Urban acupuncture, a proposal for the renewal of Milan's urban ring road, Milan, Italy

1. Premise

This case study illustrates the work carried out in the period comprised between December 2003 and January 2004 for the occasion of the competition *Celebration of Cities*, an international competition open to architects and students of architecture, organized by the UIA – International Union of Architects - and launched in October 2003, that has, moreover, received the support of the UNESCO. The plan for Milan turned out to be the winner in the professional category, receiving the *Grand Prize* after a double selection, one local and one international, in Paris, among numerous proposals elaborated by architects and architectural firms from twenty nine countries all over the world. What is the *Celebration of Cities*? It is an initiative, the first of a series, desired by the UIA president himself, Jaime Lerner, with the aim of stimulating architects from all over the world to formulate an idea for their own city, in order then to involve the public administrations of those same cities, in a transformation process of the *bottom-up* type.

The city is the greatest invention of mankind (…). Today over half the world's population lives in cities and urban agglomerations. In comparison with life in the country, life in cities definitely seems more promising, because the latter offers inhabitants possibilities not only of an economic nature but also cultural which do not exist in the country (...). Nowadays, especially in developing countries, cities and particularly large cities and metropolis continue to be an attraction for the rural population although they no longer have as much work to offer, at any rate not in the formal sectors of the economy (…). Despite their insufficiencies and their dangers, cities and agglomerations have to be accepted as a reality which cannot be replaced by fiction or a utopia the future of which will always be uncertain (…)[1].

In synthesis, the city, although in crisis, is the answer to the necessities and the problems of territory and society. The city is *necessary,* both as the product that permits urban regions to compete among themselves, to attract investment, and as the energizing idea behind development, as a physical and cultural zone in which people can recognize themselves, meet each other and establish themselves.

The competition considered the subject of the crisis of city centres, and required the formulation of an easily realizable project, able to improve the relationship between man and his environment, whilst capturing the imagination of the cities. The proposals had to face various kind of problems: environment, industry, commerce, roads, transportation, public safety, services, communications, urban regeneration, public spaces, etc. with particular attention to the topic of the environmental sustainability. The subject of the project had to propose a type of action which enabled the city to react, involving the improvement of entire districts, while creating chain reactions. Reactions that, in turn, act by changing the running of the whole. A real *urban acupuncture*.

2. Introduction to the subject of urban acupuncture

Urban acupuncture is neither a discipline, nor a project technique, but a philosophy of approach to a few territorial and societal problems. It is seen from various viewpoints as a possible answer to the requirements of the bettering of the urban environment. By nature it does not contrast with urban planning in the traditional sense, as it is the latter that governs the territory, as well as having the shared necessity of adjusting planning instruments *to the times.* But urban planning is a process that, even at its best, cannot produce immediate

change; by its very own nature it requires extremely complex decisional processes and long time frames. Urban acupuncture, is spawned by the necessity to achieve sensitive effects in shorter time periods with respect to planning, and operates principally within structured contexts. If we consider that city structures, especially in European cities, are extremely defined, the operating possibilities of planning within these consolidated environments are extremely reduced[2], except perhaps on some occasions offered by the demission of huge industrial sites or areas destined to outdated infrastructures. It is now common opinion that no administration can lead operations of radical territorial transformation any more, so the route to follow is tied more and more to re-enhancing the existing environment. As such, it is not by chance that the efficacy of planning instruments moves from quantity to quality, to the total number of characteristics that an urban environment must offer, both at a local level and at broader level. Environmental quality becomes an essential element in the competition between urban systems[3].

In urban centres, the only possible intervention is through pointed operations, or networks of points, by trying to create *a system*, through small seams and interventions of substitution. The process of city regeneration passes through the recovery of those that Ignasi de Solà-Morales calls *terrain vague*, areas without clear boundaries, without current use, vague and of difficult understanding on the part of the citizens, that usually constitute a tear in the urban fabric. But they are also available areas, full of expectations, with strong urban memory, potentially unique, the space of the possible, of the future. In recent excerpts, the author speaks of city acupuncture through which the point which constitutes the intervention, induces an improvement which is not directly governable. According to the author, catalytic procedures on a small scale are possible in relatively short time frames, and are able to obtain the greatest impact on the environment in the immediate vicinity.

As Jaime Lerner asserts, a*ccording to the very principles of acupuncture, these lines of action must be simple, produce an immediate effect, at reasonable cost and applicable to any situation to facilitate the daily life of citizens as well as to cope with urgent needs, be it in the heart of cities or in peripheral areas*. These principles express the difficulty to conceive city utopias and, in the action for the city, they look for something completely different from the past because they imply near and present perspectives. In order to better clarify the concept, Lerner explains *(…) the city is hit, but of it, it benefits all the Country. Sting the park with a needle and of it benefits the whole metropolis*.

Rem Koolhaas, in turn, invokes a town planning approach that will not be based on order and omnipotence, but that will be the representation of uncertainty, it will not take care of organizing objects more or less permanently, but will irrigate territories with potential, not stable configurations, but creating fields of possibility. Some municipalities, for example, in the last few years, have begun a series of initiatives with the aim of qualifying degraded areas to takeover of valuable functions, even in peripheral areas, betting on their ability to generate quality in their surroundings and in successive phases.

