

# COMPARATIVE STUDY

## MILAN & SÃO PAULO IURC - LA

MAY 2023

**Thematic Network:** Urban and Regional Renewal & Social Cohesion

**Thematic Clusters:** Urban Sustainable Agenda / Urban Regeneration Projects

**Cross-cutting challenge:** Post-Covid Recovery – Social Justice & Inclusion

**Topic keywords:** urban regeneration, sustainability, planning, public spaces, greening, brownfield areas.

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## MILAN – SÃO PAULO

IURC – COMPARATIVE STUDY

### EXECUTIVE SUMMARY

*The cities of Milan and São Paulo are exchanging knowledge and best practices on the regeneration of industrial heritage areas as a catalyst for social and environmental transformation, and the creation of more livable and green neighbourhoods. The cities have collaborated on the creation of guidelines to ensure that regeneration projects integrally revitalise areas, that can then be integrated into the city's fabric. This comparative study has been created to provide context for the guidelines.*

*The aim of this comparative study is thus to shed a light on important aspects that both cities are developing regarding urban regeneration, especially on the regeneration of brownfield areas aimed at creating sustainable and lively neighbourhoods. This study offers a collaborative platform that seeks to open up the discussion on solutions to common problems, through the co-design of a roadmap, inspired by international best practices and adaptable to local contexts and specificities.*

### INDEX

- 1. Urban Context:** City's Main Information
- 2. Urban Development Plan:** Instruments, Tools & Vision
- 3. Urban Resilience:** Green Areas, Environmental Protection, & Climate Change Mitigation
- 4. Public Space & Urban Services:** Creating Lively Neighbourhoods, Socially Inclusive, Promoting Economic Development & Increasing Accessibility
- 5. Urban Regeneration:** Transforming Vacant & Under-Used Spaces For A Connected And Compact City
- 6. Case Studies:** Milan: The Ex-Macello & The New Bovisa Area Regeneration. São Paulo: The Bras Area
- 7. Comparative Study:** Main Similarities & Differences – Guidelines For Urban Regeneration

1.

## URBAN CONTEXT

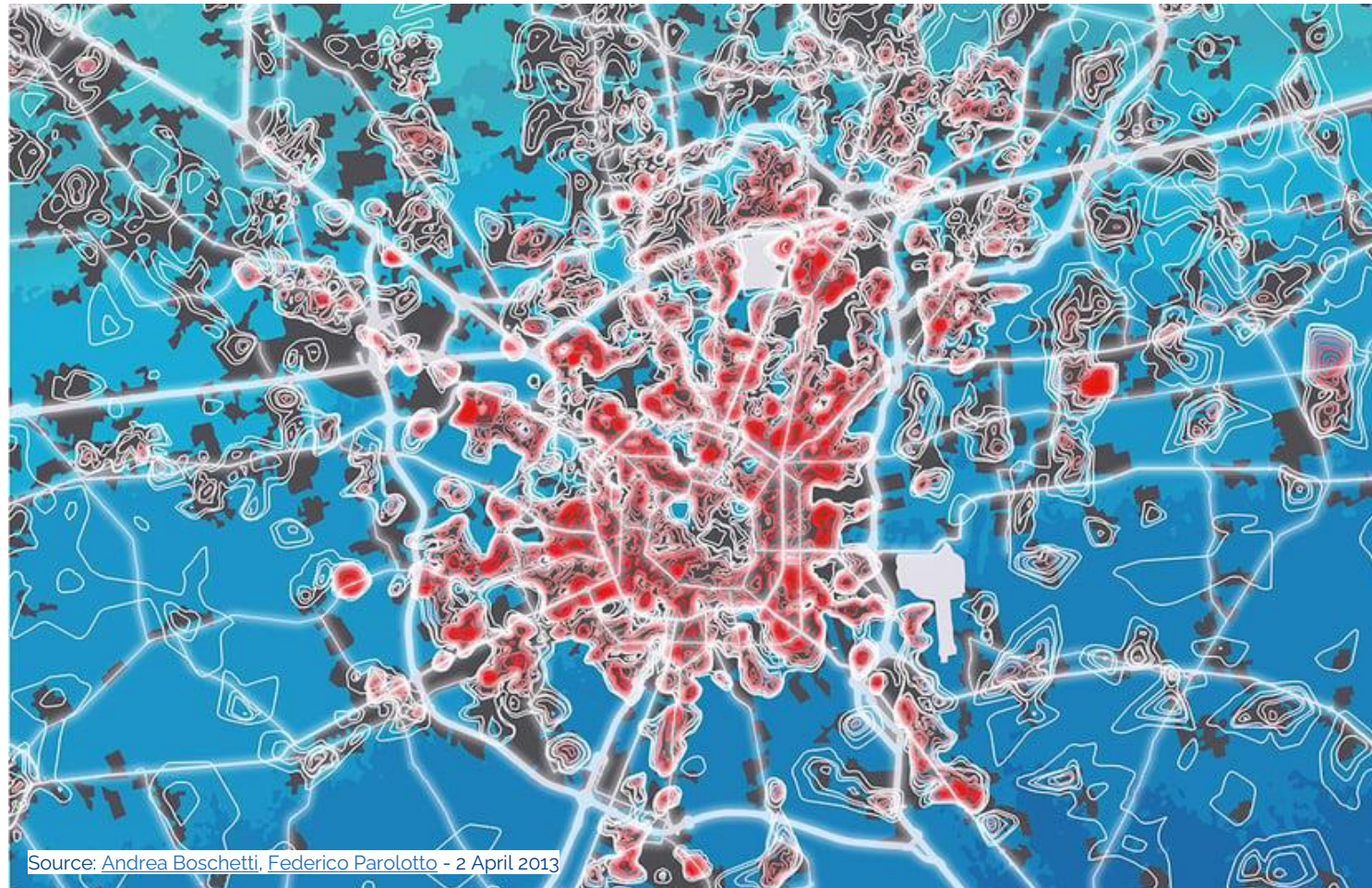
CITY'S MAIN INFORMATION



# MILAN

Milan is a leader in many industries, such as financial and banking services, design and fashion, engineering, agrifood and food processing, communication and publishing, energy and renewables, ICT & multimedia. Milan Metropolitan area had a GDP of €153 billion (12% of Italy's GDP) in 2016 and accounts for nearly one third of all foreign-invested firms in Italy, more than 30% of their employees and 34% of their turnover. With its 8 universities and 2 international schools, Milan area stands out for the quality of its human capital and education system at all levels. The Universal Exposition Expo Milano 2015 has confirmed the role of the city as a capital of business and finance, and a magnet in attracting flows of tourism from the world. The city has three international airports and primary transport infrastructures.

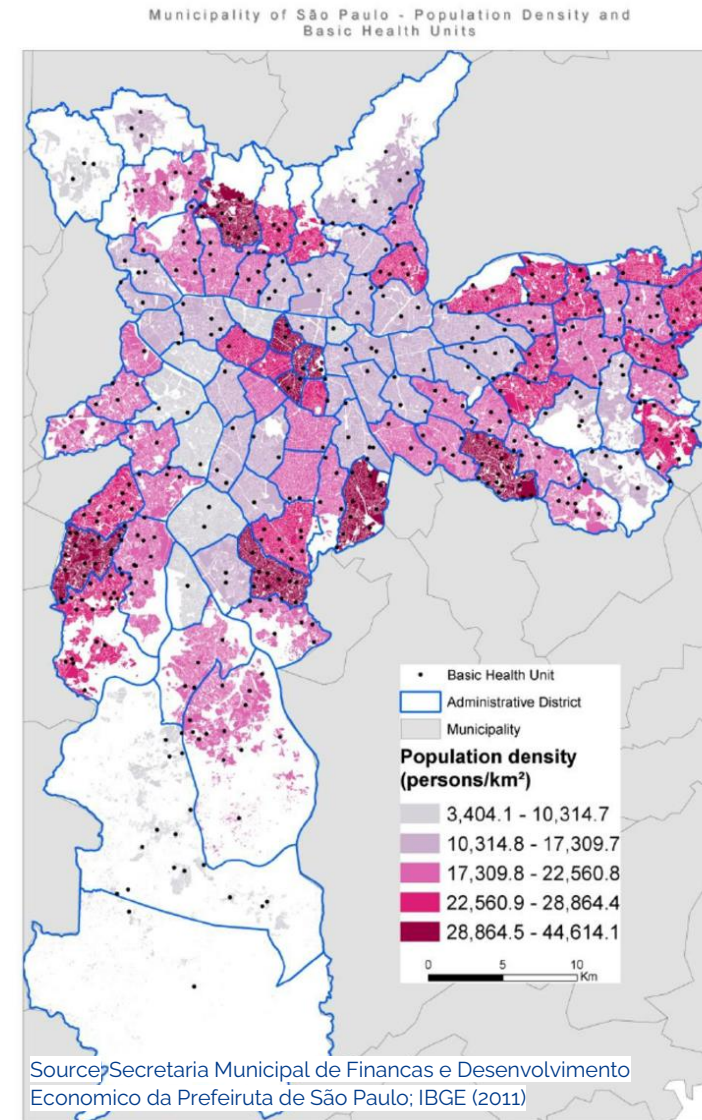
Milan has been experiencing a moment of extraordinary transformation during the last two decades. Between the nineties and the early 2000s, there was the launch of a large number of large urban projects, mainly on abandoned and underused industrial areas in the central part of the metropolitan region. New neighbourhoods have been built in the outskirts of the city on old brownfield sites. Some interventions have been hampered and even stopped by the global crisis started in 2008, but the Universal Exposition Expo Milano 2015 helped the city to recover. In the meanwhile, some of the most important redevelopments near the city core (Citylife, Porta Nuova, Portello) have been completed, setting new standards in planning and architecture and changing the old skyline.



Source: Andrea Boschetti, Federico Parolotto - 2 April 2013

# SÃO PAULO

São Paulo, founded in 1554, is Brazil's wealthiest city with an area of 1,521.202 km<sup>2</sup>. It is also the only Great National Metropolis according to the study of the Regions of Influence of Cities (REGIC) by IBGE. With an estimated population of over 12 million inhabitants, it is known as a business city and concentrates at least 10% of the national GDP and most of the jobs. Like Milan, São Paulo underwent an industrial boom in the 20th century and a spatial deconcentrating of its industries, leading to the relocation of production units to surrounding areas while maintaining operational headquarters in the main metropolis. This process of "concentrated de-concentration", as Professor Milton Santos coined it, impacted urban spaces originally located in central areas, including the Complexo Gasômetro, situated in the perimeter of São Paulo's historic centre. As a result, urban regeneration efforts are now underway to find new functions for these underused spaces and incorporate them into larger urban dynamics.



Source: Secretaria Municipal de Finanças e Desenvolvimento Econômico da Prefeitura de São Paulo; IBGE (2011)

Data sources: Secretaria Municipal de Finanças e Desenvolvimento Econômico da Prefeitura de São Paulo; IBGE (2011)

Unlike Milan, São Paulo is a city located on rugged terrain, characterized by the Brazilian landscape known as "Seas of hills." This topography stems from a large orogenic belt that originated from the separation of tectonic plates, which formed the Atlantic Ocean over 100 million years ago. As a result, the ground surface is ancient and shaped by chemical and physical weathering, and the landscape also includes various mountains (Serra da Cantareira) and hills. Alluvial plains can also be observed in the floodplains of rivers, which have undergone intense modifications such as plumbing, course rectification, and the elimination of meanders. Today, neighbourhoods in these floodplain areas must cope with periods of intense rain, particularly during the first months of the year.

These landscapes were originally covered by dense vegetation as an integral part of the original Atlantic Forest biome. However, this biome has undergone intense deforestation since the arrival of Europeans to the continent in the 16th century. Accelerated and unplanned urbanization processes, concomitant with the city's industrialization, led to significant losses of this biome. Currently, public and private representatives are joining efforts to expand the area of the Atlantic Forest in the city, combining the preservation and expansion of green areas with the creation of new public facilities that preserve citizens' right to the city. São Paulo's territory has about 48% of vegetation coverage, despite its important paved surface, largely conformed by protected zones located in Conservation Units in the North Region (Serra da Cantareira) and in the South Region (Bororé/Colônia/Varginha).

# MILAN

<b>URBAN AREA</b>	70,18 km2 (total area: 182 km2)
<b>INHABITANTS</b>	1.352 millions
<b>YEAR OF FOUNDATION</b>	590 BC (first settlement as Celtic village) – 222 BC (Roman Mediolanum)
<b>MAIN LAND USE INSTRUMENTS</b>	The Urban Development Plan (Piano di Governo del Territorio, PGT); Building Regulations (Regolamento Edilizio); Regional Territorial Plan (PTR); Metropolitan Territorial Plan (PTM)
<b>VEGETATION COVER</b>	38% (2023)
<b>N° OF GREEN PUBLIC SPACES UNDER THE STEWARDSHIP OF THE MUNICIPALITY</b>	94 parks and green areas
<b>MUNICIPAL AUTHORITY INSTITUTIONS</b>	Department of Urban Regeneration; Department for Housing; Department for Green and Environment; Department for Facilities and Public Realm
<b>INTERFACE WITH INTERNATIONAL GUIDELINES</b>	UN 2030 Agenda for Sustainable Development; C40 City Network; Resilient Cities Network; EIT Climate-KIC (UE)



# SÃO PAULO

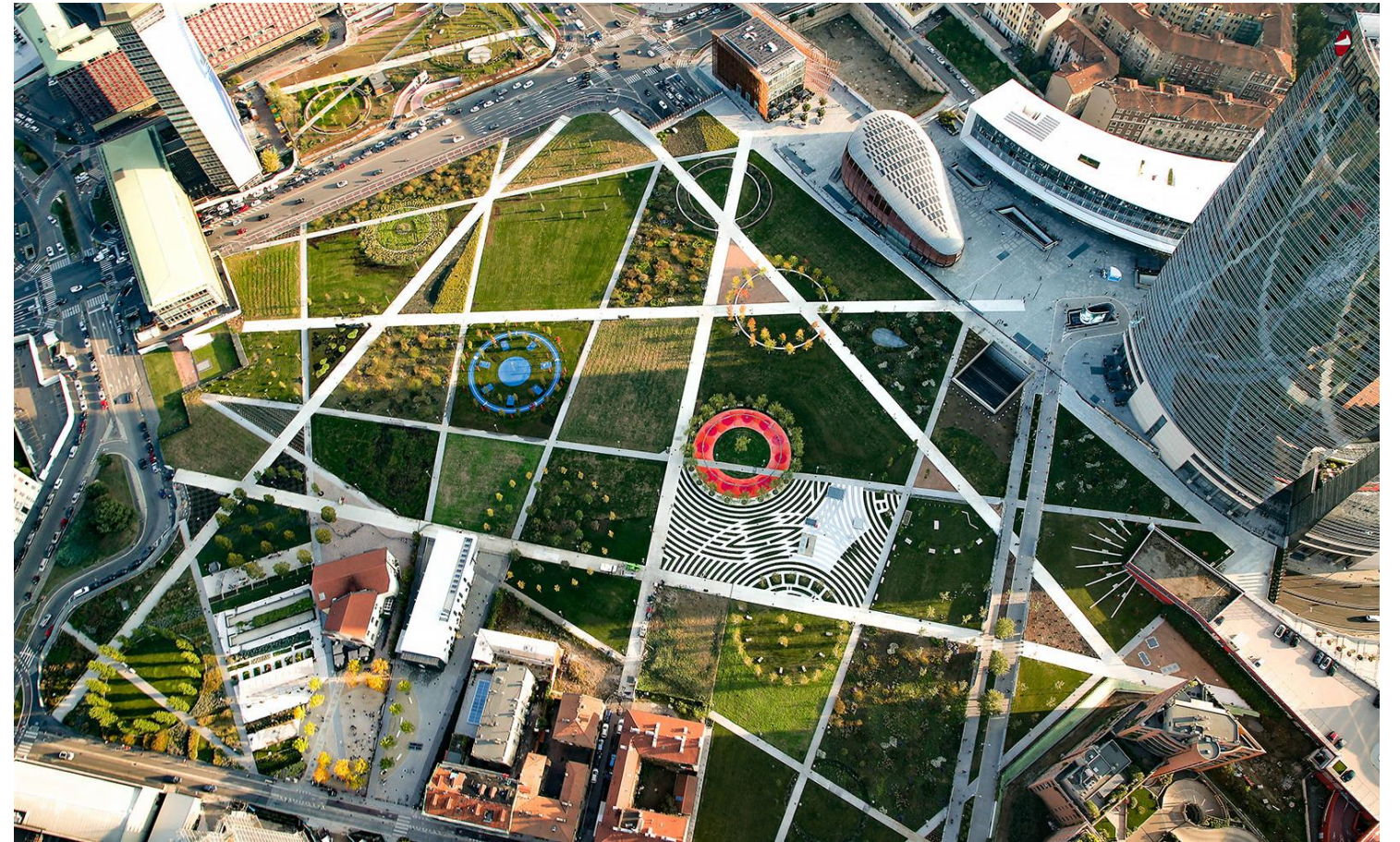
<b>URBAN AREA</b>	587 km2 (total area: 1,521 km2)
<b>INHABITANTS</b>	12.33 millions
<b>YEAR OF FOUNDATION</b>	1554.
<b>MAIN LAND USE INSTRUMENTS</b>	Federal Constitution of 1988; City Statute; City's Strategic Master Plan (PDE); Soil Allotment, Use and Settlement Law (LPUOS)
<b>VEGETATION COVER</b>	48.18% (2023)
<b>N° OF GREEN PUBLIC SPACES UNDER THE STEWARDSHIP OF THE MUNICIPALITY</b>	111 Parks and 9 Conservation Units
<b>MUNICIPAL AUTHORITY INSTITUTIONS</b>	Department of Urban Planning and Licensing (SMUL); Secretariat for Green and Environment (SVMA); Housing Secretary (SEHAB)
<b>INTERFACE WITH INTERNATIONAL GUIDELINES</b>	UN 2030 Agenda for Sustainable Development; UN-Habitat New Urban Agenda



2.

