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## Greenways as a new potential for shrinking cities. The case of Milan (Italy)

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### Abstract

The paper aims to illustrate the transformation of Milan, focusing on its relationship with (urban) greenways. At the beginning of XXI century Milan was deeply converted into a mere service industry centre. The change modified also its territory. Brownfields took place of industries and logistic compounds, places without a use dotting its urban fabric. In the 1970s, visionary architects, planners, and landscape architects started to design a series of parks surrounding the town, creating a green crown fading its outskirts. North Park and South Park together with Boscoincittà (Wood-in-town) created a continuous green curtain setting the basis for a circular greenway. In the 1990s some studies, including the PhD thesis 'Post-industrial Green' by one of the authors and the academic research 'Metro-Bosco' by Stefano Boeri, demonstrated how Milan, while becoming a shrinking town passing from 2 million to 1.6 million inhabitants, could be transformed in a town where districts could be connected through green corridors. These theories, even if they had good dissemination and were widely published, actually didn't become real as Milanese Administration imposed an anachronistic policy based on the developing of new neighbourhoods, trying to 'sprawl' a city that actually was decreasing. This proposal however bore a series of radiant green corridors starting in the centre of Milan (Raggi Verdi -Green Rays, a project by LAND, 2005). In the second decade of the new Millennium, it was clear that Milan had to accept to decrease, enabling at the same time a way to foster the quality of life for its citizens. In the last five years, the new Administration's policy encouraged the abandoned areas requalification (actions 'Re-shaping Milan' 2015, and 'Re-shaping Milan', 2018-ongoing, developed with the Politecnico di Milano), and asked Italian Railways (Trenitalia) to 'give back' to the town six unused railways-yards encrusted in the city territory. This request, endorsed also by the common people - asking more and more green spaces and slow mobility in the town-, became real with the visionary plan "Fiume Verde" by Studio Boeri Architetti (Green River, 2016). This proposal designed a net of inner green corridors able to increase deeply the city green surface. In 2018, the first international competition to transform two railway-yards has been launched. One will be a linear park, the other will host the widest Milanese public park). The first concrete milestones for a green-way transformation of Milan.

### Introduction

The paper aims to illustrate the transformation occurring in Milan, focusing on its relation with (urban) greenways. At the beginning of XXI century Milan was converted into a mere service industry centre. The change modified also its territory. In the last 30 years, brownfields took the place of industries and logistic compounds. Places without an use were dotting its urban fabric. Authors want to demonstrate that Milan had a green heart and that the city nowadays' post-post-modern condition (no more industries within the city borders, and all the economy moved by trading, services and culture) brings the capital of Lombardy to be one of the greenest cities in Europe. Milan can count in its attractions one of the most ancient public parks in Europe, the 'Giardini Pubblici' (Public Gardens) opened in 1784 by Austrian Government to bring into Lombardy the grandeur of Vienna. After almost 200 years, Milan started to face the problem of

the loss of its green structure overwhelmed by the continuous growing of the urban fabric. The answers were two wide parks devoted with the idea of reforestation that created a new definition of the outskirts of the Lombard metropolis: Boscoincittà ('Wood-in-the-town') coming out from the requalification of former agricultural fields and Parco Nord Milano (Northern Milan Park) renovating the brownfields left by heavy industry. Both of them were and are dedicated to recreational use and improved the quality of life of the people living in Milan. At the end of the XX century a new series of parks, at a district scale, replaced some former derelict industrial areas, left in various places inside the historic urban context of Milan. Finally, in the last ten years Milan has regenerated itself changing its skyline, but this kind of 'revolution' brought a quantity of new parks and opens spaces always in direct connection with the built environment both committed to residential or office use. This paper illustrates this time line, reporting and discussing how the green open spaces have changed Milan, an un-expected green growing city, creating the basis for a continuous urban greenways network.