Interventions of this type are exemplified by the Guggenheim of Bilbao and the Pompidou Centre in Paris, the Grand Central Station of New York and the Pampulha Complex at Belo Horizonte, pointed interventions that led to real revolutions of the city fabric. In order to understand the meaning, even the social meaning of this philosophy, there are no better examples than those created by the very same Jaime Lerner, in Curituba, Brazil. A series of simple measures have led to an extremely efficient and cheap city public transport system, incentives for differed waste collection through logics of convenience, the re-enhancement of the favelas through participation and information, and the construction of an infinity of small urban parks, even in the most degraded zones[4].

Also through the concept of *integrated urban planning,* as spoken about by Nan Ellin, there is the necessity of placing attention on border areas, seen not as areas of separation, but as dynamic membranes through which interactions and transformations can occur. *In ecological terms, the limit is always the livelier and richer place because it is there that the forces of different systems meet each other, where the effects of a network can occur*. This approach emphasizes the connection, the communication and the social life. To integrate the

plan with nature, the centre with the periphery, the process to the product, the local character to the global forces, increases the participation of the citizens.

3. A short outline of Milan

Milan is a city whose industrial and commercial vocation is emphasized by its strategic territorial position. It is in the middle of important routes leading from the north of Europe towards Africa, and from "Columns of Ercole" on the Spanish coast, towards the New Eastern Europe. The roman name *Mediolanum* means *in the middle of lands*; the history of this city, its past - present - future are closely connected to its etymology. This is not a suitable context for outlining the main steps of the millenarian history of Milan, but some data concerning to its more recent past allows us to better interpret the present and to delineate a hypothesis for the future - a planning hypothesis.

During the last thirty years the city has shown a countertendency with respect to other urban conglomerations. There has been a progressive demographic decrement that has varied the resident population from approximately 1.8 million inhabitants during the seventies, to 1.3 million today. This emptying phenomenon has corresponded to a constant increase of the population of the city's hinterland, currently accounting for approximately 2.2 million inhabitants; this makes the Greater Milan population approximately 3.5 million, in the middle of a metropolitan area of some 7 million inhabitants that extends north to the Swiss border (Fig. 1). The reasons for this phenomenon are numerous and complex. One particular reason above all, that can perhaps be taken as a partial explanation, is that a large part of the population leaving Milan has been attracted by the opportunity of a life outside the city but near to it, thus enjoying both the best environment quality offered by country life and the cultural and economic advantages of the city areas. One of more obvious results linked to this phenomenon is, on the one hand, the excessive territorial consumption by building, on the other hand the large amount of movement that attracts approximately eight hundred thousand cars to the city on a daily basis, in addition to approximately eight hundred thousand already present, priming a continuous worsening of both the sanitary and aesthetic conditions of the city.

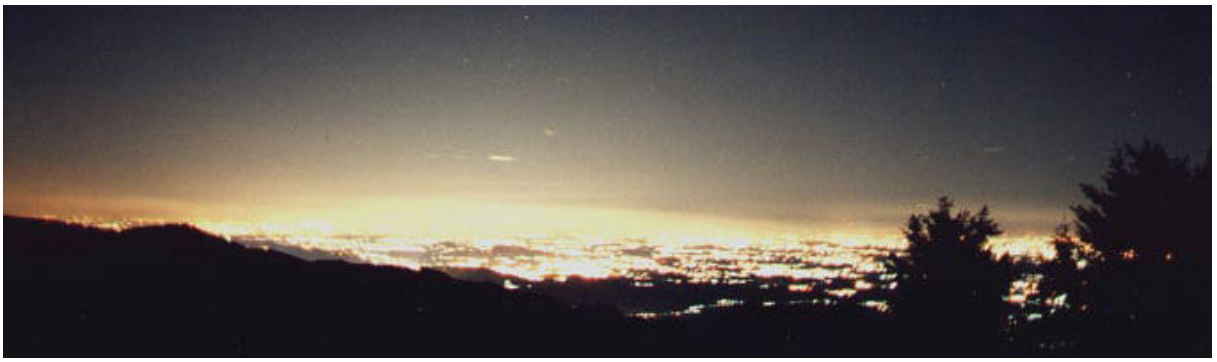

Figure 1. Milan from Monte Generoso (Ticino, Switzerland); distance 50 km. – www.ticino.com

The progressive deterioration of urban environmental quality has surely been one of the main causes of the exodus described above, and the challenge for the future of this city, as for other large cities, is to be able to unite the services, facilities, and opportunities offered, with a good level of environmental quality and public spaces, which act as the physical container to social life. This must be in accordance with the principle of the economic sustainability of the choices that guide the territorial transformations, creating projects that are to feasible, so that the city of the future is not just a *"paper city",* consisting of large projects that are destined to stay on paper. As with many other cities that have an important industrial past, Milan has sacrificed a large part of its city territory in the name of development. An example of this is the closing over of the city water canals designed by