# URBAN DEVELOPMENT PLAN

INSTRUMENTS, TOOLS & VISION



# MILAN: PGT2030

In 2012 Milan has adopted a new kind of planning tool. The old General Regulatory Plan (PRG), based on zoning, has been replaced by the new Territorial Government Plan (PGT Piano di Governo del Territorio) conceived by the Planning Law of Lombardy as a more flexible and effective instrument for governing contemporary urban transformation processes. It is divided in three main instruments:

1. **The Planning Document:** It is known as “the Mayor’s plan”. It sets the vision, the development goals and the strategies to be implemented in the next 10 years.
2. **The Rules Plan:** It identifies and classifies the homogeneous areas of the territory, defining constraints and rules of intervention.
3. **The Services Plan:** It identifies and classifies the existing services and facilities, analyses needs and establishes qualitative and quantitative standards for future development.

The current plan seeks to accompany the city’s transformation towards 2030 by promoting the narrative of a city that starts to grow again. It posits three main issues that it will try to address: (1) extending the positive momentum of Milan to all age and social groups, taking into account increase in population especially of people under 35 and over 85; (2) extending the growth to all the districts, and not only to those that have benefited from it in recent years; (3) combining development with improvement of environmental conditions, quality of life, and of the offer of green spaces.

These issues have been analysed in more details setting 5 important targets for 2030: (1) A connected, metropolitan and global city; (2) An attractive and inclusive city of opportunities; (3) A livable and resilient green city; (4) A city, 88 districts to call by name; (5). A city that regenerates itself. These 5 objectives are to be achieved through 9 thematic strategies.

The new plan places public space at the centre of the proposal, focusing on the creation of quality streets, squares, gardens, green spaces, and opportunity areas. New axes of development have been identified in existing access gates that connect urban areas through public transportation, railways, and a network of quality open and public spaces. The development will be constrained by the ecological green belt, becoming an urban threshold for the Metropolitan area. On the other hand, the plan seeks to better accommodate existing and new inhabitants, by renewing and increasing the housing offer with a focus on inclusivity, boost local economic development, and fully integrate a vision of resilience and sustainability. Productive forms will evolve to become increasingly personalised, flexible, and diversified, allowing to mitigate environmental impacts through technological innovation. In this regard, production and service centres will be integrated to promote a deeper economic, social, and environmental inclusion.

## The new PGT2030 developed a series of tools and strategies to reach its objectives:

### Place making

**2 Macro-Zones** Subdivision of the City’s territory into 2 Macro-Zones: (1) Consolidated Urban Tissue (TUC - Tessuto Urbano Consolidato); (2) Agricultural land, Parks, Restricted areas of landscape and environmental value

**2 Macro-Areas** The Consolidated Urban Fabric is articulated in: (1) Nuclei of Ancient Formation (NAF - Nuclei di Antica Formazione); (2) Urban Fabric of Recent Formation (TRF – Tessuto urbano di Recente Formazione), which is in turn divided into Areas characterized by a Recognizable Urban Design (ADR - Ambiti contraddistinti da un Disegno urbano Riconoscibile) and Urban Renewal Areas (ARU);

**7 Types of Regeneration Areas** The Urban Renewal Areas (ARU) are part of a system of 7 different kinds of regeneration areas with their own characteristics and specific goals. In addition to (1) ARU, the other six are: (2) Squares (urban hubs between the central core and peripheral neighborhoods); (3) Nodes (large public transport and interchange facilities); (4) Environmental Regeneration Areas (places with critical issues and high environmental sensitivity); (5) Ancient external Nuclei (quality and identity of old suburbs absorbed by the expanding city); (6) Pedestrian oriented spaces (public spaces where pedestrian and cycle mobility is given priority as the backbone of collective urban life); (7) Great Urban Functions (areas for important facilities of urban or metropolitan importance)

### Building permits for developers (national law)

#### Urbanization fees

Developers can choose to develop primary and secondary infrastructure themselves instead of paying for them. The contribution to construction cost is an additional fee (5-10%) based on building costs.

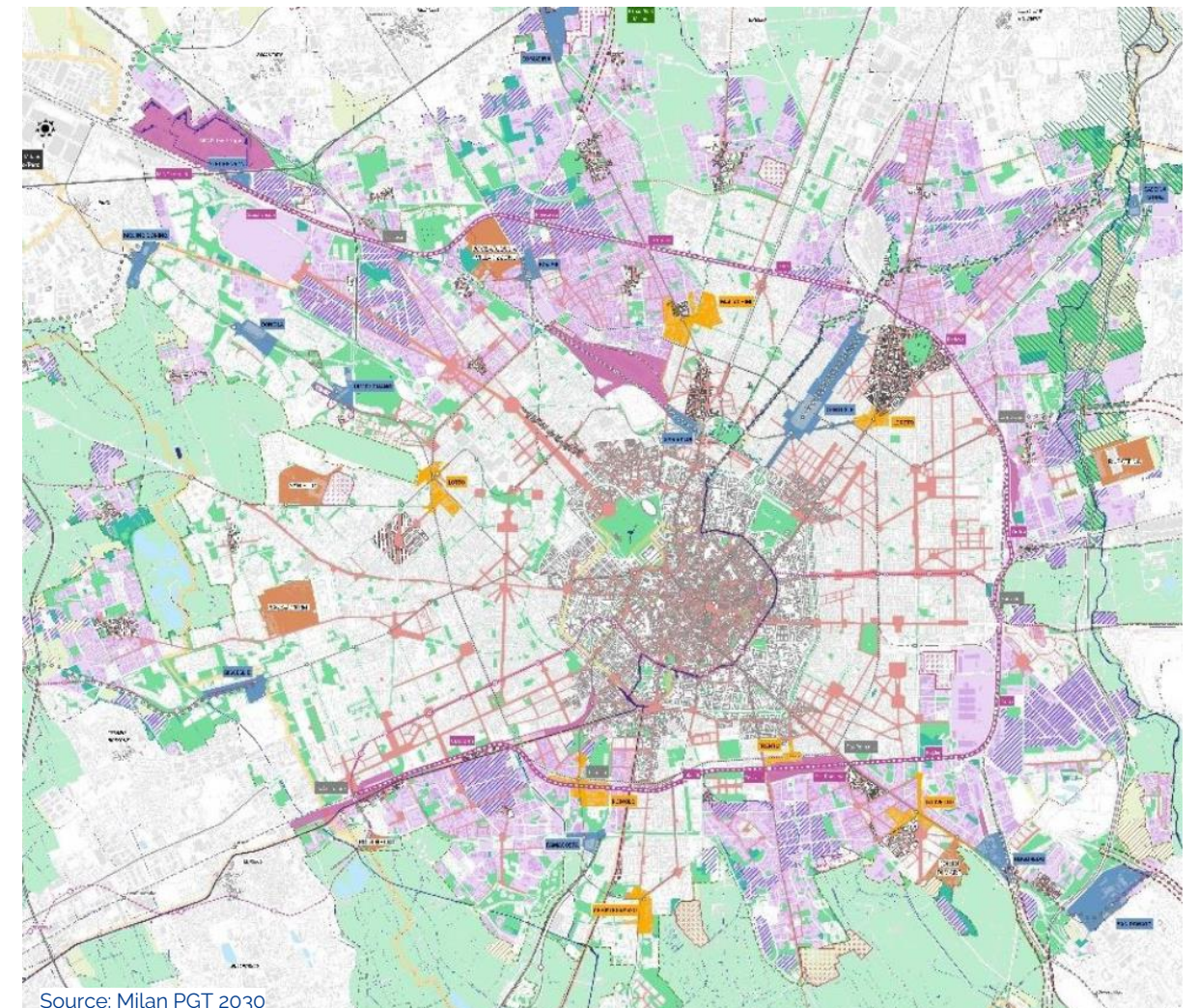
#### Territorial equipment

Developers must transfer public areas to the Municipality for public facilities and services, depending on functions to be developed and their quantity (Gross Floor Area). Alternatively, developers can choose to monetize the land owed or to deliver additional facilities or services for equivalent cost (qualitative standard). According to the PGT, no territorial equipment is required for developments with building ratios up to 0.35 sq m / sq m.

### Construction limitations & rules

#### Floor Area Ratios (FAR)

**0.35 m<sup>2</sup>/m<sup>2</sup>:** Basic FAR applied to all urbanised areas (TUC: Consolidated Urban Tissue)  
**0.70 m<sup>2</sup>/m<sup>2</sup>:** Maximum FAR in less accessible areas using Transferable Development Rights (TDR), bonuses (architectural competitions) and Incentives (affordable housing).  
**1 m<sup>2</sup>/m<sup>2</sup>:** Maximum FAR in highly accessible areas (metro/tramlines) using Transferable Development Rights, bonuses (architectural competitions) and incentives (affordable housing).  
**> 1m<sup>2</sup>/m<sup>2</sup>:** The maximum index can be exceeded providing affordable housing for rent. In squares and nodes it is allowed to exceed it through TDR and affordable housing (for rent or sale) only enhancing the qualities of public space.



Source: Milan PGT 2030

## PGT's Strategies

### Connecting places and people. Nodes as development platforms

The objective is to build a highly accessible city, capable of defining a real balance between density, transport demand, life quality, environmental protection and health. Among the guiding criteria of the nodes regeneration project, there are those aimed at providing a continuity to urban connections, at improving the relationship between urban spaces and spaces for public transport, reconnecting the infrastructural discontinuities between city sectors, re-establishing suitable safety conditions.

### Transforming, attracting, excelling. The opportunity of urban voids

Milan is growing again thanks to a model based on the concentration of services and excellences which are acting as the driving force of the city transformation processes. For this, the Plan identifies six areas in which the identification of large public or private "attractive" urban functions may drive the regeneration, also through the settlement of "ancillary" functions. These are areas of mainly public non fractioned property, of considerable dimensions, placed on strategic axes.

### Innovating and including. Emancipation through work

Starting from the guiding values of innovation and inclusion, the objective is to promote a sustainable development favouring the growth of consolidated sectors and creating spaces for those investing in the economies of the future, with the purpose of generating jobs, especially for the younger people. With these intentions, the Plan facilitates the changes of destination of use between production, offices, hospitality and private services, favouring the permanence of economic activities in the city.

### Making Milan equitable. More social rented housing

Milan has 10% of the Italian public housing estate assets, which is double the average of the large Italian cities. The Plan's objective is therefore to favour the maintenance and the structural and energetic requalification of what already exists, by recovering the portions of the presently non rented public building stock. Secondly, the objective of the social housing policy is to develop the sector of affordable rent. Finally, mandatory fees from private developments will help renovate the existing public housing stock

### Making space for the environment. Projects for land and water

The Plan will have to give back space to the hydrographic system in order to improve rainwater drainage capacity. Building removal and thinning out interventions are supported, incentivizing a strategic renaturalization programme that will involve the whole metropolitan area and strengthening the ecological connections between large green areas on a metropolitan scale. Milan 2030 emphasizes the value of agriculture, which came back in recent years to being a vital function of the city, and strengthens the policies against land consumption saving by freeing vast natural or cultivated areas from previous settlement forecasts.

### Designing a new ecology. The standards of sustainability

Some main guiding principles for the building sector have been identified: energetic and climatic requalification; circularity of materials; construction of green infrastructures, also on small areas, to protect and increase biodiversity; creation of ecosystem services; increase of rain water drainage capacity in the ground, its accumulation and reutilization.

### Adapting to social changes. Services close to all the citizens

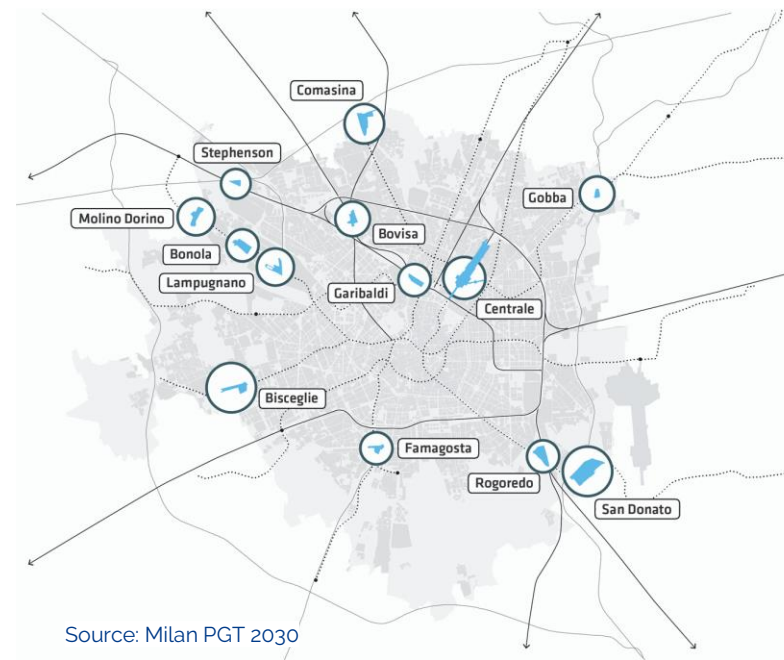
The PGT only forecasts green areas and infrastructures as "localized services" in the city plan. It needs to work on the requalification of existing services and on the adaptation of the offer, by redefining the new programming. At the same time it confirms a strong subsidiary matrix: the provision of new services by both public and private entities, through Public-Private agreements, is assessed according to needs defined over time and in relation to actual transformations.

### Bringing districts closer. Public space as a common good

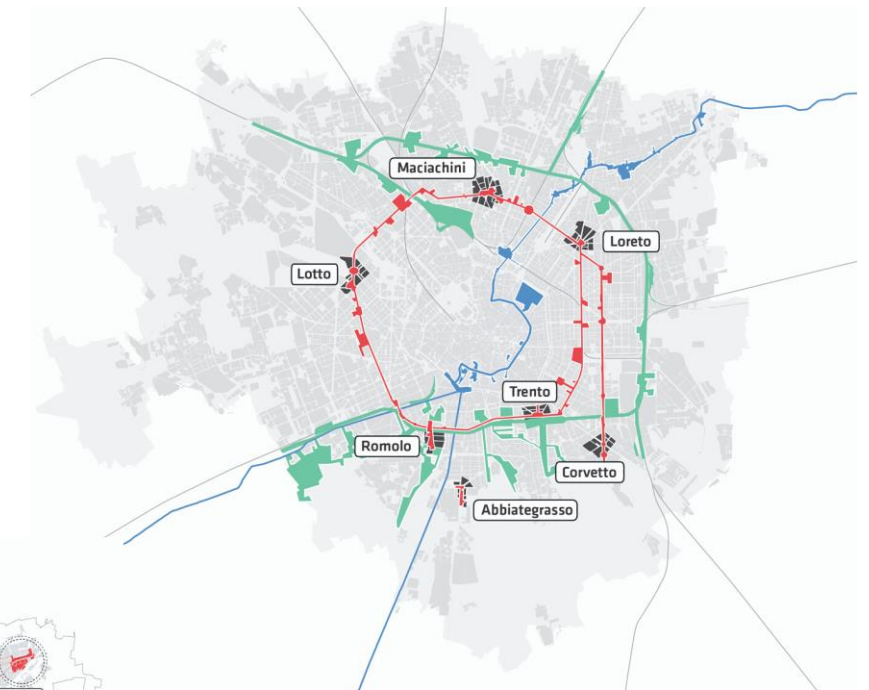
The plan aims at developing a pedestrian oriented network, identifying those areas where strategic interventions of traffic calming and urban care are needed. A more inclusive mobility means reducing social distances towards a multicentre city, capable of enhancing the value of its districts. The idea is that it is possible to combine active urban fronts and vitality in open space to rehumanise the city, favouring the spreading of natural commercial districts by also limiting large sales structures and shopping centres.