### Green as Post-Modern and Post-Industrial Heritage

Going through a general review on the urban history, the characteristic of urban-, industrial-, agrarian-, and natural landscapes have to be discussed. Ecology, sustainability, resilience, and the new general environmental awareness are increasingly influential with regard to the design of public-use landscapes. Since the 80s industrial wastelands, former mining regions and urban voids between housing developments and highways have been designed by landscape architects. Gilles Clément gave us the definition of the "Third Landscape", which has the potential of preserving biodiversity. Facing the post-industrial towns' transformation, the idea of developing abandoned spaces into valuable environmental-friendly living spaces permits a balance between the ecological issues and urban development (Fabris, 1999). The André Citroën Park in Paris, realized from 1988 to 1992 by Gilles Clément and Alain Provost on the site of a former car factory, is a playful design which is different from any other Parisian greens with its obliquely arranged, rectangular lawns, a white and a black garden and a square where children can run through water fountains. Architectural elements, water features and plants form the park as a poetry of severity and wit. In 1988, also in Paris, landscape architect Jacques Vergely and architect Philippe Mathieux presented the Promenade Plantée, one of the first urban greenways realized by transforming a former railway. The fortunate High-Line in New York (2009-2015)<sup>1</sup> pays tribute to this primary reference. Just few years later, in Germany, the Duisburg Nord Landscape Park, designed by Peter Latz, and the Lausitz Region in Brandenburg, full of abandoned coal mines, have been revitalized through reforestation and landscape design, creating new green corridors networks nowadays present in the areas formerly developed by IBA Emscher Park (1988-1999) and IBA Fürst Pückler Land (2000-2010) (Fabris, 2004; Fabris, 2009). If we move our focus from Europe to the USA, the Gas Works Park in Seattle, which was designed by the landscape architect Richard Haag - who won the American Society of Landscape Architects Presidents Award of Design Excellence for this project - is an unusual public park located on the site of a former coal gasification plant, on the shores of Lake Union opposite downtown Seattle. The 19-acre site was acquired by the city in 1962, seven years after the plant shut down, and opened to the public as a park in 1975. Gas Works Park is studied in every survey of twentieth-century landscape architecture as a modern work that challenged modernism by engaging a toxic site and celebrating an industrial past. Haag's work with ecologists and soil scientists in his landscape remediation and reclamation projects opened new areas of inquiry into the adaptive reuse of post-industrial sites. As a way to describe his design philosophy Haag encapsulates the correct approach to design in just six words: 'Space-Scale-Circulation-Earth-Water-Plants', combining the generative power of Nature with the

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<sup>1</sup> A project by architects Diller, Scofidio and Renfro in collaboration with landscape architects James Corner (Field Operations) and Piet Oudolf.

volitional nature of all human activity (Fabris, 2010). All the examples reported have in common networks of (urban) green corridors, the most part of them combining slow connections (walking and bicycle lanes) with plants (from simple floor-beds to reforestation high trees) permitting new fluxes of biodiversity through the consolidated urban fabrics.

### The Milanese Green Outskirt Connection

Parco Nord Milano<sup>1</sup> (Milan North Park) despite its great extension, is a real urban park that connects greenery coming from different heritages. Derelict industrial areas, a former airport area, and country fields combine to create a complex and varied park network connected by a wide series of pedestrian and bicycle paths. Meadows and woods find place together with horticultural gardens, light sport activities services and wildlife sanctuaries over a surface of 680 hectares, completely surrounded by one of the densest urban fabrics of Europe. Parco Regionale Agricolo Sud Milano<sup>2</sup> (South Milan Regional Agricultural Park), as its name suggests, was founded by Region Lombardy to save a fascia of agricultural land from the urban sprawl, a kind of green buffer zone between Milan and the others commons. This park is the widest of Milan and it's the less structured as its reason is to maintain near the metropolis a green ring devoted to cultivations (as the ancient rice-fields) otherwise condemned to disappear. The interaction with the visitors happens through wandering paths that permit visitors to experience country life at less than 30 minutes walking from the centre of Milan. Boscoincittà<sup>3</sup> (Wood-in-town; Fig. 1) has another 'name-programme'. The idea was to offer a few minutes from Milan centre the experience of a real wood, created with the reforestation of former agricultural areas abandoned for years. This very simple programme had a sudden success that brought through the expansion of the initial Boscoincittà a greater complex of parks devoted in giving new life to derelict areas: Parco delle Cave<sup>4</sup> (Park of Pits) and Parco dei Sentieri Interrotti (Park of the Broken Paths). This system offers different recreation activities, from the most 'urban' as the real vicinity park to the wild emptiness of the prairie, just in a walk of few kilometres. While the parks have succeeded in giving the citizens of Milan the kinds of recreational activities they have requested, none are actually supported by the City of Milan administration.