Leonardo da Vinci; this started in the beginning of the twentieth century due to sanitary reasons, but it also allowed the accessibility of the city centre by car, with the loss of a unique example of what now everybody agrees defines *sustainable mobility.*

This city always has been, and is, the engine of the Italian economy, perhaps the main one. Starting from the beginning of the eighties, the economic conversion from the industrial system to the tertiary sector led to the abandonment, and the consequent availability, of large urban sites, both in proximity of the city centre and the periphery. Subsequently extensive re-enhancement programs have allowed the building of residential quarters, and the establishment of precious institutions, such as universities and theatres and new urban parks. In particular, through *Programmi di Riqualificazione Urbana - PRU* (Urban Re-enhancement Projects), promoted from the nineties on by the national government. A season of city fabric renewal has taken place, involving, in particular, ten urban environments for a total surface area of 1.7 million square metres of abandoned sites, including a consistent contribution on the part of the private sector.

However, these interventions are isolated; they are lonely episodes that have surely yielded many advantages in the immediate surroundings, but that lack the force of a system, and that do not constitute points of a useful network. *These urban interventions show that the city is considered in different parts, that the interventions respond to separate logics and to an episodic procedure in which it is difficult to find a uniting thread, and to distinguish a public government project. Above all, it denotes the absence of an orientation for urban development in the coming years*[5]. In a certain sense perhaps it can be said that the re-enhancement process of ex-industrial areas cannot be considered completely finished and a further margin of improvement exists.

4. Analysis of the urban structure

The project presented to the UIA for the participation in the international competition starts with these, and other, considerations. The chronic lack of public spaces which are adequate for the dimension of the city, invites one to reflect on the unexpressed potentialities of some wide and empty city spaces. In particular, the project is stimulated by the suggestion offered by the availability in the Milan territory of a currently used transportation infra-structure, now exclusively used by automobiles. The *external ring road*, as it is commonly defined, is the most external ring comprised in the city road network, and is a partially forgotten resource. Nevertheless it represents a great opportunity.

The town planning scheme of Milan is of a radial shape, referring to a circular configuration of medieval origin. The street structure is composed of concentric rings that correspond to subsequent developmental phases, and by radial axes, starting at the city centre and branching off along the main territorial routes. The external ring road historically represents the city border, planned at the end of the nineteenth century (Fig. 2a and 2b).

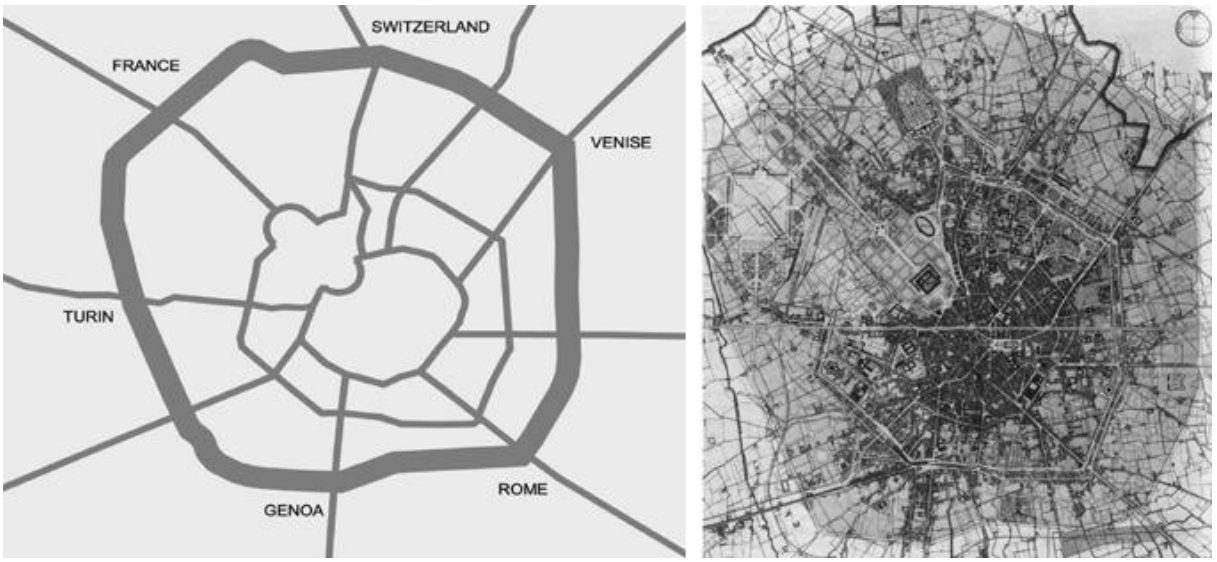

Figure 2. The Milan urban city structure (a)and the master plan of Cesare Beruto, 1884 (b).

5. The ring road of ideas and possibilities

The extreme border of the city, before reaching the countryside, was imagined by the planner Cesare Beruto as a continuous sequence of urban avenues surrounding the city centre, with a linear extension of twenty kilometres, maintaining almost always a constant section of forty meters. A monumental double line of plane trees was located on a central parterre of fifteen meters, and placed as a separation between the two different roads for cars. Most probably, the initial intentions of the planner for these avenues, represented a place for city walks along side the countryside. However, the border area characteristic of the *circonvallazione esterna* has been conserved until our times, and now the avenues often constitute a barrier between two portions of the city born in successive stages, limiting and excluding the contact between the two parts. To the inside the city of blocks, characterized by closed elements. To the outside, starting mainly in the fifties, a city with a more open structure was developed, where sometimes buildings leave the street curb.