### Regenerating the city. Focusing on Suburbs

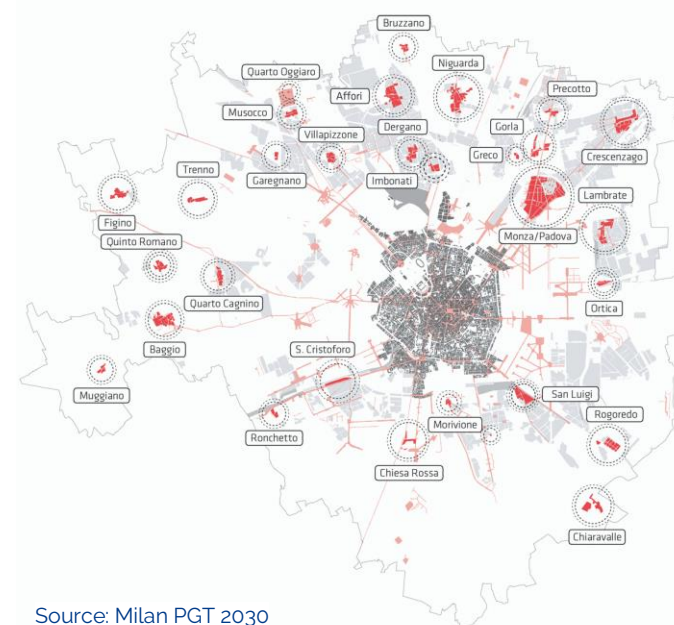
The PGT establishes as a priority the requalification of schools and sports facilities and the realization of new ones. It aims at extensively promoting a careful coordination of interventions (Area Plans) of repeatable urban and environmental regeneration, of limited complexity, in an incremental perspective, capable of creating networks with a deep incisive effect on the urban quality with minimum modifications to the building shells.



Source: Milan PGT 2030



Source: Milan PGT 2030



Source: Milan PGT 2030

# SÃO PAULO: PDE

Land-use planning instruments are essential in guiding the use and occupation of land in the territory of São Paulo. The two primary instruments in the municipality are supported by national legislation, such as the Federal Constitution of 1988 (art. 182) and the City Statute (Federal Law No. 10.257, of June 10, 2001). These are the followings:

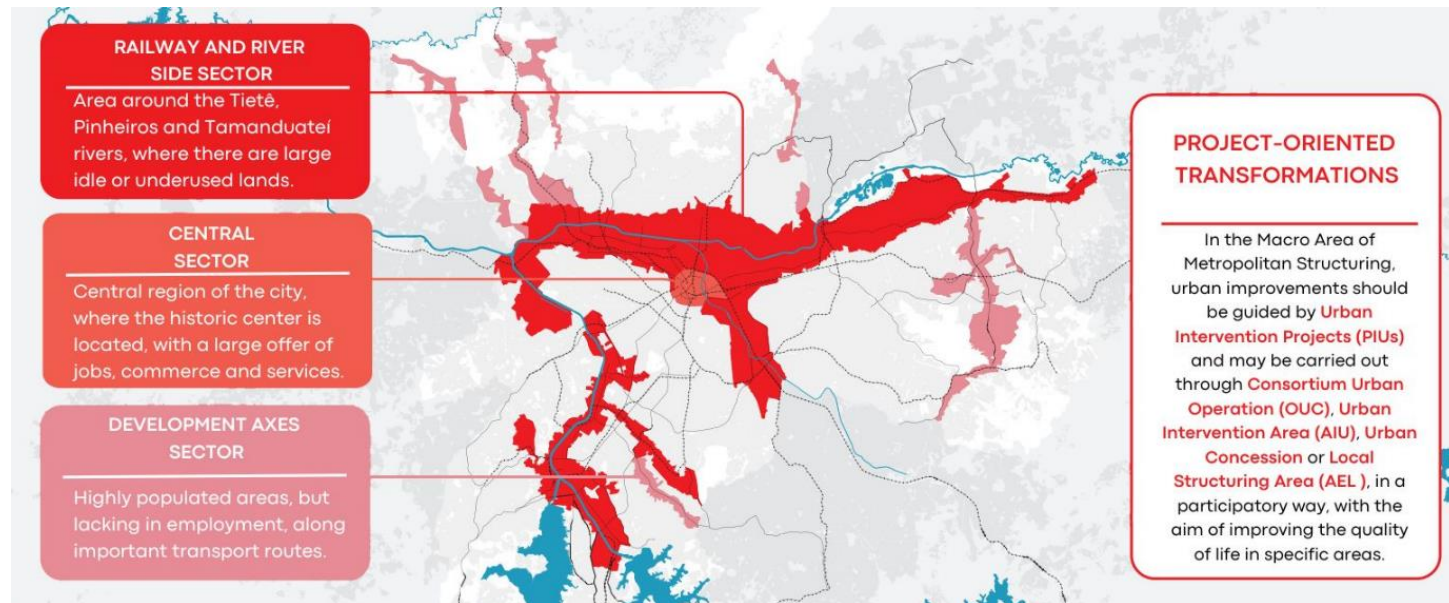
- The Strategic Master Plan of the Municipality of São Paulo (PDE - Plano Diretor Estratégico):** The PDE is a comprehensive plan, enforceable until 2029, that establishes the main guidelines for urban and rural land use in the city. Its main objective is to humanize and rebalance urban development through social, environmental, real estate, economic, and cultural dimensions. The plan divides the territory in “macro-areas” to orientate strategic development poles for the city, and includes guidelines to orientate São Paulo’s future development.

## Place making

**2 Macro-Zones** Subdivision of the City’s territory into 2 Macro-Zones: (1) Urban Structuring and Qualification Zone; (2) Environmental Protection and Recovery Zone.

**8 Macro-Areas** Sub-division of Macro-Zones into Macro-Areas according to their specific characteristics: (1) Metropolitan Structuring, (2) Consolidated Urbanization, (3) Qualification of Urbanization, (4) Reduction of Urban Vulnerability, (5) Reduction of Urban Vulnerability and Environmental Recovery, (6) Urban and Environmental Control and Qualification, (7) Urban Containment and Sustainable Use, (8) Preservation of natural ecosystems.

**3 Types of territory** According to the law, the Municipality is divided into three types of territory: (1) Transformation areas; (2) Qualifying areas; and (3) Preservation areas. Each territory is subdivided into different classifications.



## PDE objectices

### Environmental Sustainability

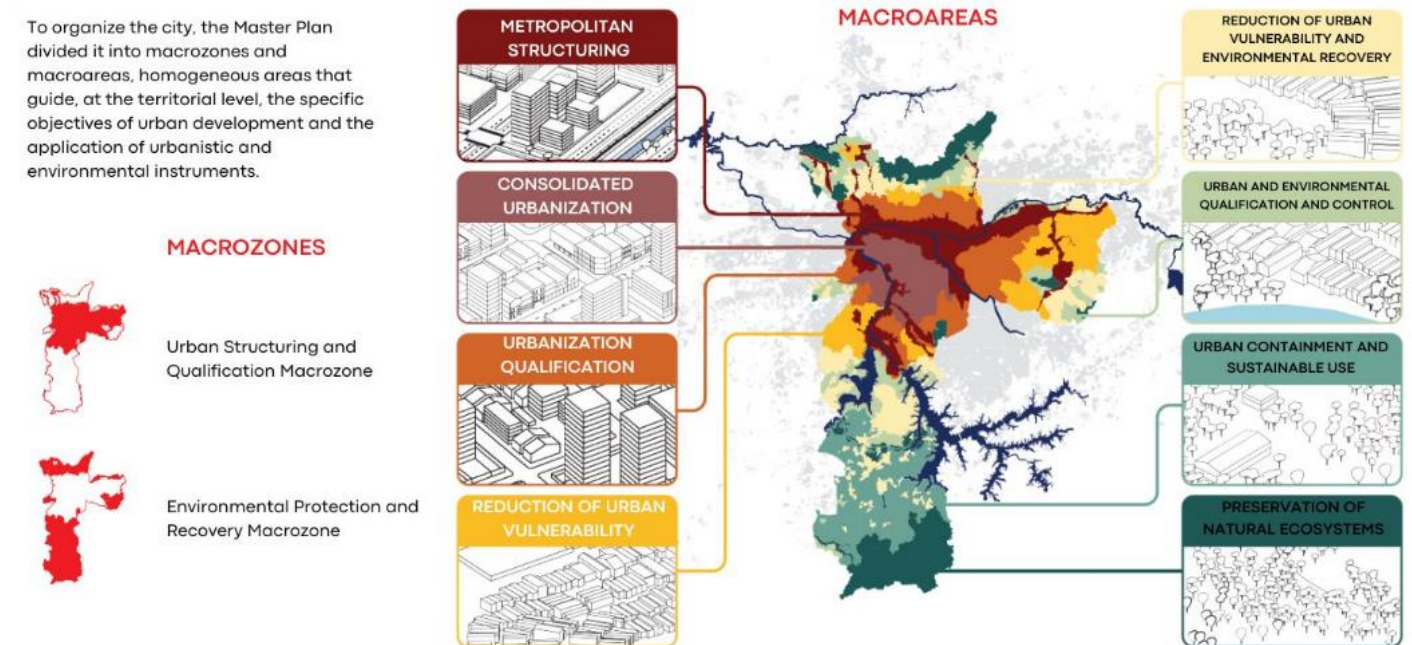
The plan seeks to protect natural and cultural heritage through different integral actions (protection of underground water reserves and natural resources). It also seeks to promote production and consumption patterns compatible with socio-economic and environmental sustainability, incentivise the expansion of public and green areas, as well as prioritise sustainable mobility over private cars in urban and road design. It therefore seeks to ensure adequate land-uses avoiding deterioration of the environment, pollution, and excessive or inadequate soil permeability.

### Social inclusion

The plan promotes a fair distribution of benefits and burdens of urbanisation through different incentives and tools. The municipality will return to the citizens the value appreciation of real estate arising from public investments and change the legislation on land use and settlement accordingly. It will also create incentives for Social Housing, social and cultural facilities. Finally, it will encourage multi-stakeholders cooperation in the urbanization process, in accordance with the social interest.

### Balanced urban growth

The plan seeks to bring economic and residential activities closer, to achieve a more equilibrated urban distribution and limit its effect on the environment. Recalibrating and controlling growth will take advantage of existing vacant or underused spaces through a series of instruments, and re-organise the mobility system to improve accessibility, sustainability, and the public realm (active facades, lively streets, and revitalised neighbourhoods). It thus encourages different levels of land occupation, considering existing infrastructure and services, preventing area degradation, and meeting current and future needs linked to intensification of land-uses in specific areas. Land-uses should also be compatible, considering conflicts, subdivisions, infrastructure, traffic generating activities, land speculation resulting in vacancy, under-use or deterioration. The municipality will also improve the allocation of public and private investments and simplify the legislation on land-use and building regulations, adapt to current urban trends and facilitate its understanding from citizens.

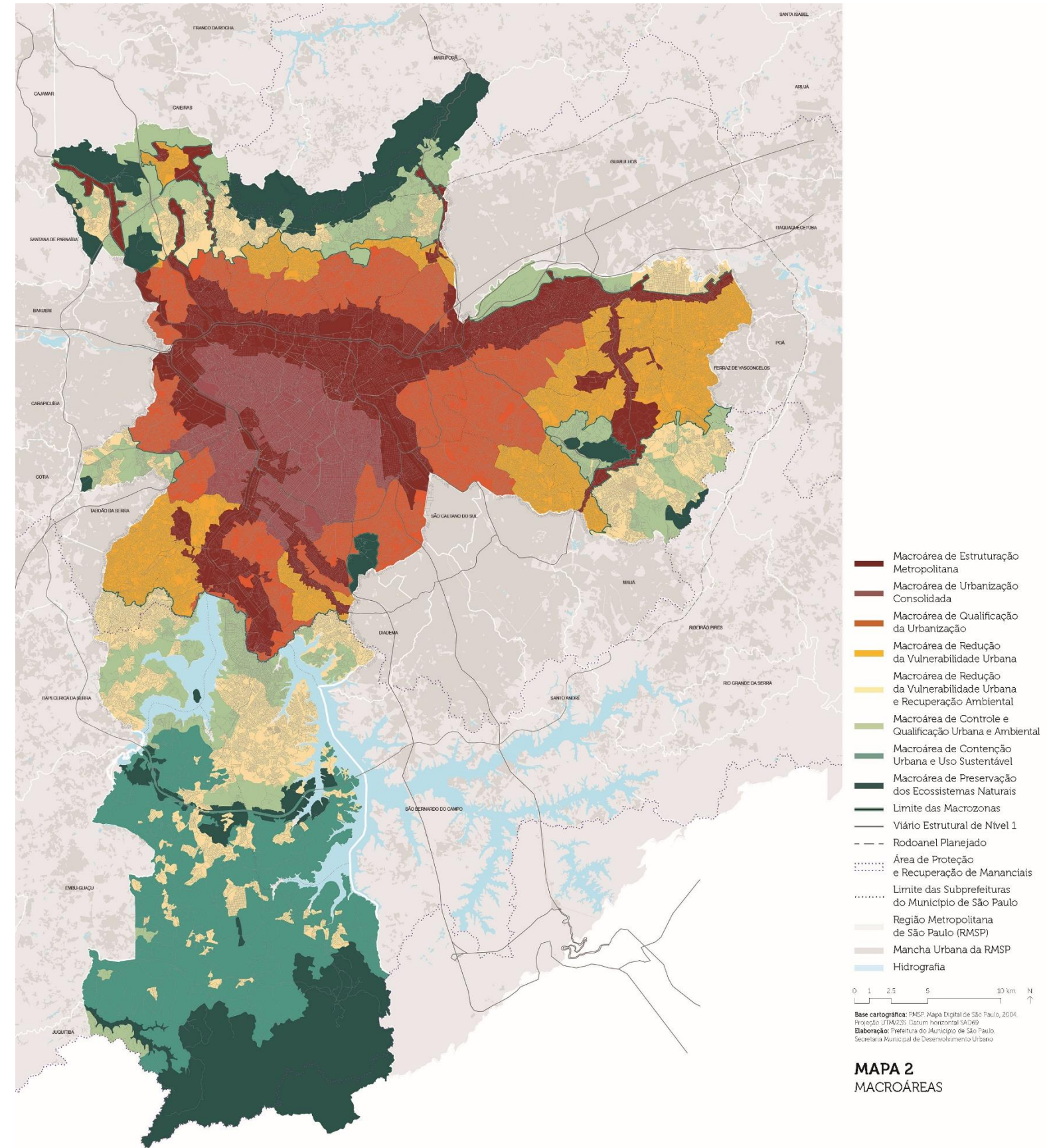




2. **The Land Allotment, Use, and Settlement Law in the municipality of São Paulo (LPUOS - Lei de Parcelamento, Uso e Ocupação do Solo):** Enacted on March 22nd, 2016, the law strictly adheres to and abides by the PDE. It effectively organizes the subdivision, use, and settlement of the Municipality's territory. The second article of the law contains guidelines that preside over this process.

### Land Allotment, Use, and Settlement Guidelines

<b>Urban growth</b>	<p><b>Demographic density:</b> Intensification of economic activities, land-use diversification and qualification around structuring axes of urban transformation.</p> <p><b>Centralities:</b> Definition, consolidation, and structuring around connecting roads axes. Organisation in regional centres and sub-centres.</p>
<b>Environmental protection</b>	<p><b>Environmental qualification:</b> In territories undergoing intense transformation, for integrated water management (especially for urban drainage) and the improvement of vegetation coverage.</p> <p><b>Conservation Units protection and preservation:</b> Recovery of springs, areas of permanent preservation, remnants of significant vegetation, assets and territories of cultural interest or with productive activities, and neighbourhoods with consolidated urbanization.</p> <p><b>Sustainable buildings:</b> Reducing greenhouse gas emissions, reducing water and energy consumption, optimizing public space use, and improving environmental conditions.</p>
<b>Medium and large businesses</b>	Limitation and conditioning according to urban conditions of their surroundings, to provide a better balance between public and private spaces, improved interface between open spaces and built areas, compatibility between demographic densities and existing infrastructure, and greater continuity, capillarity, and connectivity of road system;
<b>Sustainable mobility</b>	<p><b>Non-motorized transportation:</b> adaptation of land use to sustainable and active mobility with adequate infrastructure (bike lanes).</p> <p><b>Multimodal transportation:</b> integration in land use planning.</p>
<b>Mixed uses</b>	<p><b>Proximity of employment and urban services:</b> connected and closer to residential areas.</p> <p><b>Economic and institutional activities:</b> integrated with residential use according to sustainable development guidelines and macro-zoning established in the Strategic Master Plan.</p> <p><b>Simplification of rules:</b> for subdivision, use, and occupation of land, especially in small lots, to facilitate regularization and transformation processes.</p>
<b>Social interest</b>	<p><b>Social interest housing:</b> integrated to neighbourhoods, territories, public services and jobs.</p> <p><b>Social equipment:</b> installation of more facilities (especially health and education) in areas lacking public services.</p>



3.