**Figure 1. The cycle-pedestrian path in Boscoincittà, photograph by Luca MF Fabris (2004).**

<sup>1</sup> Parco Nord Milano covers an area of 680 hectares; website: [www.parconord.milano.it](http://www.parconord.milano.it)

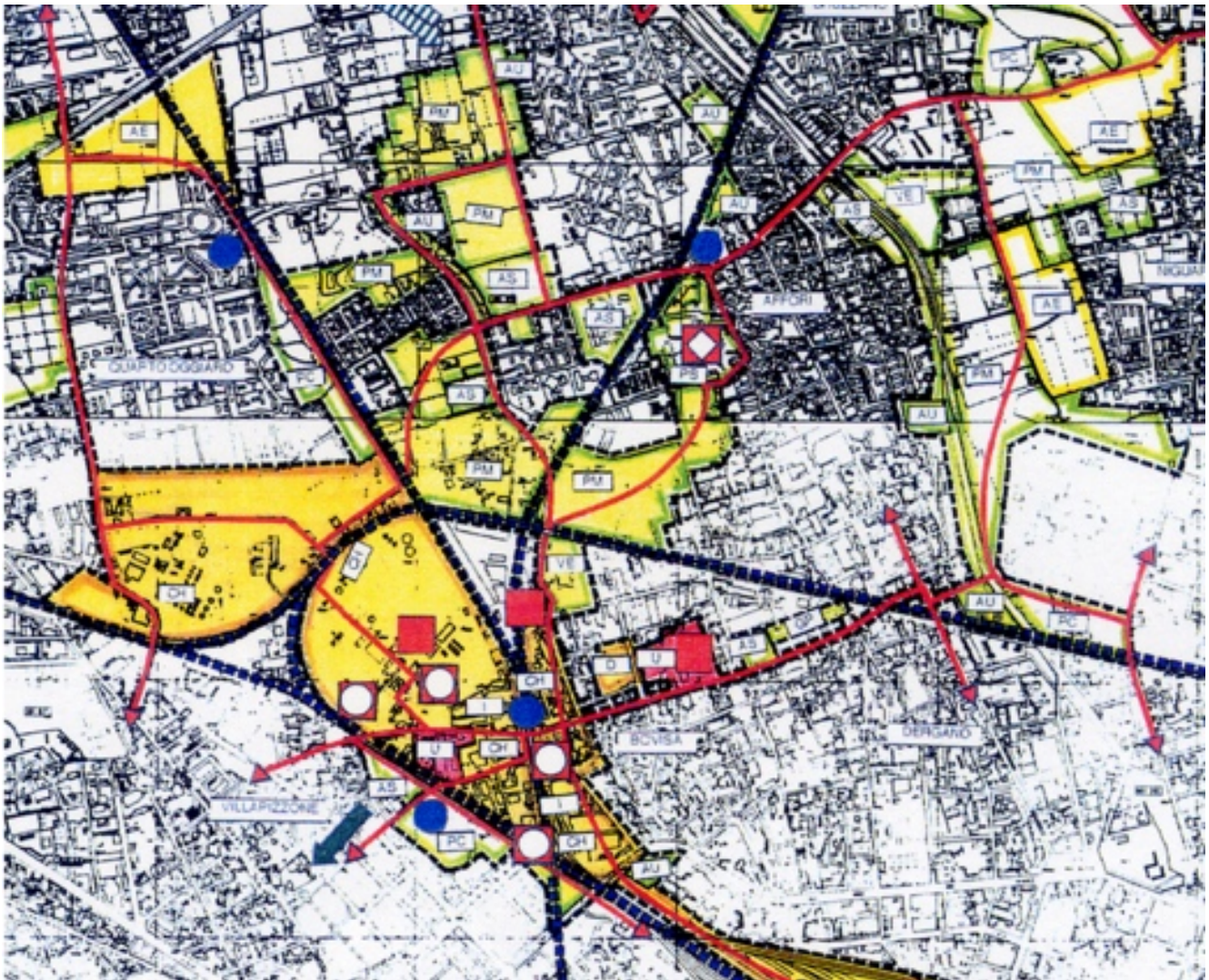
<sup>2</sup> Parco Agricolo Sud Milano covers an area of 46.300 hectares, website: [www.parcoagricolosudmilano.it](http://www.parcoagricolosudmilano.it)