Probably, at the end of the nineteenth century, nobody could have imagined that the spaces destined to streets would have been assaulted this way by automotive traffic. Using a paradox, it would be possible to define this ring road as a new curtain wall, whose parts are built, instead of with bricks and stone, with the metal of running cars; surely one of the most unwelcoming places of the city. In fact, the ring road is principally characterized by three different uses: firstly, it is the place dedicated to private vehicular mobility, which is located on the two lateral tracks. The tree lined central parterre, on the other hand, accommodates either a space dedicated to the parking of cars, lacking clear regulation, or, for approximately fifty percent of its length, the service of public transport, sometimes for buses, sometimes for tramways, without any real continuity. Light traffic, pedestrians and bicycles, where possible, move on the two lateral paths; there is no more than fifteen percent of the total space dedicated to this type of movement (Fig. 3).

Notwithstanding, this space represents a great opportunity.

Figure 3. Current use of the external ring road.

The territory is a limited resource, hence it is precious and requires intervention with regards to issues such as the quality of the environment, sustainable choices and recycling. The project presented to UIA proposes, in addition to the outer ring's innate use as a vehicular movement route, new conditions of mobility that should be created, amplifying the possibilities of use of the ring road. It is therefore rethought as a connecting public space, a continuous link between the centre and the peripheral quarters, as a stimulus for their regeneration.

6. A surrounding centre, analysis of potential.

Passing through parts of the city that differ in history and character, the outer ring meets areas of interest, such as urban gardens and large squares, sports and cultural facilities and unused industrial areas; places generally of recent interest to new projects, which represent many occasions for potential recovery: these are the resources of the system. One of the most interesting aspects addressed by the project is, in fact, the systemic potential of this infrastructure, in order to link distant points, along with the ideas for renewal initiated in the last few years (Fig. 4a).

As it is commonly defined, the *circumference* is the area of equidistant points from a fixed point called centre; this notion of equidistance, and therefore of equivalence, introduces a second aspect strictly connected with the shape of this infrastructure. The ring road is a baricentric place for the city; it is placed exactly in the middle between the centre and the urban periphery. It is maybe not wrong to assert that an eventual renewal is able to bring the same benefits to the central districts and the periphery, this, according to a direct relationship of proportion with distance, in other words in a democratic way.

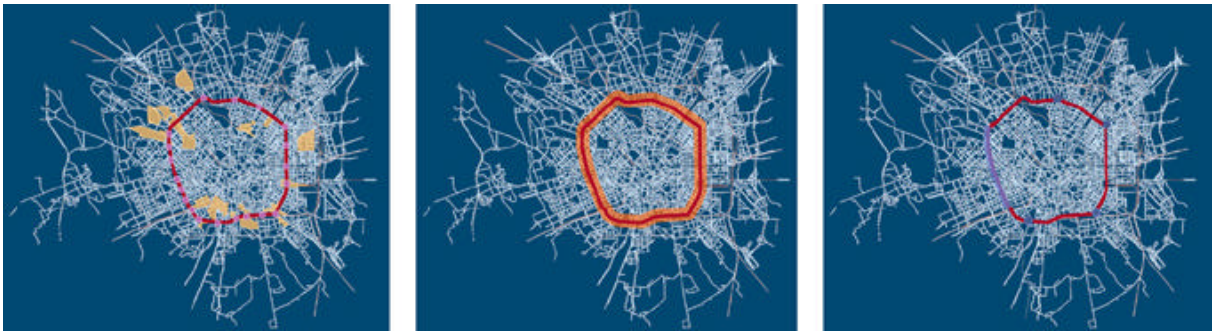

Figure 4. Resources of the system (a), radius walking distance (b), underground limits (c).

Let us consider a distance of 500 meters as the maximum distance for pedestrian accessibility to a place. This results in an accessible surface area of 2.000 hectares, a huge territory, equivalent to about ten percent of the whole urban territory. Moreover this part of the city is characterized by high demographic density, where approximately two hundred fifty thousands people live, about twenty percent of the total resident population (Fig. 4b). In concrete terms, there are four different kinds of benefits strictly connected to this operation: *urban and architectonic* (a), *environmental and transportation* (b), *social* (c), *economical* (d).

a) The urban and architectonic benefits are evident in the renewal of this “never ending” sequence of avenues, spaced out with squares and gardens as hypothetical centres of the middle peripheral districts. In the same category, there is also the institution of a new urban gate, to a greater historical centre. Along the ring road it is also expected that the substitution of old buildings could take place, allowing it to become the backdrop for new architectonic expression of the city.

b) Of an environmental benefit, better acoustic and visual comfort of improved traffic regulation; at the same time a better organisation of the street space can bring about an improvement of the urban landscape. Furthermore, the possibility of creating a generously dimensioned pedestrian corridor improves the environmental quality of the city. Thus the completion of the circle line of public transport with a single, ecological and modern system can also improve the use of the whole urban net of public transport with a clear and undeniable benefit for the environment.

c) From a social point of view, the regeneration of the outer ring road stimulates the participation of people in finding the space for the expression of new ideas and possibilities. Improving the use of public space can help to aggregate people, and to fight the phenomenon of social alienation.

d) Finally, the economical benefit of this operation is mainly connected to the possibility of building new underground parking areas and to the opportunity of a commercial exploitation of the space above the ground.