## URBAN RESILIENCE

GREEN AREAS, ENVIRONMENTAL PROTECTION, & CLIMATE CHANGE MITIGATION

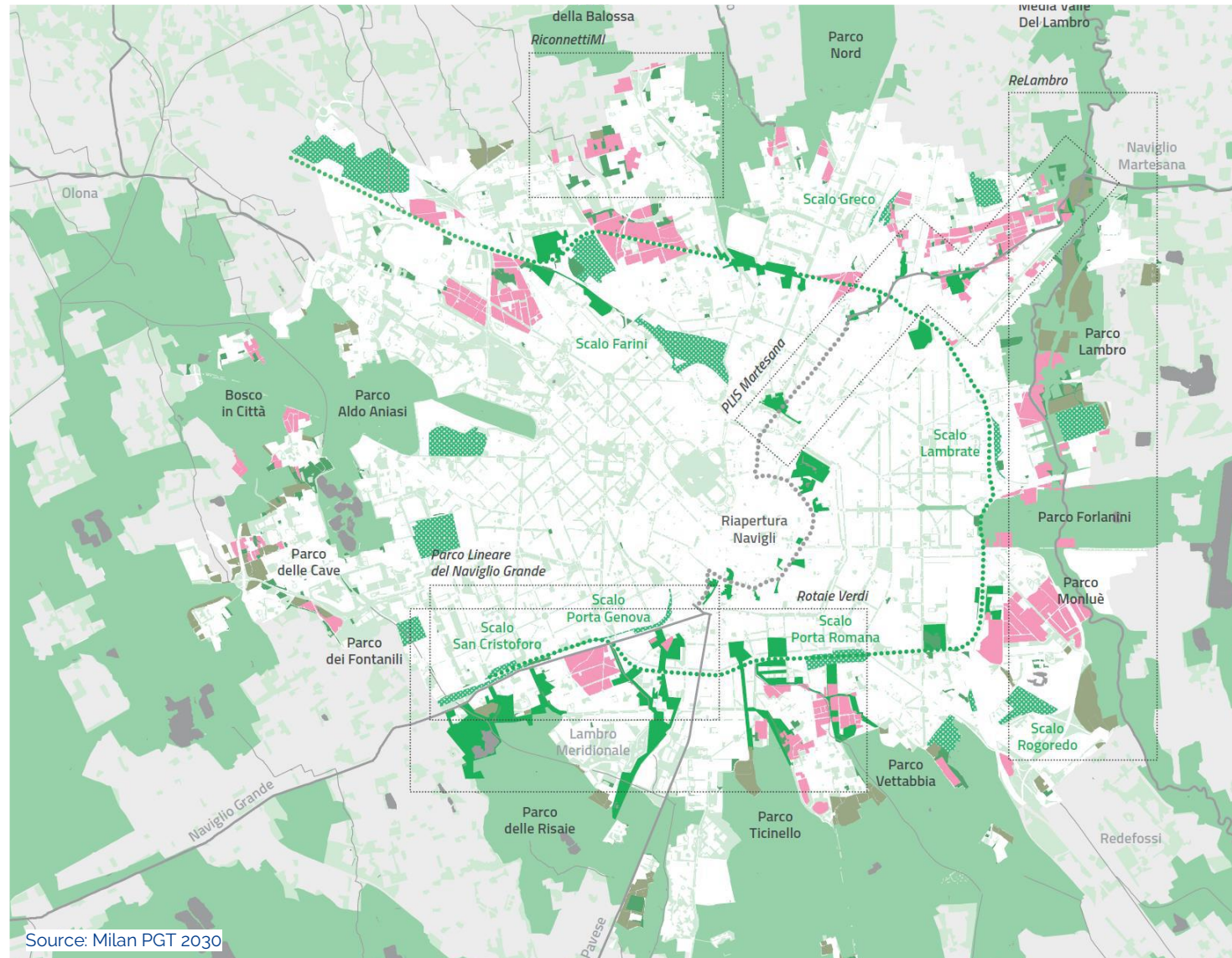


# MILAN

Milan seeks to become a liveable and resilient green city, that provides space for the environment. For this purpose, it will develop a green footprint, by proposing a zeroing land-take which means not generating new building volumes compared to current planning, but protecting 1.7 million square metres from new urbanisation. The city plans to scale down settlement forecasts by providing a land obligation of ensuring 3 million square metres of agricultural space. This will reduce land intake by taking half of the agricultural space, or around 1.5 million square metres, from existing building or areas without restrictions.

New green infrastructure will be integrated around agricultural areas, such as the “Raggi Verde” (green radiuses), which are ecological networks connecting the South Park to the North Park and the PLIS (Local Parks of Supra-Municipal Interest), therefore developing Metropolitan-wide green areas. A green belt will also be created in railway yards to provide a natural threshold to urban growth, and to connect the outer-urban parks through 675,000 square meters of green spaces.

The interventions will participate to reconnect public and private spaces through reforestation and the environmental regeneration of degraded and fragmented places, creating an intrinsic bond between urban development and the environment. The strategy will focus on building a resilient approach of prevention, mitigation, and adaptation to climate change. They will also include blue infrastructure to recover historical waterways and their associated space, and to favour water drainage and soil permeability.



Source: Milan PGT 2030

## Designing a new ecology: Sustainability standards:

### Reduction of land consumption

<b>Greening Strategy</b>	Identification of 1.7 million square meters of non-constructible areas and protection of 350 hectares of new agricultural land, of which 150 hectares will be dedicated to expanding the South Agricultural Park.
<b>Metropolitan reforestation</b>	Design of an ecological network, with de-paving, planting and reforestation areas to contribute to ForestaMI, a project that aims to plant 3 million trees in the Metropolitan area. It will increase soil permeability.
<b>New Parks</b>	Construction of 20 new urban parks, maintained by the private sector, and increase of green areas in main planning schemes.

### Climate Change mitigation & Environmental protection

<b>Climate Impact Reduction Index</b>	Defines a mandatory ratio to apply between green surfaces (permeable and semi-permeable open spaces, roofs, and walls), and the total area covered by building interventions.
<b>CO2 Emissions</b>	Cut CO2 emissions: New buildings must be carbon neutral. Promotes high energy performance, re-naturalization of interventions, reduction of water consumption, use of recycled materials in building, connection to sustainable mobility.

### Environmental incentives & Instruments

<b>Ecosystem services</b>	Developers are obliged to offer ecosystem services or interventions to reduce climate-altering emissions, the protection and improvement of soil permeability and resilience, biodiversity, urban forestation, re-naturalization and restoration of covered waterways. It will participate to reduce greenhouse gas emissions and to mitigate extreme events, such as heat islands, atmospheric pollution peaks, and torrential rains.
<b>Monetization of ecological works</b>	The resources collected will support the creation of the Metropolitan Park and de-paving interventions along the green and blue infrastructure.
<b>Urban forestry &amp; drainage</b>	Possible planning compliance measures can comprehend urban forestry on private assets. Maintenance and management conditions of the urban forest created will be details into a specific agreement
<b>Requalification</b>	Specific budget to channel resources from the monetization of mandatory affordable housing quotas to the requalification of existing public housing estates

# SÃO PAULO

The environmental dimension plays a fundamental role in structuring the territory in the new Master Plan, and it is a transversal topic to different systems and policies. The PDE introduces the notion of systemic approach and proposes the creation of the City's Open Areas, Green Areas, and Open Spaces System (SAPAVEL), which aims to preserve and expand São Paulo's environmental heritage. Within this system, there is a set of public and private green spaces, either planned or already implemented, including the City's Conservation Units and Urban Parks. A new municipal fund was also created, especially to guarantee the implementation of new green areas and open spaces in the city.

Some of objectives for environmental sustainability and greening in São Paulo include building 167 new parks, preserving and recovering the environment and landscape. For this purpose, special areas of environmental restrictions prevent and forbid new land parcelling for urban activities within the **macro-area of urban restriction and sustainable use**. It also foresees the development of a sustainable rural development hub. Finally, the **municipal plan for integrated environmental sanitation** will be reviewed, to integrate new guidelines for water supply systems, sewage, urban cleaning, integrated solid waste management and urban drainage

In the different preservation and protection zones defined, it is important to note that categories with the word “environmental” in their titles are differentiated depending on their location within the **Environmental Protection and Recovery Macro-Zone**. Likewise, those related to sustainable development, preservation, and environmental protection are characterized according to the management of the City's green areas.

All existing and planned parks are now a **ZEPAM** to prevent the appropriation by the real estate market of areas of future parks. Remarkably, **111 Urban Parks and 9 Conservation Units** lie within this ZEPAM and are under the stewardship of SVMA. It is noteworthy that the 9 Conservation Units account singly for about 27% of the City's total territory.



Source [HERE](#)

## São Paulo defined mechanisms to protect the environment and become a sustainable city

### Instruments for environment sustainability and greening

<b>Municipal Fund for Parks</b>	Mechanisms to finance the implementation of new parks in areas defined by the Master Plan. For each real (BRL) donated by a citizen or a private initiative, the City is required to contribute with the same amount.
<b>Environmental services</b>	Mechanism that enables the preservation of areas that contribute to the maintenance of the city's environmental quality through compensating the land owners. The municipality pay them for land preservation, which brings back benefits to the society.
<b>SVMA</b>	São Paulo's Municipal Green Areas and Environmental Affairs Secretary is, at the municipal level, the institution responsible for managing and developing the city's green areas, either those of integral protection areas or the urban green facilities such as parks.

### Classification of environmental assets

<b>Green spaces</b>	Urban Structuring and Transformation Axis Zone (ZEUa - Zona Eixo de Estruturação e Transformação Urbana Urban Structuring and Transformation Axis for Environmental Previewed Zone (ZEUPa)
<b>Rural Zone</b>	Promoted planning and environmental improvements by containing urban sprawl, preserving natural ecosystems and encouraging sustainable practices and organise agriculture through incentives. Effective mechanisms linked to minimum and permanent financial resources, and promoted the expansion of environmental protection zones
<b>Territories in adaptation</b>	(1) Environmental Centrality Zone (ZCa); (2) Environmental Corridor Zone (ZCORa); (3) Mixed Environmental Zone (ZMa); and (4) Mixed Zone of Environmental Social Interest (ZMISa).
<b>Areas for environmental protection</b>	Regions of the city that must be protected for providing important environmental services (biodiversity preservation, erosion control, mitigation of heat islands, floor control, water production). Exclusively Residential Environmental Zone (ZERa); Preservation and Sustainable Development Zone (ZPDS); Rural Area Preservation and Sustainable Development Zone (ZPDSr); Special Environmental Protection Zone (ZEPAM); and Special Preservation Zone (ZEP).
<b>ZPDS</b>	Land Use and Settlements Law: “[...] portions of the territory destined for the conservation of the landscape and the implementation of economic activities compatible with the maintenance and recovery of environmental services, in particular those related to productive chains linked to agriculture, mineral extraction and tourism, of low demographic and built densities [...]”.
<b>ZEPAM</b>	Land Use and Settlements Law: “[...] portions of the territory of the Municipality destined to the preservation and protection of the environmental heritage, which share as main attributes remaining Atlantic Forest Segments and other formations of native vegetation, afforestation of environmental relevance, significant vegetation, high rate of permeability and existence of springs, including existing and planned urban parks and planned natural parks, which provide relevant environmental services, including biodiversity conservation, control of erosion and flooding processes, water production and microclimatic regulation”.
<b>ZEP</b>	<b>Preservation Units with Integral protection:</b> Established by the public authorities, these areas aim at preserving the natural heritage by allowing only indirect use of its natural resources by human activities. They “[...] are portions of the territory destined to state parks considered conservation units, existing municipal natural parks and other Integral Protection Units defined by federal legislation (i.e. the National System of Nature Conservation Units Law, No 9895, of 2000) existing and that may be created in the Municipality, with the objective of preserving ecosystems and allowing only research, ecotourism and environmental education.”

4.

## PUBLIC SPACE & URBAN SERVICES

CREATING LIVELY NEIGHBOURHOODS,  
SOCIALY INCLUSIVE, PROMOTING  
ECONOMIC DEVELOPMENT &  
INCREASING ACCESSIBILITY

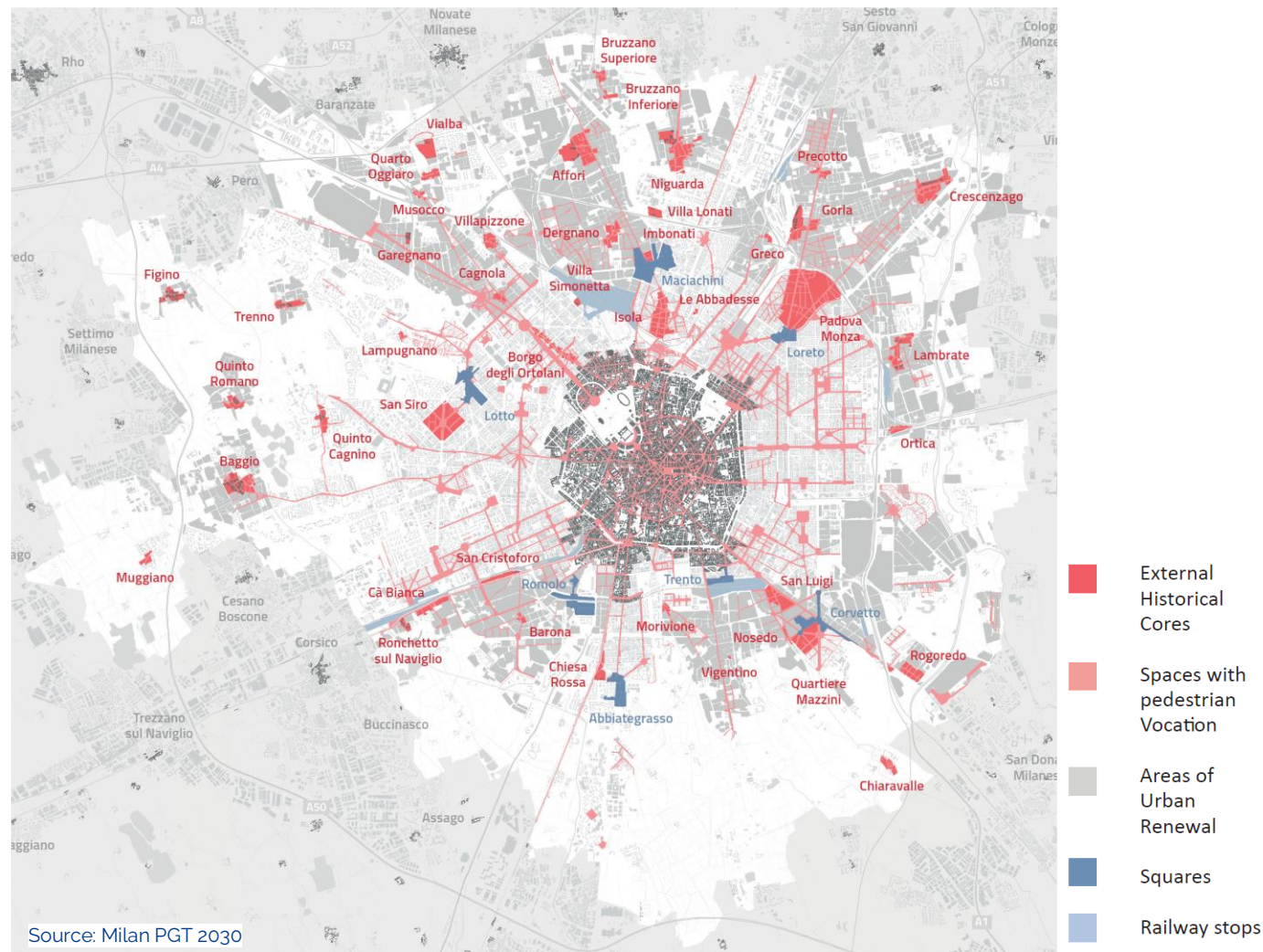


# MILAN

Milan will promote an integral strategy to improve public spaces, placed at the centre of development as primary infrastructure for social inclusion, the creation of a sense of belonging, and the enhancement of the common good.

The objective is to build a compact, dense city of nodes that is highly accessible. Accessibility will be improved by promoting active and soft mobility in areas connected to public transportation. Transportation and interchange nodes will become development platforms and multifunctional development hubs. Proximity to services, transportation, and public space will reduce the dependence of private mobility and increase quality of life. Formerly under-utilised areas or “non-places”, these nodes will be transformed into strategic metropolitan gates, distributed radially at the edge of the low-emission zone. The seven reconnected railway yards will thus become cornerstones of urban regeneration efforts to reinvent public space and reduce socio-spatial fracture, by connecting main infrastructure axes with the different urban nuclei. Urban centres will be multiplied beyond original boundaries to reorganise urban life around a system of interconnected squares bridging together the periphery and the centre. Milan’s territory seek to create interdependent relationships and connections between complementary and integrated neighbourhoods.

To distribute the benefits of development foster the attractiveness of the city to all income and age groups, the municipality will provide incentives to improve affordable housing. The city wants to promote social diversity and new opportunities, by restoring popular districts. With the regeneration of the existing building stock and vacant housing, including different incentives, Milan will prevent the abandonment of buildings and their recovery. The legislation penalises owners that do not upgrade or occupy their property.



## Instruments and strategies to improve the urban realm and its connectivity:

### Connecting spaces & people

**Interchange Nodes** Flexible rules to trigger mix-used development that improve the public realm, overcome infrastructural barriers, and strengthen the relation with surroundings. Especially in large public transport and interchange facilities often described and/or perceived as isolated, degraded, unsafe, and close areas.