<sup>3</sup> Boscoincittà covers an area of 110 hectares; website: [www.cfu.it](http://www.cfu.it)

<sup>4</sup> Parco delle Cave covers an area of 135 hectares; website: [www.cfu.it](http://www.cfu.it)

### Projects for Milanese Greenways at the end of XX century

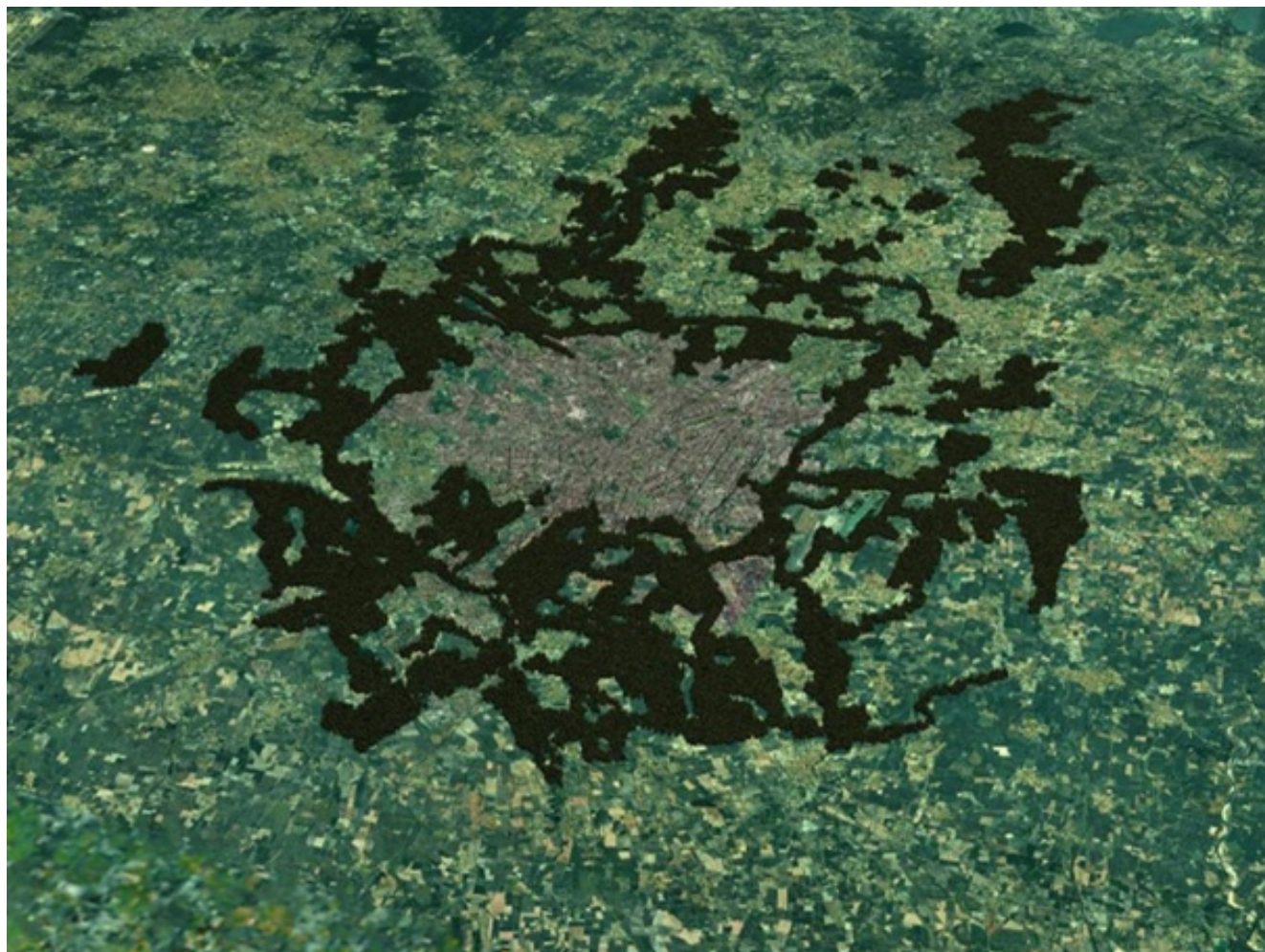
In fact, even if the times for a change were right, Milan took time to understand that an era was finished: at the end of the '90s of last century the town was all in all a post-modern city. The PhD Thesis 'Post-industrial Green' (1996, published in 1999), developed by one of the authors – Luca MF Fabris –, has been one of the first attempts in Italy in bringing together environmental design and landscape architecture to demonstrate the opportunities related to the reuse of derelict industrial areas. Starting from the analysis of several international case-studies, Fabris proposed for Milan the creation of a green corridor connecting all the brownfields existing in the town's territory, creating a network of cycle-pedestrian paths that converge in the heart of the historic centre (Fig. 2). One of the most relevant results of this study has been having proved that “soft” green corridors built with naturalistic engineering techniques and the participation of local residents were possible without great works and costs.