7. The renewal project

The idea of a *surrounding centre* for the city of Milan is based on the attractive potential of the outer ring road. Through the use of the expression *centre* as synonymous of urban quality, a new central area is placed around the actual city centre, offering the characteristic of new centrality to the peripheral district, which is generally penalized, and not involved in environmental renewal programs. At the same time the word *surrounding* is used with a double meaning, to express both the physical space where the project proposes transformation, and more generically, the urban environment, the urban surrounds.

Firstly a symbolic image was chosen to represent the project. This decision was made to eliminate the obvious difficulties connected to the gap in scale between the urban dimension of the project and the drawing scale, normally used to represent the project of a public space. A *zip*, enormously out of scale, crawls along the avenues to symbolize the main aim of the plan: the linking of different urban districts. The drawing of the zip completely covers the area previously defined as *radius walking distance* (Fig. 4b and 5). The vastness and complexity of the site demands a modular project response: the solution of the technical problems of every specific single point is left to an eventual and future phase of study in depth.

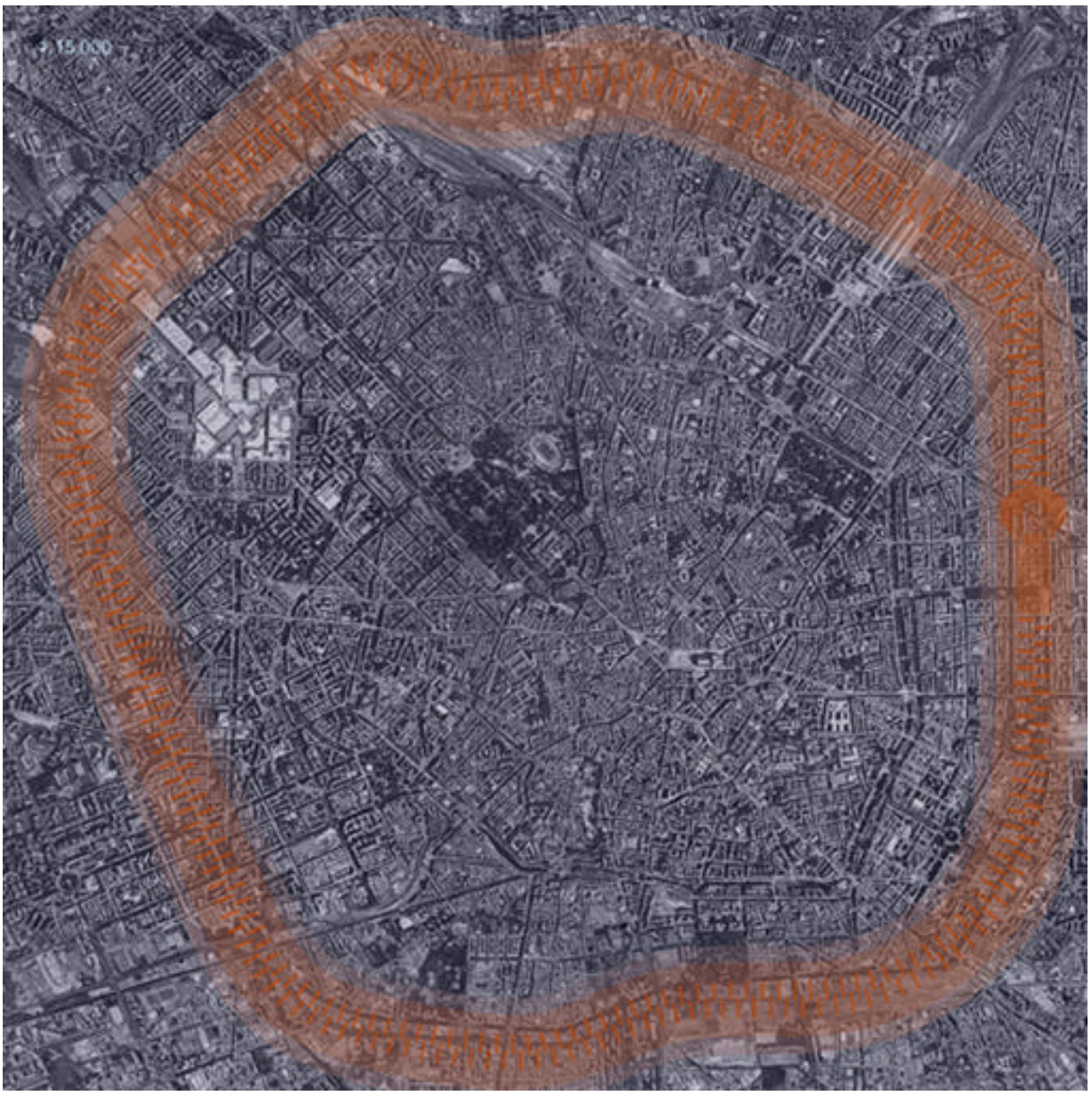

Figure 5. Master plan.