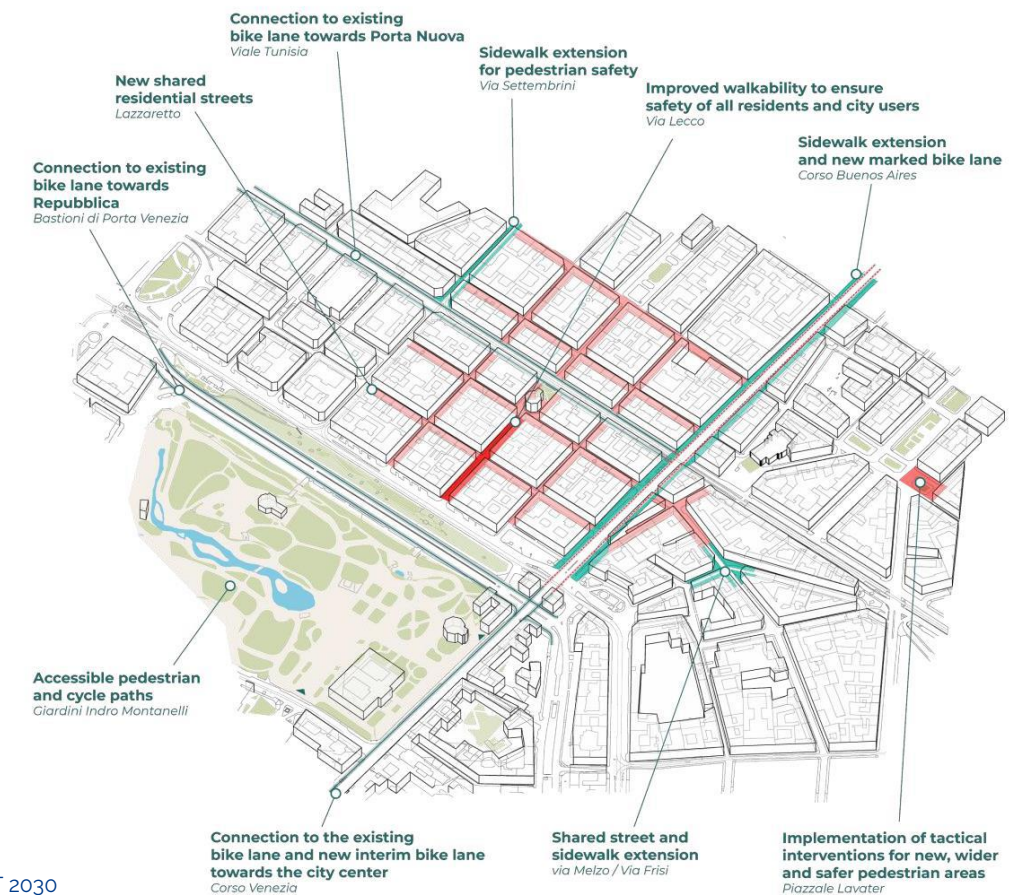
**Shopping Malls** As they require high standards of accessibility, they can only be located in urban regeneration sites, which comprehend interchange nodes, squares, and Great Urban Functions. They can therefore participate to articulate the use of these spaces and increase the conditions of existing transportation hubs, thus limiting car traffic.

### Social & Affordable Housing

**Public housing services** Affordable housing and Public housing can be an alternative to the provision of public services and facilities required in planning obligations of private developers, thus allowing all urban functions to contribute to their expansion. Specific budget to channel resources from the monetization of mandatory affordable housing quotas to the requalification of existing public housing estates.

Affordable rental schemes (housing, student residences, co-housing, etc.) are allowed to exceed the maximum building ratio. 9 areas of municipal ownership have been assigned to Public and Affordable Housing uses for 1,300 new dwellings, which sum up to the 6,200 planned housing to be built on the vacant railway yards and other redevelopment schemes.

**Mandatory Quotas** Those developments exceeding 10,000 square meters of building lot or Gross Floor Area with at least 20% of housing must provide at least 40% of affordable housing (maximum 20% for sale and minimum 20% for rent and student accommodations).



Source: Milan PGT 2030

## Urban incentives

### Active facades and public space

In the interchange Nodes and strategic Squares new developments can exceed the maximum FAR if they provide new or better relationships with the surrounding areas by densifying the building curtains, enhancing the public realm, providing pedestrian connections and activating new functions overlooking the public space. Neighbourhood shops and small businesses (up to 250 sqm) at the ground floor facing public spaces can be excluded from the total amount of GFA allowed and the payment of urbanization fees.

### Mixed use

The rules for commercial and manufacturing activities facilitate the functional mix, simplify and encourage changes in use. The Plan, allowing building renovation interventions to use all the existing Gross Floor Area, supports an integrated mix of economic activities, forms of production, private services and residence.

### Private service agreements

Private services can be provided through agreed criteria based on economic balance between public and private benefits, such as the quality of services, prices, accessibility to certain users, and the relationship with the neighbourhood.

## Sustainable mobility

### Public transportation

Milan is developing its fifth metro line (M4), which will be completed in October 2024. The PGT envisages extensions of existing metro lines (M1 and M5) and the development of a new local urban railway infrastructure around the city ('circle line'). The central core of the city ('Area C') is a restricted traffic zone; a new restricted area ('Area B') – encompassing the whole city – has been created to limit the entrance of the most polluting vehicles and those over 12 m. long.

### Active mobility

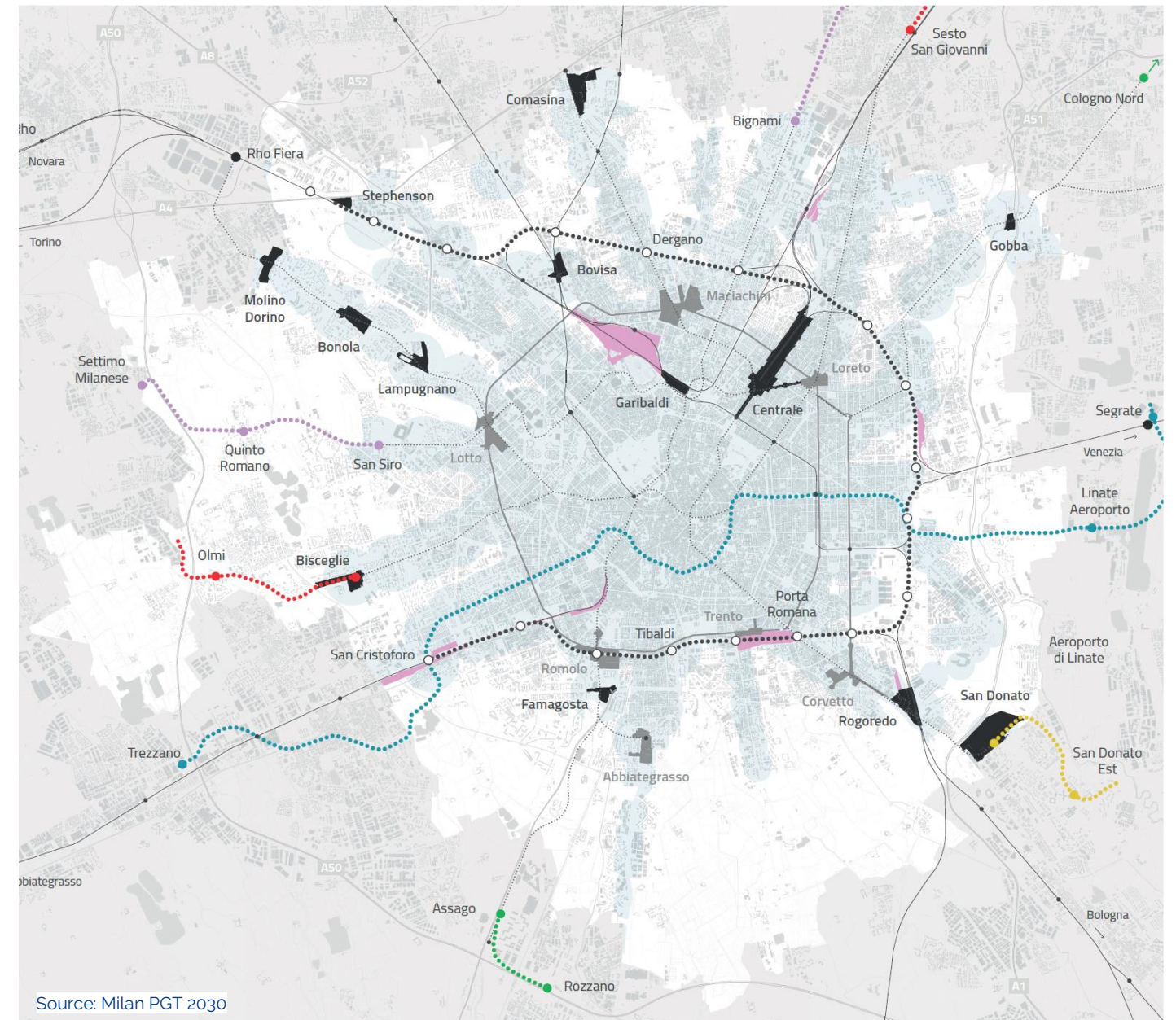
Along with the delivery of new bike lanes through the main street network, the PGT decreases the provision of public car parks and makes mandatory for new developments to provide private parking for bicycles (10% of overall parking space)

### Increasing FAR in highly accessible areas

To promote sustainable mobility through enhanced connectivity, in accessible areas close to public transportation, the Floor Area Ratio can reach 1m2/m2 and even exceed it by providing shares of Affordable or Public Housing

### 15-minute city

Methodology to influence decision-making and promote interventions taking into account urban needs. This relies on extensive data collection to create scenarios of interventions, analyse service needs, distribution, interactions, and their connection to the mobility network. Critical needs emerging from existing and potential facilities are also evaluated to design adequate interventions promoting mixed-used, accessible, and sustainable neighbourhoods.



# SÃO PAULO

In order to face the lack of adequate and well located social housing opportunities, the new Master Plan has doubled the areas known as **Special Zones of Social Interest (ZEIS)**, which are designated to the provision of affordable housing, particularly for families whose income is lower than 3 minimum wages. Besides establishing a minimum and permanent source of funding for social housing policies, the Master Plan has also created the **“Solidarity Share”**: a counterpart mechanism which establishes that large developments must donate 10% of the built area to affordable housing, envisioning a more balanced and plural city. Right to decent housing is thus understood as a social right.

Developing a more balanced city requires reversing the current mobility model, highly based on individual transportation, long hours in traffic, and extensive commutes. The Master Plan approaches this issue by integrating and articulating different means of transportation. It stipulates minimum and permanent investments for improving the public transportation system, as well as the infrastructure for non-motorized means of transportation (bicycles and pedestrians), which are less polluting. It also recognizes new elements of the urban mobility system, such as logistics, waterways and car sharing, aiming at structuring a more efficient, environmentally balanced, and widely connected infrastructure. It therefore promotes the redefinition of public space and road design.

In order to reduce the need of long commutes and to bring people closer to their jobs, the new Master Plan proposes a growth model based on the public transportation system, through **“Structuring Axes of Urban Transformation”**. The goal is also to improve land use in areas highly accessible by medium and high capacity public transportation networks (train, subway, monorail, and bus corridors). Furthermore, tools were developed to guarantee urban quality to this process of transformation and densification, with the improvement and expansion of public spaces, a mix of residential and non-residential uses, and incentives for active façades and public fruition, making a more human-scale street.



Source: São Paulo ADESAMPA & SMUL

## The new Master plan defines guidelines to create active and inclusive public spaces:

### Urban incentives

<b>Active façades</b>	Incentives to buildings with commercial use, services and facilities located on the ground level, with open access to the public.
<b>Public space</b>	Incentives to developments with areas assigned for public use. Large sidewalks with 5m of minimum width in proximity of public transportation stations, and in areas of influence.
<b>Mixed use</b>	Incentives to commercial use, services and facilities will not be computable for development rights up to 20% of the built area.

### Sustainable mobility

<b>Public transportation</b>	Deter use of private car and prioritize public transportation: at least 30% from the urban development fund. Reduce commuting time.
<b>Active mobility</b>	Develop biking and walking, expand mobility infrastructure. Classify mobility conditions and integrate means of transportation

### Guiding growth near public transportation

<b>Discouraging parking space</b>	More than 1 parking space per housing unit or per 70m <sup>2</sup> of non-residential use will be considered computable to development rights..
<b>Part quota</b>	Establishes the minimum quantity of dwelling units according to the land area. Therefore, increased FAR allows building and population densification, improving utilization of existing infrastructure.

### Social & Affordable Housing

<b>Solidarity Share</b>	Every development larger than 20,000 m <sup>2</sup> must donate 10% of its built area to Social Housing or the equivalent for purchasing land. As a counterpart, these 10% will not count for the total development rights.
<b>OUC &amp; AIU</b>	Consortium Urban Operations (OUC) or Urban Intervention Areas (AIU): At least 25% of resources will be directed at promoting social housing within the intervention area, especially purchasing land.
<b>FUNDURB</b>	Investments in urban improvements for the entire city: Social Housing (at least 30%); Environmental Conservation Units; Neighbourhood Plans; Public Transportation, Bike Lanes and Sidewalks (at least 30%), Social Facilities, Public Spaces, Parks, Cultural Heritage.
<b>Criteria</b>	Prioritizing population with income lower than 3 minimum wages. Regularizing land within informal settlements. Reducing housing deficit: special Zones of Social Interest (ZEIS) were duplicated. Expanding social housing and urban facilities near the public transportation system.



5.

## URBAN REGENERATION

TRANSFORMING VACANT & UNDER-USED SPACES FOR A CONNECTED AND COMPACT CITY

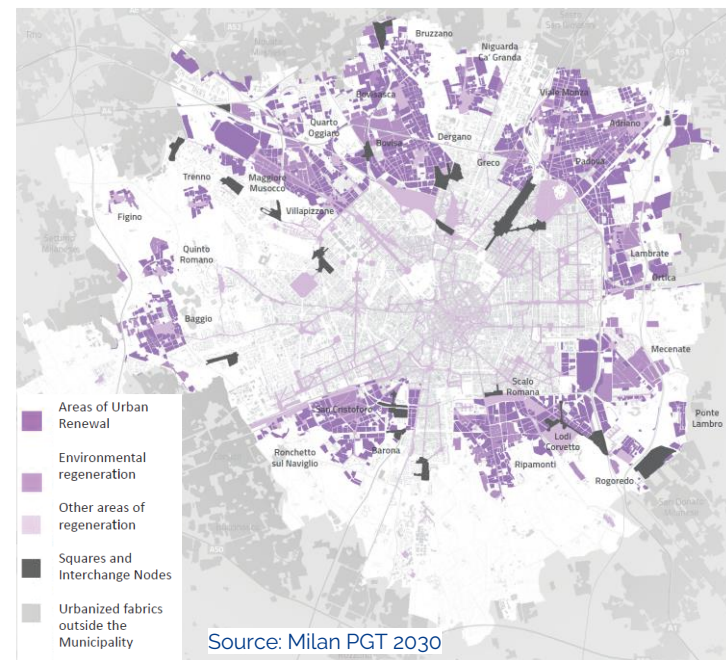


# MILAN

Urban regeneration in Milan is thought of to integrate public and private functions of metropolitan importance, such as research, academia, innovation, sport, culture, and health, therefore becoming the driving force of the city's development. It seeks to provide services that are connected to the urban fabric and accessible by public transportation, in order to transform degraded areas into new hubs that attract international investments, create jobs, provide green spaces, and participate to the revitalisation of neighbourhoods. The expansion or relocation of important activities in new regenerated areas has to be aligned with the modernization of infrastructure and the organization of public events and activities, to ensure their liveliness.

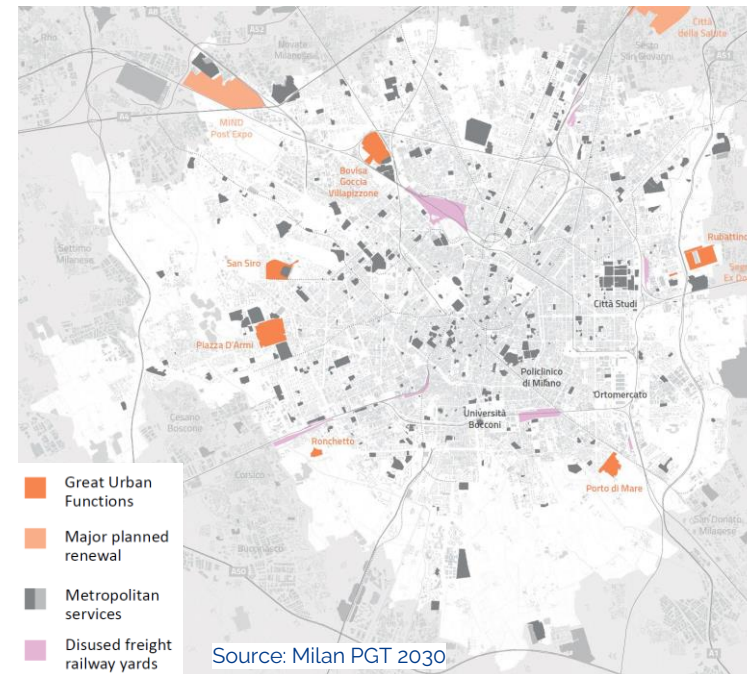
This vision prioritised the redevelopment of large, vacant spaces. They will be attributed specific functions linked to public use or public interest, environmental preservation and greening strategies, or other important uses of metropolitan interest (i.e. new institutional and administrative headquarters, logistic structures for cultural production, public library, hospital facilities, classrooms and university services, incubation spaces for enterprises, sports and leisure facilities, sustainable mobility, new urban parks, etc.), contributing to the vision of a compact and connected city, that grows in a conscious manner. They will have a proper "ancillary" function, which is not imposed by the plan but flexible, and that will provide them with a new identify. These areas are mainly public, non-fractionated properties of considerable dimensions and located on strategic axed of development.