**Figure 2. Detail of the Greenway in Milan-Bovisa post-industrial area, PhD Thesis project (LMF Fabris, 2006)**

Ten years later, the Province of Milan asked Stefano Boeri, at that time director of Multiplicity Lab at Politecnico di Milano, to develop a plan of an “ecological network that aims to achieve physical, social

and cultural connections capable of making our province more liveable”<sup>1</sup>. The “Metrobosco” (Metropolis’ Forest, Fig. 3) proposal presented by Boeri connects the already existing natural areas, including the Parco Sud, which “represent the ideal integration between environmental protection and productive development”<sup>2</sup> for the realization of a new sustainable metropolitan area model (Boeri, 1996 and Boeri, 2010).



**Figure 3. ‘Metrobosco’, a project by Multiplicity (director: Stefano Boeri), Politecnico di Milano (2006, courtesy SBA).**

Another project for a new network of pedestrian and cycle paths that enriched the Milanese urban fabric with greenery to improve the movement in the city and the daily life of all citizens has been the ‘Raggi Verdi’ one (Green Rays, 2007). The Green Rays (Kipar, 2009) was designed to include linear open spaces shaded by thousands of trees “where one can walk, laze, run, ride a bike enjoying the green already present on the Milanese urban territory: a garden, a tree-lined square, a neighbourhood park, a large park urban”<sup>3</sup>. The project originated from the Milanese Metropolitan Interests Association (AIM) with Studio Land

<sup>1</sup> Provincia di Milano’s press-release for the launch of Metrobosco project (July 13, 2006). Unfortunately, the project vanished and has never been realized.

<sup>2</sup> Ibidem.

<sup>3</sup> Press release, City of Milan and AIM (May 27, 2007). Most part of the project has been unattended.

(landscape architect Andreas Kipar) and was proposed to the City of Milan which included it among the programs to be developed in relation to the candidacy for the 2015 International Expo (Fig. 4). The project included 8 Green Rays of an average length between 7 and 12 Km. On the map, each radius, starting from the city centre, arrives at one of the large urban or peripheral parks already present in the Milanese belt. In fact, all these projects were completely unattended, but the ideas they proposed were seeds that have remained alive for more than a decade, adding to the development of other proposals to create a real green corridors' network in Milan.

In the meanwhile, some central former industrial areas in Milan finally were ready to be integrated in the urban fabric, it was clear that after years of abandonment the wild greenery had transformed these areas from the inside. Nature operated over these derelict areas with a power and a smartness that human beings cannot have, revealing what Germans researchers called 'Industrienatur'<sup>1</sup>. So, it was decided to intervene on these post-industrial areas, maintaining part of them as a "memory" of the past, and renewing the rest. The Rubattino Park<sup>2</sup> and the OM Park<sup>3</sup> are the best examples of this new way to realize green spaces in Milan (Assessorato all'Urbanistica del Comune di Milano. 1995). Due to their dimensions, they are really suited to local interaction, and respond to the needs of families and the elderly.