The real target is to formulate a typological and theoretical scheme that underlines a solution which is easily adaptable to all different contexts. The project proposes a new distribution of the street section, whilst making an effort to keep all the different and existing characteristics. The theme of feasibility is linked to the theme of the conservation of the historical image of the ring road, in that it has a heritage that has to be transmitted to future generations, by protecting it and enriching it, according to principles of sustainable development.

The plan aims to maintain, in particular, the lines of trees, the position of the roads and the sidewalks. Above all, the central parterre is left to the complete disposal of pedestrian mobility, free of cars and of public transport vehicles. These elements are maintained, rationalized, and integrated without substantial modifications to the ring road skeleton, but now expressing a new powerful force (Fig. 6), to remember the ever present challenge for a city that grows while confronting hundreds of years of its own history in allowing for the cohabitation of modern times and times long past. Beside the parterre, there are two protected lanes, ensuring the free circulation of vehicles for public transport and for taxis this

way obtaining the double effect of regaining space for benches and distancing cars from the pedestrian area; all this for questions of acoustic comfort and the safety of the circulation.

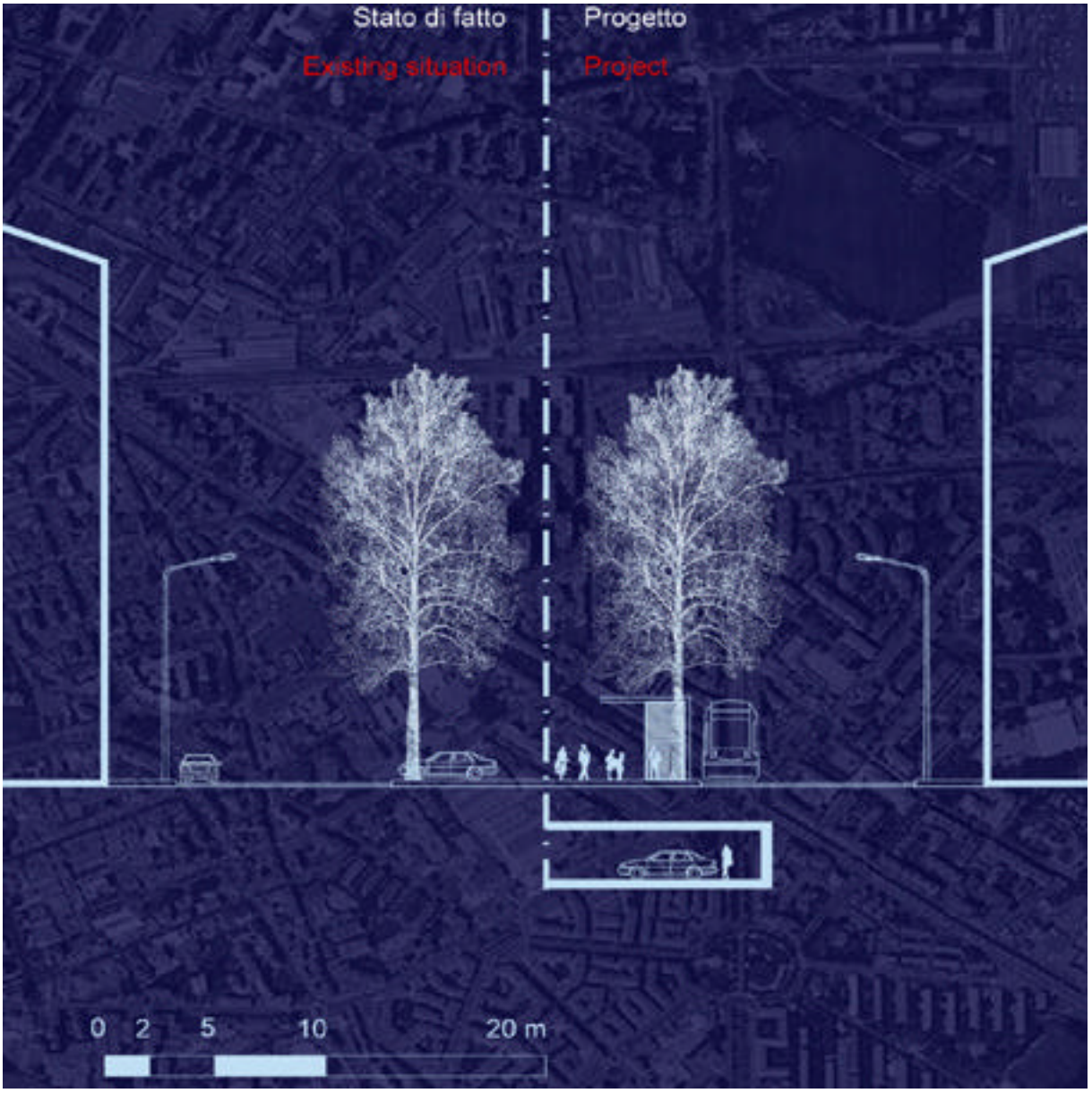

Figure 6. Section: existing situation and project.