Projects will include elements of reintegration that provide new functions to crucial areas that are easily accessible but face important challenges. Infrastructure axes and connections, currently forming urban barriers separating different parts of the city, will become bridges



of integration that generate new structures to rebalance the market of urban values. Regeneration will thus increase the existing capital of the city by reusing its assets (degraded, vacant and under-used building stock) through targeted interventions that seek connections with metropolitan and peripheral areas. A series of incentives will increase the renewal potential and thus promote mix-used functional areas, quality public space, public and private services, commercial activities and small local businesses, as well as green connections.

The plan seeks to integrate various existing projects, such as the design of public works, the regulation of micro-interventions on buildings and open space, the treatment of energy and water resources, socio-economical dimensions, amongst others. The strategy therefore focuses on replicable, low-complexity interventions that can be managed in a short time and trigger a virtuous process of environmental and urban regeneration.



## Tools and mechanisms to transform the urban realm:

### Morphological control

**Morphological control** Preventive control of transformations on the built fabric stated in norms for Morphological Rules. Regulate height of buildings' facades. For transformations in these areas, new buildings cannot exceed heights of adjacent buildings. Possibility of derogation exclusively with the opinion of the Landscape Commission.

**Facades** Rules to regulate the height of facades of buildings. For the transformations in certain areas, the Plan normally provides that new buildings cannot exceed the heights of adjacent buildings.

**Derogation** The plan provides the possibility of derogation exclusively with the opinion of the Landscape Commission.

**Landscape commission** Collegial body provided for by the **National Code of Cultural Heritage and Landscape of 2004**: formed by 11 experts with qualified and proven experience in landscape. They are subjects to the Municipality and do not receive compensation for their work. The panel includes a scientific group represented by Professors of the Politecnico di Milano, representatives of the Professional Orders, and other professionals. They are appointed for 3 years by the Mayor on the basis of candidates proposed by Universities, Professional Orders, and Associations. It ensures debate and collegiality in the evaluation of projects

### Regeneration areas

**General rules for regeneration areas** The Plan defines a set of devices aimed at activating the redevelopment of degraded areas (abandoned or underused buildings and open spaces, poor soil quality, inadequate conditions of public spaces). To facilitate the renewal interventions, the Plan allows the transfer of building rights between built areas and offers exceptions and discounts with respect to the territorial equipment due. Within the Regeneration Areas, at least 50% of the urbanization fees and monetization costs deriving from developments in the City core can be used for public works.

**Environment Regeneration Areas** Protect the areas where soil de-urbanization processes are a priority. The transfer of building rights from Environmental Regeneration Areas and urban forestry interventions are facilitated.

**Pedestrian Oriented Areas** The redefinition of the relationship between the street and the ground floors of the buildings is central. The Plan supports neighborhood stores, crafts, private services, restaurants and bars overlooking the public space.

**13 Interchange Nodes** Enhance urban quality by increasing functional mix, redeveloping public space, overcoming infrastructural barriers, improving relations with surrounding areas

**6 Great functions in urban voids** Areas eligible to host strategic functions of public use or general interest (Including private areas). Allow the growth of functions of excellence and global attractiveness of the city.

**7 Strategic Squares** Traffic hubs between centre and periphery, that will become central spaces with connection to public transport and vehicular mobility, that coexist with pedestrians, new functions for public space, green areas, and new relations with surrounding areas.

**88 Neighbourhoods with own identity** Local Urban cores and streets networks creation a supporting structure for collective urban life. Based on identity of neighbourhoods, facilitating the establishment of small businesses and private services, and prioritizing active mobility.

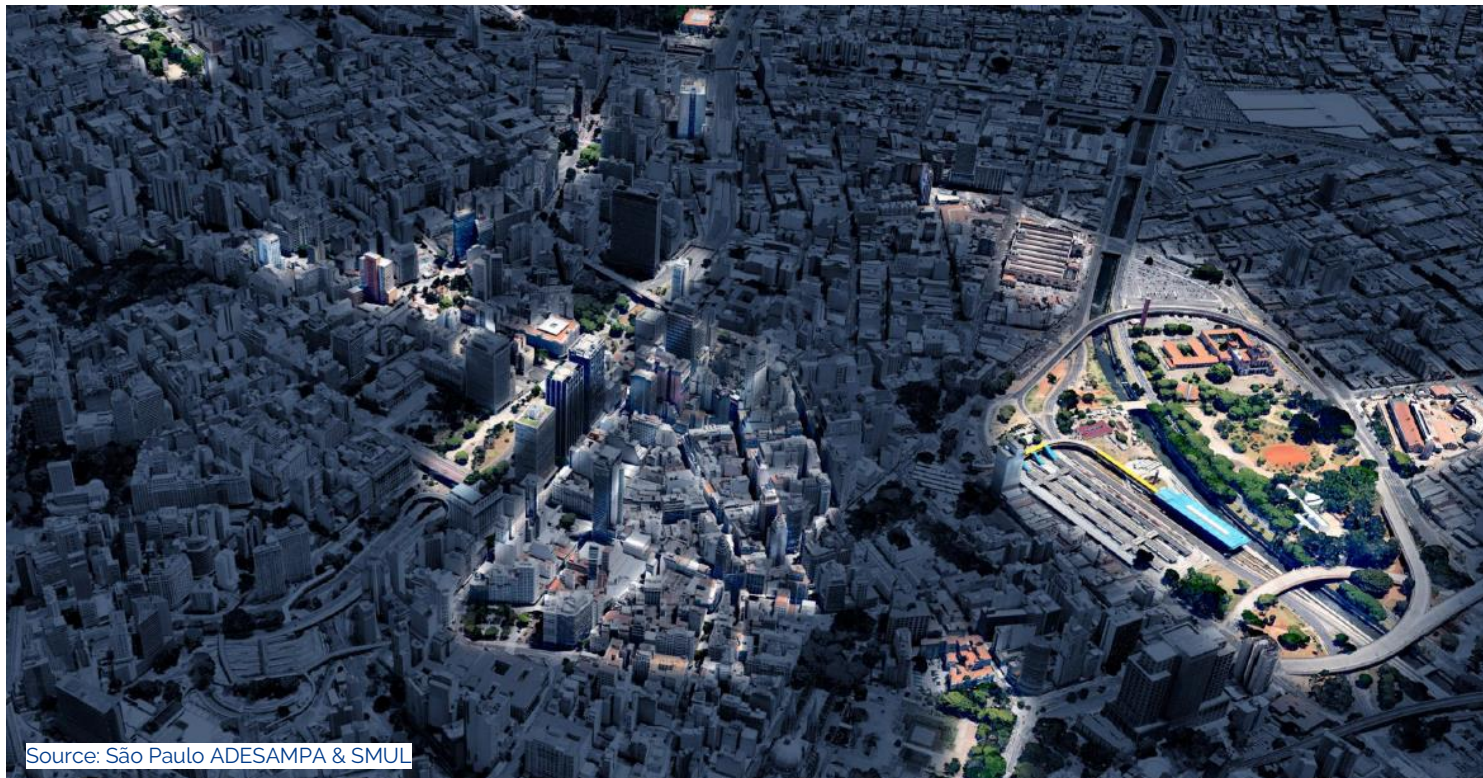
**Recovery of abandoned and disused buildings** The Plan defines a specific device aimed at discouraging the maintenance of abandoned (> 1 year of vacancy) buildings, safeguarding the reuse of existing GFA (instead of the basic 0.35 mq/mq FAR) only in cases of recovery or demolition within 18 months of their formal identification.

# SÃO PAULO

In order to preserve the quality of life inside neighbourhoods, the Master Plan sets heights limits and lower development rights, controlling the densification in these areas. The aim is to avoid dispersed verticalization and the sprawl of large-scale projects. The plan also defines incentives for new centralities in the most distant neighbourhoods, providing urban and public facilities, in coordination with Regional Plans and Neighbourhood Plans. It seeks to reduce socio-spatial inequalities by strengthening hubs and linear centralities, with spread out employment opportunities and new development axes. Mechanisms implemented in these areas, such as urban and fiscal incentives, combined with the expansion and improvement of the infrastructure network (such as transportation and communication systems), will foster the equilibrated development of productive activities and their distribution in the urban space.

New buildings in these centralities are expected to have mixed uses (with active ground floors), to reduce the distance between employment opportunities and housing, fostering new urban dynamics, especially in public spaces. To improve and rebalance the supply of housing and employment opportunities, as well as to connect centralities from several municipalities within the Metropolitan Area, the PDE identifies a strategic territory as the “**Macro-area of Metropolitan Structuring**”. In this area, where the main infrastructure systems (railways, arterial avenues, highways, and rivers) and productive spaces are located, **Urban Intervention Projects** will be key tools to implement the necessary spatial, social and economic transformations for (re)structuring metropolitan dynamics.

In order to expand the preservation, articulation, and development of cultural, affective, and symbolic places of great importance to the memory, identity, and cultural life of São Paulo, the Master Plan has defined **Special Zones of Cultural Preservation (ZEPEC)**, as well as the **Municipal System of Cultural Heritage, Creative Economy Areas, and Territories of Cultural and Landscape Interest (TICP)**, linked to the Regional and Neighbourhood Plans. The Master Plan also regulates and creates new cultural tools to preserve the historical, scenery, environmental, social, and cultural interest facilities. On the other hand, special strategies have been developed to confront vacant or under-used areas, protecting existing industrial areas, and creating new areas attracting investments and economic activities. In this regard, the plan seeks to develop creative economy hubs and technology parks, to promote scientific and technological knowledge and innovation.



Source: São Paulo ADESAMPA & SMUL

## Mechanisms to create a dense, compact, and connected city:

### Incentives

**Creating jobs next to housing** For non-residential uses in specific areas: maximum FAR of 4, exemption from charging onerous grant for exceeding. This seeks to re-balance job opportunities in the territory.

**Economic and social development** Strategic areas with tax and urban incentives in order to expand the creation of jobs and business opportunities in the city: Perimeters of Economic Development Incentives, Technological Parks, Creative Economy Hubs, Economic Development Hubs, Polar and Linear Centralities, Rural Development Hubs.

### Construction limitations & rules: the social function of property

**Floor Area Ratios (FAR)** Basic FAR of 1,0 for the whole city: any additional development rights will belong to São Paulo’s citizens and that part of the gains from its exploitation will be reversed to the community and invested in improvements for the city. Developments exceeding the FAR will be charged an onerous grant that will go to the Urban Development Fund (FUNDURB).

**FUNDURB** Investments in urban improvements for the entire city: Social Housing (at least 30%); Environmental Conservation Units; Neighbourhood Plans; Public Transportation, Bike Lanes and Sidewalks (at least 30%), Social Facilities, Public Spaces, Parks, Cultural Heritage.

**Vacant or underused land** Urban management tools discourage vacancy or under-use of land, which represent a large cost for the society, increasing the cost of public services and infrastructure per inhabitant. Owners of underused or unbuilt properties should submit a project, start construction, and finish construction with parcelling and/or building of the area in maximum 5 years. Owners of unutilised properties should give use to the building in maximum one year. In case of non-compliance with deadlines, the city will charge Time Progressive Tax and, after 5 years, expropriate the property under Payment of Government Debt Bonds.

- **Underused Properties:** >500 m2 with FAR used lower that minimum required.
- **Unbuilt Properties:** >500 m2 with FAR = 0
- **Unutilised Properties:** Buildings and other properties with minimum 60% of Built area vacant for <1 year.

### Minimum requirements for urban improvements

**Urban** Development of an Urban Intervention Project (PIU) with defined implementation stages. Definition of parameters for land use and occupation (when applicable).

**Social** Attention to social housing needs. Implementation of urban and social facilities.

**Environmental** Solutions for risk areas and contaminated land. Interventions to improve environmental and landscape conditions.

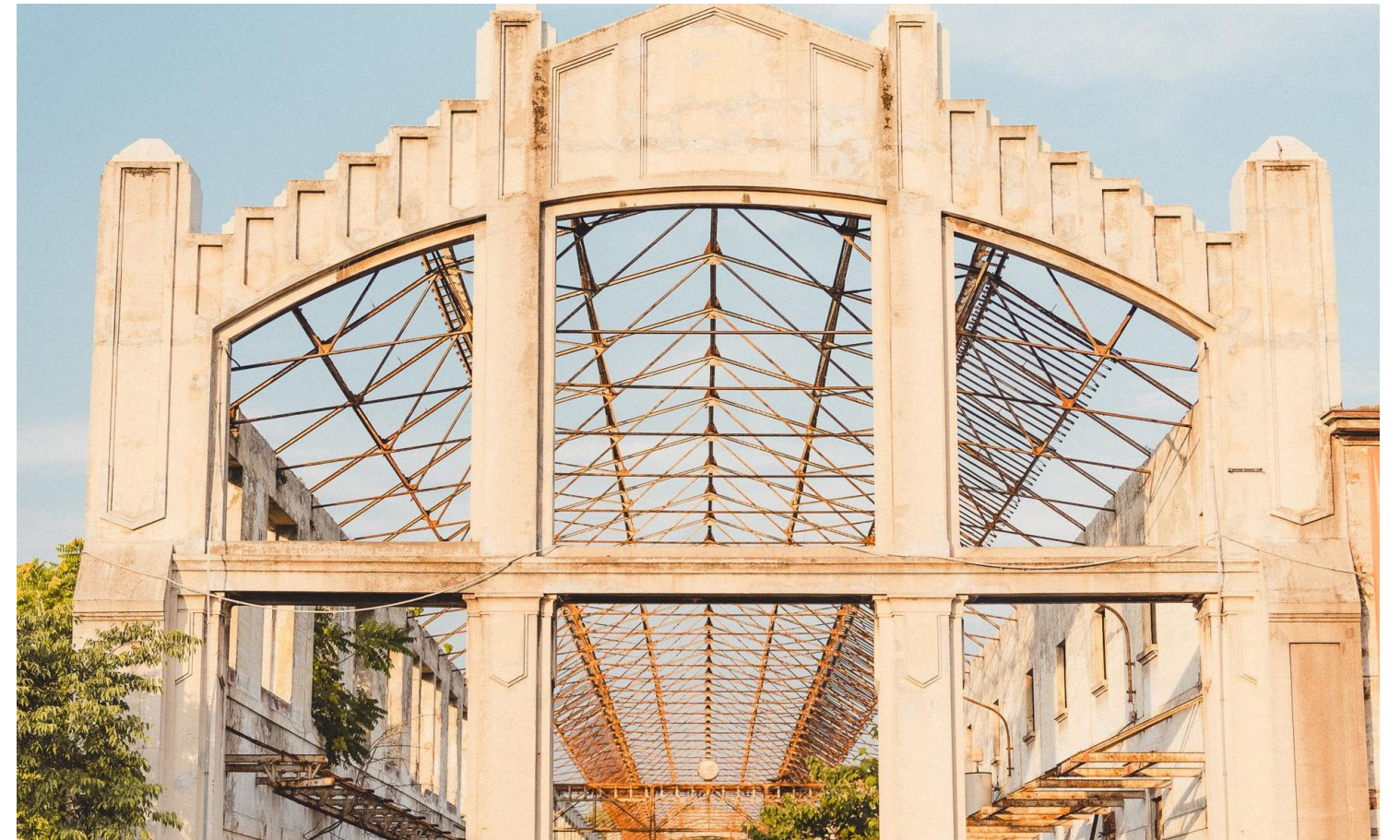
**Economic** Study on the urban interventions ‘economic feasibility. Financing strategies-

**Management** Mechanisms for participation and social control. Instruments for monitoring and evaluating the implementation process.

6.

## CASE STUDIES

MILAN: THE EX-MACELLO & THE NEW  
BOVISA AREA REGENERATION  
SÃO PAULO: THE BRAS AREA



# MILAN – THE EX MACELLO

The Ex Macello (ex-abattoir) regeneration process took place in the framework of the Reinventing Cities contest. The winning project “ARIA” was selected in 2021 and is represented by Redo Sgr Spa società benefit. It seeks to transform the area in a multifunctional space connected to the rest of the neighbourhood and including both social and environmental resilience aspects. The project will transform the Ex Macello into a lively neighbourhood that fosters culture, creativity, and environment sustainability, and encourages inclusive and innovative cohabitation experiences. The Ex Macello has a great potential for the district’s regeneration into an area of quality environmental, urban, and social development, that can build synergies with surrounding transformation projects (above all: “Porta Vittoria” requalification plan, the redevelopment of the General Markets, the future new Central Library) to create a new urban and residential identity and community facilities.



## Characteristics of the site

<b>Size</b>	15 hectares - 148,371 square metres surface area.
<b>Land ownership</b>	Public – Municipality of Milan. Property transfer: leasehold basis, including related building rights, with indication of a minimum price set by the owner (73,123,600 euros). Granting of Surface Rights for 90 years.
<b>Former use</b>	The Ex Macello is the site of Milan’s former slaughterhouse and meat market.
<b>Conditions</b>	The complex is formed by a set of degraded properties with buildings and structures still present, dating from the early 1900s. The site has been abandoned for more than 20 years. It is composed by two areas, separated by Via Cesare Lombroso, that were part of the General Market. The site is almost entirely paved, except for some small areas of permeable vegetation. Much of the surface area is occupied by buildings that were used both for the slaughter of animals and the sale of meat, and for complementary activities (offices, quarantine areas, bathrooms and canteen).
<b>Location &amp; Connectivity</b>	Located in the south-east district of the city (Quartiere Calvaire in Municipality 4). It is at very short distance from Milan Porta Vittoria station, being served by suburban trainlines connecting Milan’s city centre to its peripheries and metropolitan surroundings, and facilitating the access to many relevant areas such as the Porta Nuova and Repubblica business districts, amongst others. The area is also served by public transport (bus lines & bike sharing point) and important road connections for private mobility.