#### Urban Greenways as future for Milan

At the beginning of the new millennium, Milan had to face not only the change from post-industrial to post-post-industrial town, but also the economic recession that crossed all the world during the last decade. This picture in motion contains also other elements. The City of Milan managed, finally – after 50 years – to adopt a new General Master Plan that approaches green and open spaces as important features of its urban fabric. In 2015 Milan became EXPO City, embracing sustainability, agriculture and food-culture as its credo. These new ingredients modified 'on the rush' the city structure of a town that wanted to change also its life-style, not only committed to economics, but also to the quality of untouchables features such as wellness and happiness. This new stream of the Milanese life vision is possible to be seen in the new public green spaces as the CityLife Park<sup>4</sup> (when completed, the it will be the major public park in inner Milan), the Portello Park<sup>5</sup>, and in the new 'Library of Trees' Park<sup>6</sup>.

All these parks are part of a requalification processes. All these projects integrate different district zones in the most valuable parts of Milan, and they will be part of the forthcoming greenways network of the Lombard town. But what happens in the outskirts of the town? Even there the way to approach derelict areas changed. The city of Milan, despite is fortune in the international tourism panorama, has become a shrinking town, loosing population decade after decade since the '70s, passing from 1,7 million (1971) to 1,3 million inhabitants of today. Opening a new chapter for his history, the City of Milan decided to bet on the potentials present in forgotten places, transforming them into parks, as happened with the "Giardino

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<sup>1</sup> Noun invented by the team of IBA Emscher Park (Director Karl Genser) to describe the transformation operated by Nature on the derelict industrial areas.

<sup>2</sup> Parco Rubattino (former Maserati Industries area) covers 27,4 ha, but it's still not completely built. Project by Andreas Kipar, Land Milano.

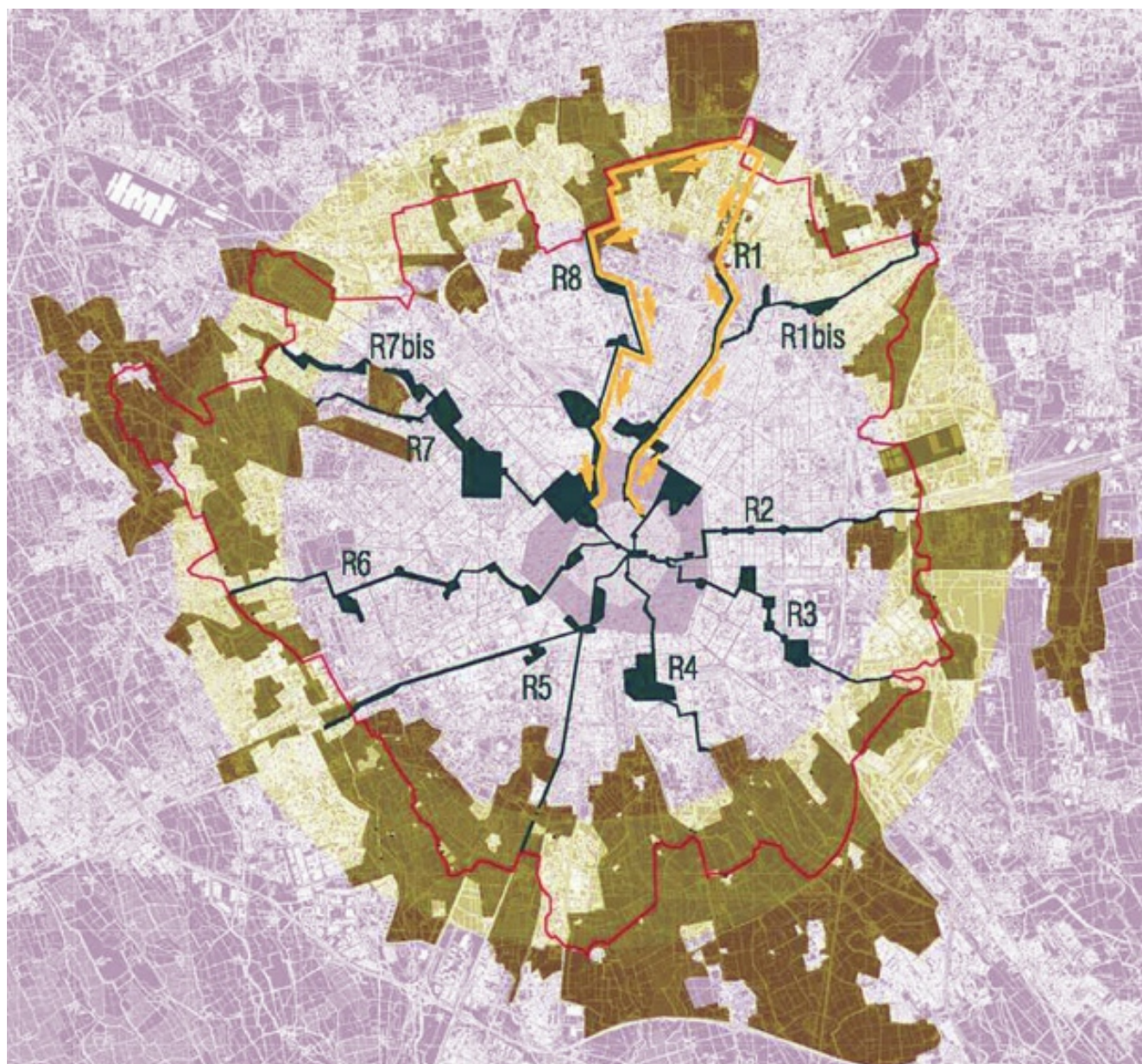
<sup>3</sup> The 'Parco delle Memorie Industriali'(Industrial Memory Park) known better as OM Park (in the area there were the OM Lorry Industries) covers 31,4 hectares. Project by Andreas Kipar, Land Milano.