The closeness of vehicles to pedestrians is not as such, considered a problem, but, to the contrary, a further resource in obtaining the integration of different means of transport. The referenced road type is clearly defined by the *rambla*, one of the main road types produced in nineteenth century culture, which consists of a road arranged with a central portion of green areas, and pedestrian areas dedicated to various functions, in addition to two lateral tracks. An abacus of project elements, used from time to time according to a functional mix, and depending on the specific section being addressed: kiosks for commercial activities and sitting spaces, green areas and water features, internet connections and artworks. The abacus is theoretically unlimited and the urban environment, with its continuous modifications and its different characters, suggests a precise use. The elements occur rhythmically, as cultured episodes in slow progression, clarifying the perception of the new connective structure. The effect produced by the transformation on the urban landscape is charming and offers a completely new perception of the urban space (Fig. 7 and 8).

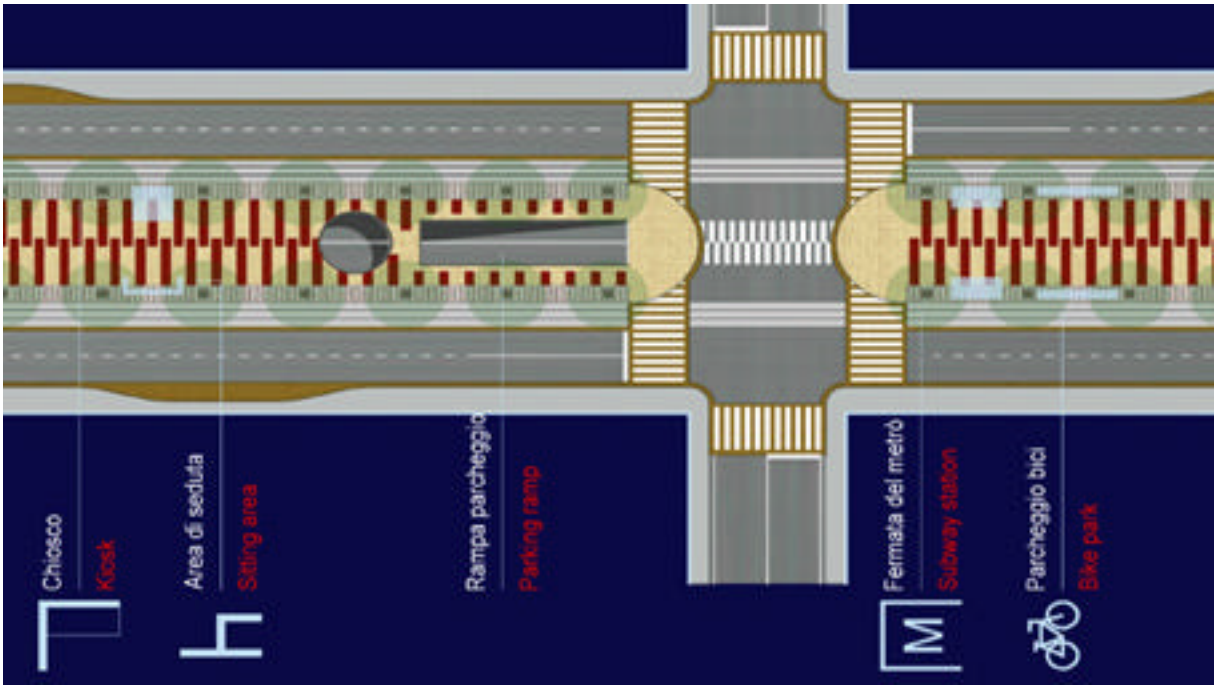

Figure 7. Plan of intervention details and abacus of elements.

First of all, the physical condition required to implement this project is to eliminate the cars parked at ground level of the street. In a few points, the zip, the symbolic element of the scheme, opens itself exposing the subsoil, to underline the strong relationship between the project and the contingent needs of a big city: open ramps for underground car parks. The placement of car parks under the central parterre, offers a series of advantages from a strategic viewpoint. Firstly, it permits better accessibility for vehicles coming from both directions; secondly, it permits the building of such structures with minimum interference to traffic circulation.

The structural limitations above the ground, and underground, are primarily constituted by some infrastructure services that impede their total use. These elements cannot be ignored in a well planned scheme, hence, the feasibility of the project is dependent on a phased implementation plan occurring over a length of time, and in different areas according to necessity. A brief estimation of the subsoil availability allows us to quantify the possible number of car places as about five thousand (Fig. 4c). The economic sustainability of the project is strictly linked to the opportunity to build underground, and make it productive; in paradoxical terms, we could assert that the presence of cars is the real economic resource in this system, as they offer the possibility of enticing financial investment on the part of private entrepreneurs, whose presence is ever more requested in the transformation of the city.