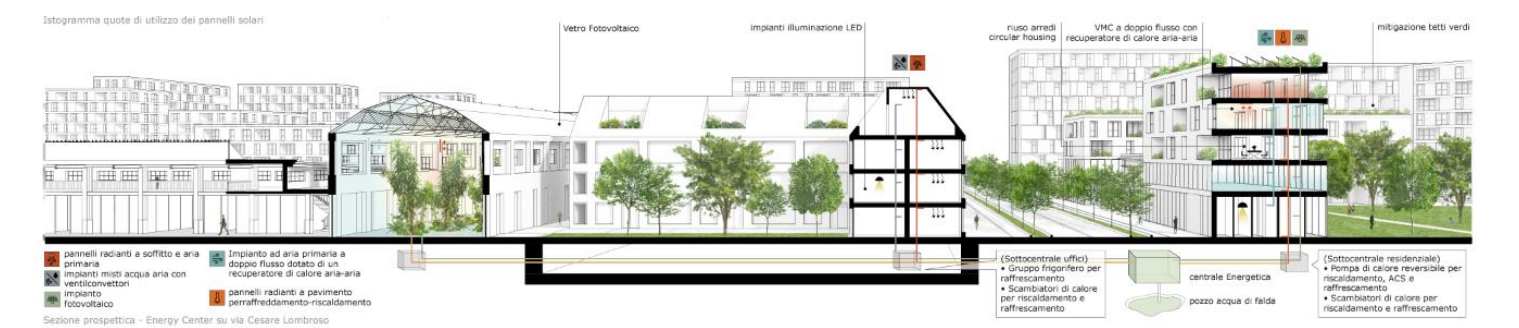
<b>Planning Rules</b>	The area has been provided by PGT with specific planning regulations focused on regeneration (obligatory implementation plans). They do not restrict functions for the area, except for large-scale retailing. Of the entire maximum admitted GFA (124.424 sqm: 0.81 sqm/sqm), an amount of not less than 50% has to be of affordable housing (max 20% for sale and the rest for rent); 30% of the area must be returned to the Municipality; 20% of the overall surface must be a permeable park. Six buildings are protected by the Superintendency for cultural heritage and must be preserved and reused.
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## Regeneration project

<b>Objective</b>	“Regeneration of a degraded environment, by maximising urban and environmental quality, and social and operational mix, in synergy with the context”
<b>Considerations for interventions</b>	<b>Urban heat island:</b> phenomena affecting the area because important paved surface. Increasing permeable surface with de-paving and greening strategies should be considered, such as preservation of existing trees present on the site.
<b>Current uses</b>	The Aria Ex-Macello is currently used to host events and temporary activities, including concerts, performance art, workshops, and much more. These uses will accompany the transformation of the area and connect the cultural and design scene with the neighbourhood. More information <a href="#">HERE</a> .
<b>Implementation</b>	<b>2023 - 2028</b>
<b>Planned Interventions</b>	<p><b>New IED international campus:</b> Private services can be provided through agreed criteria based on economic balance</p> <p><b>POD science district:</b> dedicated to the dissemination of future eco-friendly technologies and smart management of open spaces.</p> <p><b>Affordable housing:</b> One of the largest affordable housing intervention of the new millennium in Milan. More than 1,000 apartments of varying size for sale (€2500/smq) and rent (€500/month).</p> <p><b>Green Areas:</b> plants will reduce environmental impacts with the construction of parks, green yards, vegetable gardens, green facades, etc.</p>
<b>Environmental characteristics</b>	<p><b>Carbon negative project:</b> connected to the Ecogrid energy district and the photovoltaic energy of the Renewable Energy Communities. ARIA will be the 1<sup>st</sup> carbon-negative building in Milan using and producing 100% of renewable energy through 30,000 square metres of photovoltaic panels installed on roofs, improved electrical and thermal efficiency by design, and active sustainable mobility connected to green spaces. 52% lower carbon footprint compared to Business As Usual construction projects</p> <p><b>LEED Gold certification:</b> for all the buildings, and LEED for Cities &amp; Communities certification for the masterplan. At least 30% of constructions materials will come from recycled sources.</p> <p><b>Air Factory:</b> purify indoor environments by filtering atmospheric contaminants.</p>

More information and details about the project can be found [HERE](#) and [HERE](#).



# MILAN – MoLeCoLa

The Bovisa Area is undergoing an important regeneration process that encompasses two main different complementary projects. The first one, the MoLeCoLa (Mobility, Learning, Community, Lab), as for the Ex Macello, took place in the framework of the Reinventing Cities contest. The [Park Associati Architects](#) team won the contest. The proposal seeks to create an innovative and sustainable technological district allowing to integrate and promote the redevelopment of the old Bovisa industrial district. The regeneration of the Nodo Bovisa is an opportunity to connect the two areas currently separated by the tracks, to repair the district and to integrate the station as a gateway to a strategic urban functions system. The second major regeneration project, in fact, to be developed in synergy with MoLeCoLa, is the extension of the university and research facilities of the Politecnico di Milano inside the “Goccia” (a large drop-shaped brownfield site).



Source PARK ASSOCIATI - [HERE](#)

## Characteristics of the site

<b>Size</b>	Nodo Bovisa: 9 hectares, 91,000 m2
<b>Land ownership</b>	Public – Municipality of Milan: 54,000 m2 Private – Ferrovienord: 37,000 m2. Surface rights including related building rights with minimum of 14,400,000 euros for a maximum period of 90 years. Possible to transfer further building rights.
<b>Former use</b>	Industrial properties, brownfield sites (formerly Montedison) sold to the Municipality of Milan after demolition of buildings.
<b>Conditions</b>	Besides the station and the forecourts in front, currently used for parking, the site is composed of an extensive brownfield land east of the tracks
<b>Location &amp; Connectivity</b>	Located in the North-East of Milan, the Nodo Bovisa site includes the Milan Nord Bovisa-Politecnico station, connecting to the city centre and the international Malpensa airport, as well as the North of the Metropolitan area. Strategic hub along the north-west central line (porta Nuova – Rho-Però exhibition centre).
<b>Planning Rules</b>	Part of the “Piani Attuativi Obbligatori” (obligatory implementation plans) as “Nodo di interscambio” (Interchange Node), one of the areas with specific planning regulations focused on regeneration defined in the “Piano delle Regole – PdR” of the PGT, in Table R.02. The PGT Milano 2030 identifies the site as belonging to areas of the “Tessuto Urbano Consolidato - Ambiti di Rinnovamento Urbano – ARU” (Consolidated Urban Fabric - Urban Renewal Areas) and in part as instrumental areas.

## Regeneration project

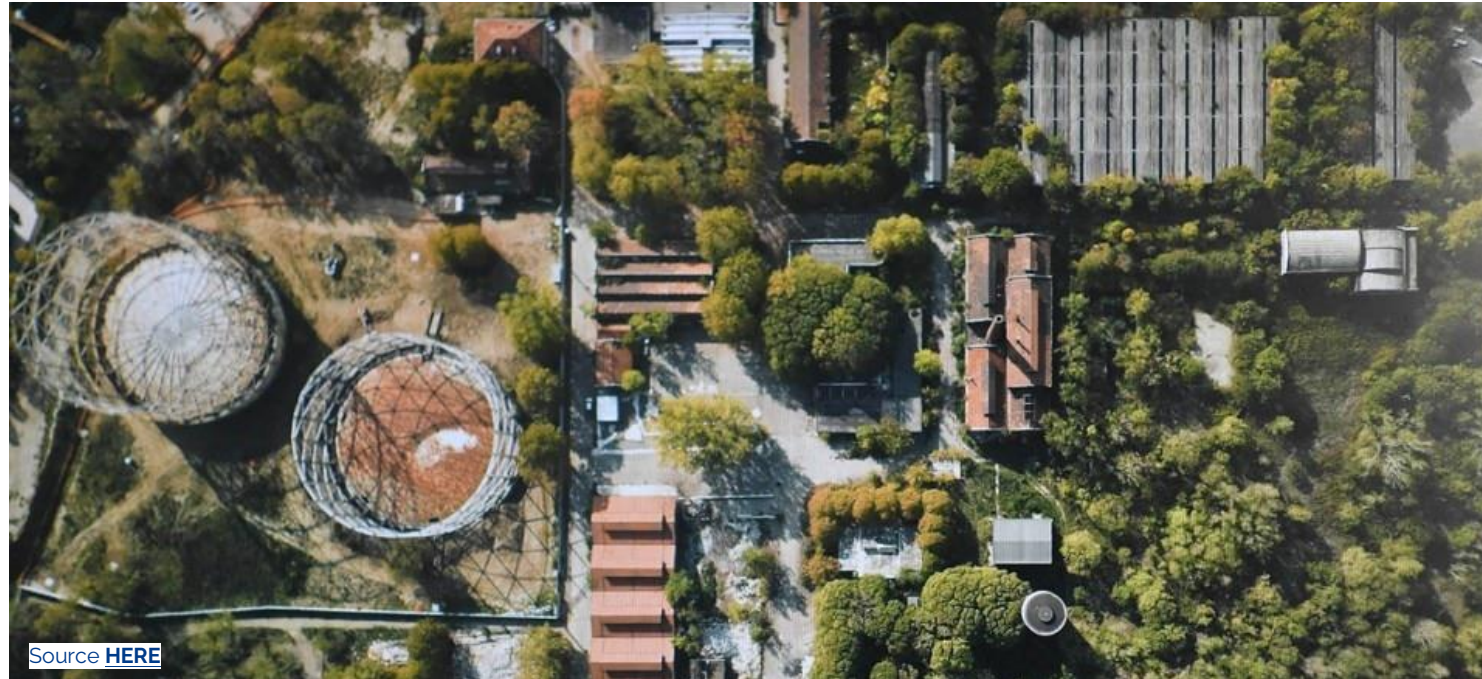
<b>Objective</b>	Reconnect the areas separated by the railway tracks with the integral redevelopment of the station and the integration of public and private spaces through active ground floors. The district will be “idea-producing” with functional uses and increased accessibility.
<b>Proposal</b>	“gateway to the city for which town planning regulations are foreseen aimed at catalysing investments in order to develop the existing infrastructures and trigger urban regeneration”
<b>Implementation</b>	2023 - 2030
<b>Planned Interventions</b>	<p><b>Redevelopment of railway station:</b> creating of new gateway and urban centre (public ownership part). Multimodal interchange hub with trams, cycle lanes, parking for scooters and shared bicycles, and railway station.</p> <p><b>Recovering courtyard housing:</b> creating a path of green and built public squares linked through an urban promenade.</p> <p><b>Functional mixed uses:</b> Housing (residences and student housings), production (commercial activities), and interaction (co-working, FerrovieNord Headquarters, green public spaces, offices, spaces for start-ups)</p> <p><b>Active ground floors:</b> public multipurpose spaces following 15-minutes city principles.</p> <p><b>Green spaces:</b> creation of a park of 300,000 square metres with 65% of green areas and more than 750 trees, promoting biodiversity.</p>
<b>Environmental characteristics</b>	<p><b>Carbon negative project:</b> 93% lower carbon footprint compared to Business As Usual construction projects, and goal to be zero emission by 2050</p> <p><b>Circular economy:</b> 90% of construction materials are responsibly sourced and buildings are designed for disassembly.</p> <p><b>LEED certification:</b> for Neighbourhood development credits.</p> <p><b>Water:</b> savings measures to reduce indoor water footprint by 44% and reuse 100% of outdoor water with groundwater system. Promoting permeability with unpaved areas</p>

More information and details about the MoLeCoLa project can be found [HERE](#) and [HERE](#)

# MILAN – BOVISA GOCCIA (CAMPUS NORD)

The masterplan to regenerate the Bovisa-Goccia area for the extension of the campus of Politecnico di Milano has been designed by the renowned architect Renzo Piano (RPBW Architects). The project seeks to integrate the Goccia and the Politecnico’s project for the gasometers area, reconnecting them to the city by improving its accessibility and attractiveness. It involves the extensive reconversion of large industrial areas into research and innovation centres, surrounded by a large spontaneous urban forest. This includes the Mario Negri Institute (Pharmacological research) and the Design and Engineering campus of the Politecnico di Milano, with offices, laboratories, start-up incubators and spaces for culture and residences in response to a growing demand for homes, specifically for students.

Its objective is to become one of the most important centralities of Milan, especially attractive to the youth and open to the public.. The design is the result of an agreement between the public and private sectors, as well as interinstitutional collaboration. The Region will provide 55 million euro investment to the Bovisa redevelopment.



## Characteristics of the site

<b>Size</b>	32 hectares
<b>Land ownership</b>	Public – Municipality of Milan: 23.4 hectares Private – Politecnico di Milano: 9.1 hectares
<b>Former use</b>	Factory (gas production), brownfield area
<b>Conditions</b>	Just north of the headquarters of the Politecnico di Milano, it includes a few abandoned industrial buildings, a couple of Gasometers and a spontaneous urban forest grown up after the cessation of industrial activities
<b>Location &amp; Connectivity</b>	The northern district of Bovisa, in Milan, is iconographically marked in the collective memory by a few traces of industrial archaeology, the gasometers and the large thermal power plant, enclosed in an area that is locally called “Goccia” (the “Drop”), for the conformation of the area physically delimited by the railway tracks.
<b>Planning Rules</b>	The area is covered by the Programme Agreement for the construction of the Gasometers Park. Land reclamation is almost complete.

## Regeneration project

<b>Objective</b>	Upgrade the area around the former gasometers, providing for a large park (24 ha), the expansion of the campus and the establishment of a science park. Creating an accessible campus open to the city and to the exchange of ideas and functions.
<b>Proposal</b>	Realization of a science park and innovation centre with areas dedicated to services for students and citizens.
<b>Implementation</b>	2023 - 2026
<b>Planned Interventions</b>	<p><b>20 new buildings:</b> 4 stories, 16 metres high, covering approximately 105,000 square metres</p> <p><b>Civic Schools:</b> added to the buildings and connected by pedestrian tree-lined avenues with mixed uses. It is a high training schools facility in the fields of entertainment and culture.</p> <p><b>Sustainable mobility:</b> a system of orthogonal paths organised around the main pedestrian axis, located north of the gasometers. Vehicular accessibility is minimised and made peripheral. Pedestrian &amp; Cycling axis to the South, between the Gasometer and the Lanbruschini campus to connect the 2 stations Bovisa and Villapizzone.</p> <p><b>Classrooms:</b> 3 buildings</p> <p><b>Underground conference hall</b></p> <p><b>Urban Forest:</b> 240,000 square metres, to become a new public park equipped and usable by 2030 by all citizens.</p> <p><b>2 Student residences:</b> next to Politecnico’s classrooms and laboratories, with around 500 accommodations.</p> <p><b>Food area:</b> to serve the Campus guests, build on a regenerated historic industrial building.</p> <p><b>Start-ups area:</b> 5 buildings, next to Politecnico’s classrooms and laboratories, in line with the highest international standards of connection between the university world and companies. 35,000 square metres dedicated to deep tech innovation and challenges linked to digital and sustainable transitions.</p>

<b>Environmental characteristics</b>	<p><b>Carbon neutral project:</b> energy independence and zero CO2 emissions goals.</p> <p><b>Permeability:</b> Buildings will cover the same area of land already occupied by the ex-factory installations.</p> <p><b>Green areas:</b> the 24-hectares wood that naturally grew on the site will be preserved, enhanced, and open to citizens. It will also help to the soil decontamination efforts. Large trees will be built around new buildings to create the new connective tissue and ground levels will be transparent to have an immersive experience of nature.</p> <p><b>Circular economy:</b> All buildings on the campus will be constructed with predominantly wooden structures. The trees that will be planted on the campus will return the wood mass used in the construction of the buildings within thirty years.</p>
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More information and details about the project can be found [HERE](#) and [HERE](#).