<sup>4</sup> The CityLife Park (2016-ongoing) will cover when completed an area of 17 hectares. Project by Gustafson Porter.

<sup>5</sup> The Portello Park (completion 2018) covers an area of 7 hectares. Project by Andreas Kipar, Land Milano and Charles Jencks.

<sup>6</sup> The "Library of Trees" Park (opened on Fall, 2018) covers an area of 9 hectares. Project by Inside-Outside (Petra Blaisse).

Franca Rame” (Garden Franca Rame, Fig. 5)<sup>1</sup>. A simple and well-designed green structure that offers new recreational and connections spaces for a part of the town actually lacking of open and green areas.



**Figure 4. The Milan ‘Raggi Verdi’ (Green Rays) Plan by LAND (2007), courtesy LAND.**

In the last five years, the new Administration’s policy encouraged the abandoned areas requalification (actions ‘Re-shaping Milan’ 2015, and ‘Re-shaping Milan’, 2018-ongoing, developed with the Politecnico di Milano), and asked to Italian Railways’ Sistemi Territoriali<sup>2</sup> to ‘give back’ to the town seven unused railways-yards within the city territory. This request, endorsed also by the common people –asking more and more for green spaces and slow mobility in the town-, became real with the visionary plan “Fiume

<sup>1</sup> The Franca Rame Garden (opened on Spring, 2016) covers an area of 6,2 hectares. Project by Studio Franco Giorgetta.

<sup>2</sup> Sistemi Territoriali (Territorial Systems) is the incorporation. part of the Italian Railways Group, that owns the Italian railways stations’ compounds.



Verde” (Green River, 2016; Fig. 6) by Stefano Boeri Architetti. This proposal designed a net of inner green corridors able to increase deeply the city green surface: “The Green River is a project of urban reforestation that aims to achieve on a 90% of these seven former railways-yards a continuous system of parks, woods, oasis, orchards and gardens for public use - linked by the green corridors and cycle paths built on the railroad tracks” says Stefano Boeri, explaining that “The Green River will cross the urban body of Milan ... a unique opportunity to rethink Milan, combining urban development with the presence of continuous and accessible green systems, which improve air quality and ensure the protection and multiplication of urban biodiversity”<sup>1</sup>. It is estimated that in one year the Green River will absorb 50 thousand tons of CO<sub>2</sub> and will produce 2 thousand tons of oxygen with total area of 1 million 100 thousand square meters of parks, hills, clearings and meadows. In 2018, the first international competition to transform two railway-yards was launched. One will be a linear park, the other will host the widest Milanese public park. The first concrete milestones for a green-way transformation of Milan.



