culture that inhabited them, or starting from the visions and political actions that designed the destinies of the working classes"[7] writes Irene Ranaldi, PhD in sociology and journalist, emphasising how there is a multi-character that defines a place and in turn defines an identity.

It is enough to think of the Arbëreshë community that settled in the north of Calabria between the 15th and 18th centuries, inhabiting places and joining the local community to the extent of developing a hybrid language between Calabrian and Albanian, considered today as a cultural heritage that unfortunately risks being completely forgotten due to the phenomenon of depopulation.

Using a participatory approach guarantees the achievement of objectives that respond to the different territorial realities. Allowing the participation of the inhabitants in all phases of the project's definition can allow the understanding of the city's dynamics. It is essential to include in the participation bodies and committees, associations, cooperatives and individual inhabitants engaged in the development of their territory.

The involvement of all social actors, through a process open to all social categories or economic groups, organised groups and associations is essential, it must have a character of continuity, it must be structured over time to be continuous from the initial to the final phase.

The most commonly used participatory methodologies are forums, focus groups, workshops, working groups based on the principle of interactive communication with town halls, neighbourhood committees and cultural associations.

The uniqueness of the places, and the high quality of the work, is the result of a participatory design activity involving not only professionals and organisations, but also inhabitants who live in the area and who will potentially welcome new temporary citizens or tourists in the medium/long term.

#### **4. MULTICOMPETENCE, CO-WORKING OF PROFESSIONALS**

The conception and development of such complex projects require the close collaboration of different professionals, who contaminate each other and arrive at new solutions based on their cultural background. But how can the latter be brought together? A possible meeting place could be realities such as Talent Gardens (TAG), i.e. a physical network of innovators in which professionals find the tools to transform and grow their own realities. The common goal should be to create connections so that by sharing a workplace, talents can get to know each other, contaminate each other and accelerate the development of new projects.

This is because cooperation and multidisciplinary are at the basis of what is a project of requalification or regeneration of the urban territory. The professional figures will have to be multiple, such as designers, architects, engineers, sociologists, psychologists, botanists, etc. The territory is a complex issue both from a physical-morphological point of view and from a historical-cultural point of view; its interrelation with the permanent or temporary inhabitants transforms it and places it in different contexts.

The need is to respond to the various problems that develop in cities that are a container of interconnections. Authorities and administrations are therefore no longer called upon to act as the sole actors, but to open up to new methods of competence development. It is therefore possible to create relationships between the public and private sectors that will enhance the quality of projects in technological, environmental and social terms.

## **5. RE-DESIGNING: EXPERIMENTING WITH COMMUNITY LABS**

The concept of new living has become concretely linked to the concept of new design. The term design, often linked to the theme of building from scratch, has been transformed. Designing in contemporary times, especially in the field of planning and landscape, means rehabilitating, and therefore reviving places, objects and architecture. Hence the need to create forges of talents that give rise to multidisciplinary, dynamic and visionary working groups, known as Community Labs. In the field of re-housing, the experiment of the group called "La rivoluzione delle seppie" in Italy, specifically in the Calabria region, is an important one. Defined as a hyper collective, they are actually part of an international network of professionals working on the basis of creativity and innovation.

The story of this community of designers begins in 2016, in London, in collaboration with the London Metropolitan University where young students set themselves the idea of designing in a local context. The chosen location is the town of Belmonte Calabro, in the province of Cosenza, a small mountain village overlooking the sea.

The notion behind their work is transdisciplinarity, the community they form is international and sees the participation of both professionals and students, as well as the involvement of the local community. In 2017 the cultural association 'Le Seppie' was founded, a name that is not accidental, it takes its inspiration from a species of cuttlefish that has the ability to orient itself in the dark by using its tentacles to understand its surroundings. Thus was born the metaphor of knowledge 'learning by touching'.

They develop a basic methodology applicable to each place hosting the action, then define Glocal Tools, which are:

- Learning by doing
- Conviviality
- Participation
- Transdisciplinarity
- Horizontality
- Self-construction
- Experimentation
- Reuse

The didactic work is also supported by workshops called 'Crossing'. In 2018 the design workshop is developed with the theme of re-imagining the library of Belmonte, the idea is to involve the whole village and the reception centre of Amantea, the result is the creation of a space for discussion and meeting for new and old inhabitants.

In 2019 the association's board welcomes a new group of architects 'Orizzontale', young professionals with whom it activates a crowdfunding campaign for the regeneration of the former convent of the 'Casa delle Monache' in Belmonte. The building became 'Belmondo', the new headquarters of the 'Le Seppie' association, where the architects themselves were stranded due to the outbreak of the Covid-19 pandemic. Thus a new project was born, the pandemic became the source and inspiration for what is now 'South Learning' to allow students to experience an alternative reality to online teaching. A group of English students, at the height of the pandemic,

moved to Belmonte as the first experimenters. They thus became temporary inhabitants of the town, living its places and savouring its moments, and being able to study its territories up close.

The act itself is not only to create 'smart working' but to fully understand the concept of collectivity. Bringing students, the local community and professionals together in one place to exchange ideas and discuss territories. The only way to research is to experiment.

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