8. Conclusions: the street space as a space for relationships

Milan is not institutionally a capital city, but it is a city with a millenarian culture that holds a key role for the south of Europe; therefore it is not only the city of finance or the *fashion city*. More and more often we see the attempt to formulate stereotyped definitions and easy spreading of images with the intention of beating the identity crisis that some cities are going through, due to the unavoidable competition that began with the onset of the global market.
The knowledge of the economy of a city is surely an important aspect within the territorial programming processes. But this is only one of the many aspects of city life, and planning that is too rigidly tied to an imposed definition, can limit the future potential of the city. The city is, first of all, a place for life and relationships, and public spaces are where these

relationships develop under everybody's view. The quality of this space, independently from the quality of the built environment, somehow influences the quality of relationships.

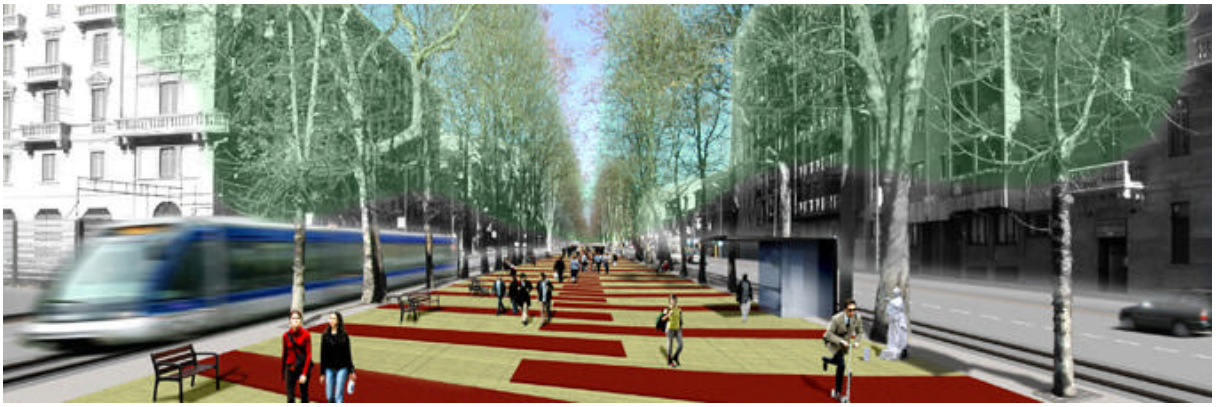

Figure 8. Photographic simulation of the project.

Likewise the street space is not only a connecting space or a space for mobility. A wider and more complete definition is perhaps represented by a sequence of concepts such as *mobility - communication - information - culture*, to emphasize the strong existing relationship between the opportunity to grow, offered to the individual person, and the possibility of movement through the territory. In the future the city will be ever more constituted of a collection of vital quarters representing, on a small scale, the image of the whole; quarters distinguished by a good level of environment quality, with a wide diversification of activities, and where better social integration will be possible. From this point of view, the quality of the street space has a fundamental role.

The road is the place that puts the private space in order. Through the simplicity, the modularity and the typological characterization of the road network, reinforced by the repetition of recurrent elements, unifying characteristics are guaranteed, making the urban space more recognizable. In turn, the city space forms the scenario that represents heterogeneous architectonic expressions both on the formal and typological level.

A careful phase of redesign can make the various functions of the city roads compatible, such as traffic circulation and the sitting places, walking and the shopping; giving quality to the habitat, increasing safety and finding once again *the sense of place*[6]. For example some experiences demonstrate that the typology of the *commercial avenue*, characterized by a large number of stores and activities, is able to compete economically with the large shopping centre, but with a very different impact on the territory. The most interesting aspect of these experiences is that they are feasible along existing roads and they can be proposed as models for a new city culture[7].

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Notes:

[1] Ref. Introduction to the competition *The Celebration of Cities*.
[2] These and other considerations are contained in the notes from the lecture held in 2003 by Alberto Cecchetto during *The Project of Public Space. Post graduate master* organized by Celsius - Società Lucchese per gli Studi Universitari, Lucca, Italy.
[3] Cfr. Monti, Carlo (1998) “La città nella rete”, in *La città necessaria*, page 20.
[4] Information on the activities of Jaime Lerner as Mayor of Curitiba and governor of the Brazilian state of Paranà is also found in an interview published on *http://www.hivnet.ch/social/french/index.html*.
[5] Cfr. Bolocan Goldstein, Matteo (1998) “Milano scomposta. Trasformazioni urbanistiche in cerca di rappresentanza”, in *La città necessaria*, pages 248, 249.
[6] The typological characteristics of the Italian urban roads, along with numerous examples of renewal are described by Giuseppe Di Giampietro on the site *www.webstrade.it*.
[7] Maurizio Marzi and Nicoletta Ancona, authors of the text, are architects and freelance professionals; for both passion and intellectual curiosity, they undertake numerous trips aimed at getting to know, and comparing European realities. Through the project and the elaboration of this abstract, they wanted to express their affection for Milan, the city where they work and live. The considerations contained in this essay, thus are of pure scientific character and do not express judgement of any specific situation. To contact them or receive any further information write to *info@terraA.it*.