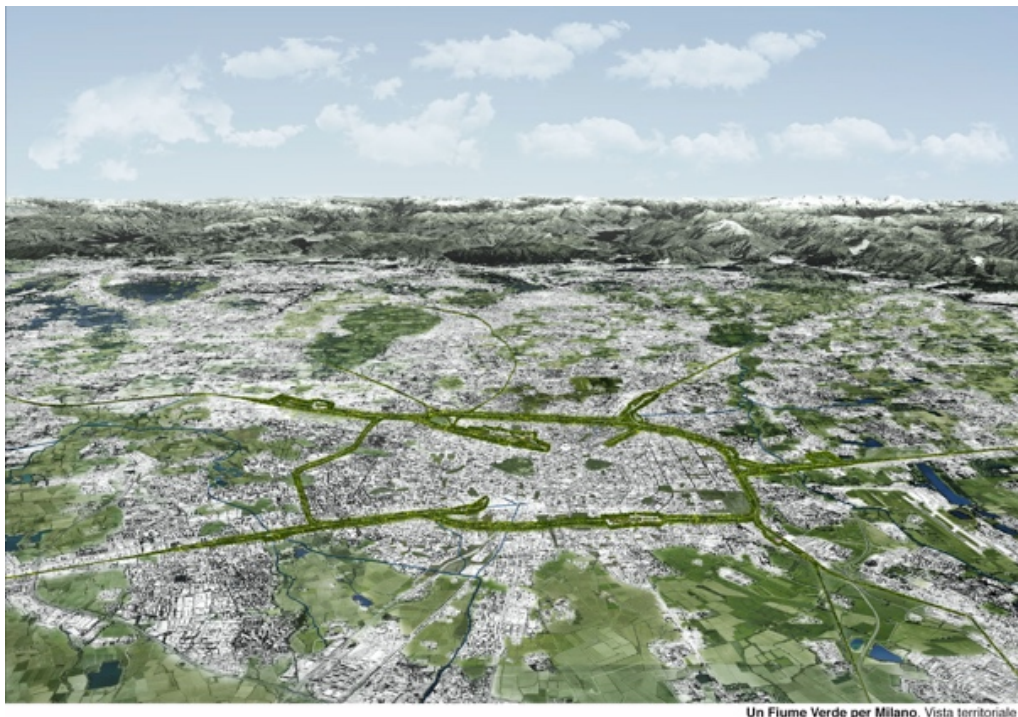
**Figure 5. A view of the ‘Franca Rame’ Gardens by Studio Franco Giorgetta (photograph by Luca MF Fabris, 2016)**

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<sup>1</sup> Press Release, Stefano Boeri Architetti Associati, April, 2017.

## Conclusion and Discussion

This paper focuses on the history of public green spaces in Milan and suggests that they can be seen as clusters that originate a wide greenways network at the urban and suburban scale. What is evident is the lack of a strategy and a policy proposal by the City of Milan administration during the last 30 years of the XX Century (Fabris, 2012). All the facts regarding the transformation of the Milanese urban fabric followed economic reasons and market dynamics, and the brownfields that dotted the Milanese territory had been integrated in the Urban Master Plan as ‘green area’ as this was the simplest way to manage public spaces that investors didn’t want to trust during a long period of economic uncertainty. This lack of ideas from the Administration produced on one hand an abundance of researches by the academics (Administrators asked the University researchers several analysis and project proposals about the future scenarios of Milanese abandoned areas) and on the other hand blocked any development of the areas, that were preserved in a state of limbo. At the beginning of the new Millennium, finally Milan managed to approve the new ‘Piano di Governo del Territorio’ (General Master Plan, 2012) including in the urbanistic plans most of the ideas and the contributions developed during the last decades. The planning instruments now are operating for the protection of all the post-industrial areas, scheduling their conversion in real public green areas, connected by slow mobility and devoted to reforestation. Almost incredibly, the shrinkage of population and the increasing of post-industrial derelict areas created the possibility for a greener future for the City of Milan. As a result of this research work, we can have two outputs: the first is that sometime the ‘immobility’ of the governance it’s better than any wrong choice, the second that ‘political and strategies indecisions’ bring scientist to propone and disseminate ideas and projects that can really influence both the politicians and the citizens, creating new expectations and high attention on themes such as sustainability and resilience. If Milan is now ready to transform itself in the ‘Green River’ town, it is also thanks to this anomaly.



**Figure 6. Fiume Verde (Green River) for Milan, a project by Stefano Boeri Architetti (2017, courtesy SBA)**

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