# MILAN – PLANNING RULES

	Instrument	Description	Intervention
PGT	<b>Floor Area Ratio (FAR)</b>	0.35 sq.m /sq.m basic urban index 0.70 sq.m /sq.m in Urban Renewal Areas 1 sq.m /sq.m in highly accessible areas > 1 sq.m /sq.m in special cases	
	<b>Exceeding FAR</b>	Opportunity of achieving and even exceeding the maximum FAR (1 sqm/sqm) through the use (either alternately or together) of: Architectural competitions, building rights, including TDR, affordable housing and public housing quotas. Exceeding the index is only applicable for interventions which include the redevelopment of public space or provide affordable housing for rent.	<b>MoLeCoLa:</b> maximum index being exceeded (up to a maximum limit of 1.8 sq.m/sq.m) because Interchange node, to achieve important public objectives. <b>Ex Macello:</b> At least 50% of the GFA has to be assigned to affordable housing, from which maximum 20% can be for sale and the rest for rent.
	<b>Gross Floor Area (GFA) / Surface Area (SA)</b>	Requirements regarding green areas, floor permeability, affordable housing, and other uses. Determined considering characteristics of regeneration project.	<b>Ex Macello:</b> Obligatory assignment of minimum 30% of the Surface Area (SA) to the Municipality (free of charge), to build in minimum 20% of the SA a permeable green space.
	<b>Urban Functions</b>	There are no restrictions on possible urban functions to be introduced in the area, as per the Implementing Regulations of the in the PdR of the PGT.	<b>Ex Macello:</b> No use restrictions for the area, except for large-scale retailing. 50% must be for affordable housing (mainly for rent). <b>MoLeCoLa:</b> Great Urban Function required, consisting in a new university campus and R&D facilities, student accommodations, improved railway station.
	<b>Provision of Services</b>	Provision for services are required to the extent provided for by the Implementing Regulations.	<b>Ex Macello:</b> nursery school, neighbourhood services (Public Services); IED (Istituto Europeo di Design) headquarter and Science Museum (Public Private Agreements)
	<b>Environmental Sustainability</b>	In terms of environmental sustainability, the PGT requires that interventions must take action in terms of minimising CO2 emissions and increasing soil permeability and ecological restoration, also through the integration of greenery in the buildings (living walls and roofs).	<b>Ex Macello:</b> meets all requirements; adopts an innovative energy infrastructure by EON (Ectogrid); all buildings must be carbon neutral
	<b>Mobility</b>	Private parking surface for new buildings must be equal to 1/3 of total GFA (national Law 122/89). The	<b>Ex Macello;</b> minimizes provisions of both private and public parking space;

		PGT makes underground parking mandatory; 10% must be for bicycles.	develops a pedestrian precinct; provides a shared fleet of electric cars
	<b>Architectural Constraints</b>	Cultural heritage and landscape assets identified by National, Regional, Metropolitan and local measures	<b>Ex Macello and MoLeCola:</b> renovation and reuse of industrial buildings to preserve local identity
	<b>Building regulations of the Municipality of Milan</b>	<b>Distances between buildings</b>	Determining authorised distances from existing buildings (Italian Ministerial Decree no. 1444/68).
	<b>Planning fees</b>	<b>Permits</b>	Permits for new building schemes, the extension of existing buildings and restorative construction work are subject to the payment of primary and secondary Planning fees and contribution on construction costs according to functions.
		<b>Reductions and Exemptions</b>	Reductions and exemptions are described in the Italian Law (Presidential Decree 380/2001, LR 12/2005). It is allowed to carry out works of urbanization in order to deduct the fees, also regarding the redevelopment of surrounding spaces.
	<b>Air Climate Plan (PAC)</b>	<b>Climate protection</b>	Take into account provisions from the plan created by the municipality to address climate change and protect the environment, such as active mobility modes, intermodal and zero-emission mobility, urban forestation, improving soil drainage capacity. Protecting residents from air pollution and give them responsibility in reducing their carbon footprint.
	<b>Surface Rights</b>	<b>Surface Rights</b>	For the Municipality of Milan, the minimum concession price for the Surface Rights is €14,098,000 for a maximum period of 90 years
		<b>Building Rights</b>	. In the event of the use of building rights originating from other sources, an additional “landing” fee of 135.50 €/sq.m. will be applied. In case of purchase of building rights from the City of Milan, the additional amount is already included in the building rights price, which shall be notified thereafter.



# SÃO PAULO – GASOMETER COMPLEX

The Bras area is located in São Paulo’s Central District, and boasts a rich cultural flow, including a variety of symbolic and heritage manifestations such as the Complexo do Gasômetro. The city centre is surrounded by public services and facilities related to art, music, theatre, commercial activities, events, and gastronomy. However, car infrastructure act as urban barriers and are fragmenting the area to the detriment of pedestrian facilities and safety, while also generating large disconnected and empty spaces. Brás features many brownfield areas that form an important reserve of vacant urban land, with a transformative potential to create new residential and mixed uses developments. The area thus represents a great opportunity for the transformation of São Paulo’s Central District.

The redevelopment of the area therefore seeks to fully capture the potential of São Paulo’s City Centre, by integrating culture, economy, and urban regeneration objectives. This innovative perspective sees different elements of the Brás Area (Casa das Retortas, Parque Dom Pedro II, Complex Gasometres) as an integrated intervention to create a new Hub for Creative Economy, with the power to transform the area into a thriving centre of innovation and creativity.



Source: São Paulo ADESAMPA & SMUL

## Characteristics of the site

<b>Size</b>	18,242 square metres of new uses contemplated in the Casa das Retortas
<b>Land ownership</b>	According to the Council for the Defense of Historical, Archaeological, Artistic and Touristic Heritage of the State of São Paulo (CONDEPHAAT - Conselho de Defesa do Patrimônio Histórico, Arqueológico, Artístico e Turístico), the City of São Paulo expropriated the land that comprised the old Gasometer and turned it into the headquarters of COMGAS, then a publicly-operated company and presently, a privately-owned gas provision firm.
<b>Former use</b>	It was built in 1889. The name "Retortas" originated from the place where the English coal was burned. However, in 1972, the building became disabled, as did the end of industrial activities in the Brás region.

<b>Conditions</b>	The building was listed as historical heritage in 2006 by CONDEPHAAT. At that time, the building was in an advanced state of degradation and underwent renovations that included sustainable solutions, such as water reuse, electricity generation using natural gas, effluent collection and selective garbage collection.  Due to its historical and cultural significance, the building boasts a myriad of influences from the English industrial style, reflecting the period's industrial cycle. The State Government initiated the restoration of the complex to reconstruct its architectural qualities and central importance by building the Museum of the History of São Paulo State. However, in 2012, construction was halted due to soil contamination problems resulting from coal activities. Despite this setback, São Paulo City Hall has been working on Retortas projects since 2022 to reactivate the complex and utilize it for its full potential while considering the future and current needs of the Brás region
<b>Location &amp; Connectivity</b>	The Gasometer Complex is located in the neighbourhood of Brás, which is part of the central area of the city, lying between the East Zone and the historical City centre.
<b>Planning Rules</b>	The urban regeneration programmes designed for this part of the city are focused on improving both housing and mobility conditions, ensuring greater integration of the territory, reducing the distance between housing and work, stimulating tourism and leisure markets, and preserving cultural and historical heritage. Currently, the Gasometer Complex is listed by CONDEPHAAT as a heritage recognition site that should be preserved for its most defining features.

## Regeneration project

<b>Objective</b>	To fully capture the potential of the region within the São Paulo City Centre, a new approach has been adopted that integrates culture, economy, and urban regeneration. This innovative perspective sees Retortas as a Hub for Creative Economy, with the power to transform the area into a thriving centre of innovation and creativity.
<b>Proposal</b>	Realization of a science park and innovation centre with areas dedicated to services for students and citizens.
<b>Implementation</b>	2023 – 2026. Partial restauration 2011 - 2017
<b>Planned Interventions</b>	<b>Complex Gasometer:</b> innovation and cultural centre <b>Parque Dom Pedro II:</b> intends to return an area of environmental and leisure interest to the city's population. Infrastructure projects are also part of the city revitalization framework, seeking to increase the sense of security, ensuring fluidity, and promoting art, culture, innovation and sustainable development. <b>Casa das Retortas:</b> Centre to support Creative Economy with library and coworking, administration and panoramic terrace. Centre for innovation of the wooden sector, the gastronomic centre, and the fashion sector, with offices and development spaces. Restaurant. Innovation Lab with business incubator. Factory museum with shops, permanent and temporary exhibitions, coworking, cafes, and more. <b>Infrastructure projects:</b> part of the city revitalization framework, seeking to increase the sense of security, ensuring fluidity, and promoting art, culture, innovation and sustainable development
<b>Environmental characteristics</b>	<b>Green spaces:</b> are a priority in guidelines and parameters of the City's land use and settlement rules. Considering the aforementioned classifications of the territory, issues of transformation, adaptation, and preservation all fit into one or more categories of environmental concern.

# SÃO PAULO – MAIN PLANNING RULES

**Synergies with international guidelines:** São Paulo's City Council has been striving to adhere to and implement the main international advocacy and sustainable development instruments. In particular, all municipal secretariats are guided by the Sustainable Development Goals (SDGs) established by the 2030 Urban Agenda, and participate in the effort to systematize and adapt SDGs to the context of São Paulo. Furthermore, the City's main urban development norms, such as the PDE and LPUOS, are also aligned with the UN New Urban Agenda.

	Zoning 1	Description	Zoning 2
Urban Structuring and Qualification Macro-Zone	<b>Metropolitan Structuring Macro-Area</b>	Division was made into 3 sectors: (1) Railway and Waterfront Sector, (2) Development Axes Sector, and (3) Central Sector.	Bras area located in sector 3. 8 specific objectives were designed for this sector, amongst which the following one stands out for being strongly coherent with the endeavour to regenerate the old Gasometer area:  "II - valorisation of cultural heritage areas with the protection and recovery of buildings and landmarks, encouraging uses and activities compatible with preservation and their insertion in the central area" (art.3, subsection I, section I ).
	<b>Qualifying Area</b>	"[...] areas in which the objective is to maintain existing non-residential uses, encourage productive activities, diversify uses or moderate population consolidation, depending on specific locations part of the areas [...]" (emphasis added).	Bras belongs to the <b>Centrality Zones:</b> "[...] parts of the territory dedicated to the promotion of activities characteristic of central areas or regional subcentres or neighbourhoods, with predominant non-residential uses, medium construction and demographic densities, that maintain commercial activities and existing services while promoting of the improvement of public spaces [...]" (emphasis added).
Preservation Territories	<b>ZEPEC</b>	<p>Preservation territories are "[...] areas in which the objective is to preserve consolidated neighbourhoods of low and medium densities, specific urban complexes and territories promoting sustainable economic activities combined with environmental preservation, in addition to cultural preservation [...]" (emphasis added).</p> <p>ZEPEC (Zona Especial de Preservação Cultural (Special Zone of Cultural Preservation) are, according to the LPUOS law (Art. 21), "parts of the territory intended for the preservation, enhancement and safeguarding of historical, artistic, architectural,</p>	<p>ZEPECs are subdivided into four groups:</p> <ol style="list-style-type: none"> <li>1. Representative Real Estate Assets (BIR - Bens Imóveis Representativos);</li> <li>2. Special Urbanization Areas (AUE - Áreas de Urbanização Especial);</li> <li>3. Landscape Protection Areas (APPa - Áreas de Proteção Paisagística); and</li> <li>4. Cultural Protection Area (APC - Áreas de Proteção Cultural).</li> </ol> <p>The Gasometer area fits into the BIR classification, defined as: "Built elements, buildings and their respective areas or lots, with historical, architectural, landscape, artistic, archaeological and/or cultural value, including</p>

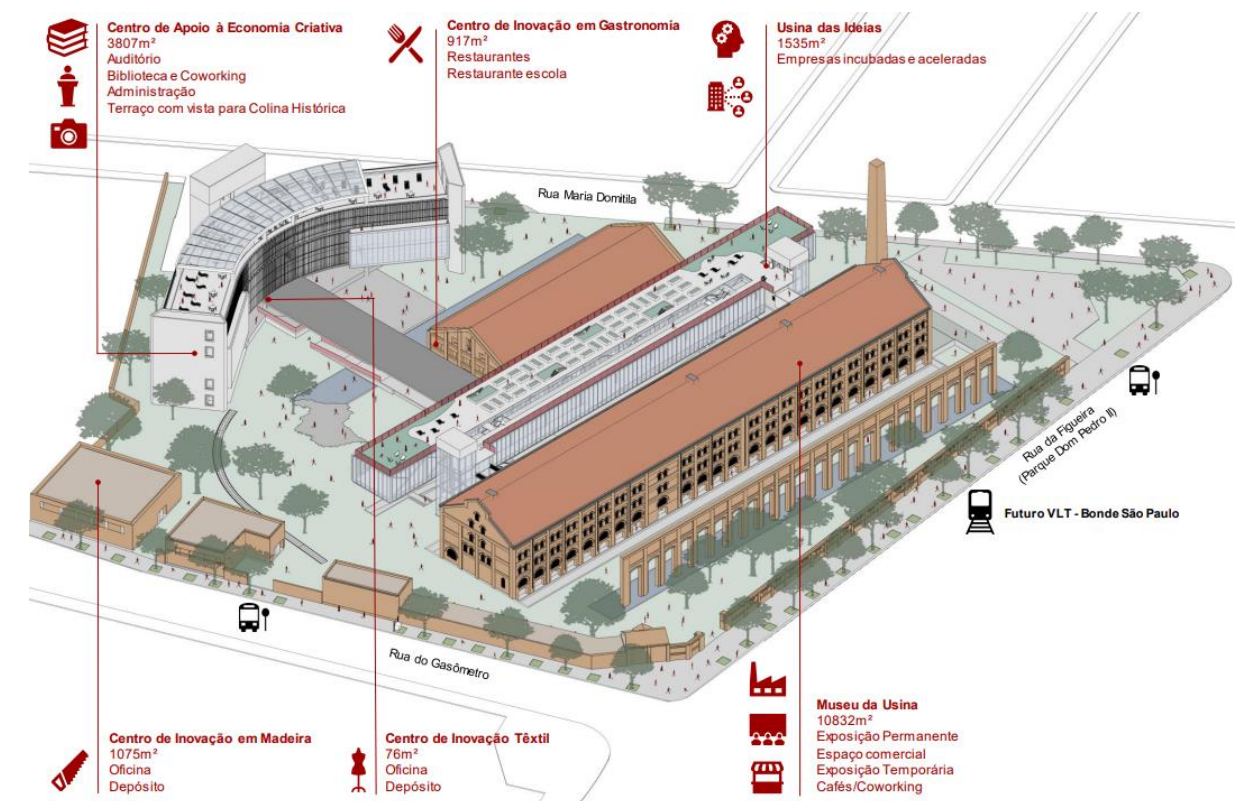
archaeological and landscape value assets, those with referential value for the community." belonging to the Municipality's cultural heritage, and can include built elements, buildings and their respective areas, architectural complexes, urban or rural sites, archaeological sites, indigenous areas, public spaces, religious temples, landscape elements, urban complexes, spaces and structures that support intangible heritage or uses with socially attributed value" (emphasis added).

## Classification Instruments

The Master Plan requires these areas to be identified and classified according to the following instruments:

- Heritage Recognition Listing,
- Inventory of Cultural Heritage,
- Registration of Cultural Protection Areas and Territories of Interest for Culture and Landscape,
- Registration of Intangible Heritage,
- Registration of Cultural Landscape, and
- Survey and Archaeological Register of the Municipality - LECAM (Levantamento Cadastral Arqueológico do Município).

Based on the fourth paragraph of Article 64, the Master Plan allows for the installation of activities classified as nR3 (special non-residential use) or of nuisance to residential use (as described in the land use law).



Source: São Paulo ADESAMPA & SMUL

7.

## COMPARATIVE STUDY

MAIN SIMILARITIES & DIFFERENCES –  
GUIDELINES FOR URBAN REGENERATION



# MAIN SIMILARITIES



- 1. Urban Context:** Both cities are important centres in their respective countries, regarding economy, culture, education, and innovation.
- 2. Urban development Plan:** Both cities have developed integral instruments with a detailed strategy to orientate urban growth and with effective instruments to reach their goals. Both plans take advantage of green spaces to constraint urban growth, improve quality of life, and increase sustainability and resilience to climate change. They have 2030 as common horizon for development, and defined zoning patterns and land classification that seeks to rebalance growth, promote densification and accessibility. Both cities have instruments regarding their floor area ratios that oblige big developments to provide social housing and urban services.
- 3. Urban Resilience:** Both cities wish to develop networks of green spaces around the city, with strong emphasis on the increase of soil permeability and improved water management. They seek to increase trees and nature in their urban space, while adopting measures to mitigate climate change effects, such as heat waves.
- 4. Public Space and Urban Services:** Both cities seek to promote mixed-uses development and lively public spaces with commercial use, services and facilities located on the ground level, encouraging the development of sustainable and active mobility. They have special mechanisms to allow higher floor area ratios in specific zones for dense development, that have good public transportation and service connectivity.
- 5. Urban regeneration:** Regeneration in both cities is focused around the redevelopment of vacant or underused spaces, including brownfield sites, to promote the densification of the city around important service and transportation hubs and strategic axes. They wish to concentrate mixed development in these opportunity areas to create a polycentric city model.
- 6. Case Studies:** Case studies feature brownfield sites that are well connected to the city centre, on strategic axes of development, that feature new economic and social opportunities. They seek to develop learning and innovation hubs, with special emphasis on inclusion, the creation of active and green public spaces, and the connection of new developments with the surrounding neighbourhood. They promote a new sense of liveliness and integrate environmental, economic, and social sustainability approached in their master plan. Areas of development have a significant size and therefore have the potential of becoming new urban centralities. They will also reduce climate impacts, including heat islands phenomena, through Nature-Based Solutions.

# MAIN DIFFERENCES



- 1. Urban Context:** The cities have a significantly different size and shape.
- 2. Urban development Plan:** São Paulo has a stronger emphasis on decreasing social inequalities than Milan, that adopts a focus of social mix and intergenerational inclusion. Milan has strict rules for landscape control, with a landscape commission and special provision for heritage sites. São Paulo has strict rules for environmental preservation. São Paulo has a special fund fed by payments from big developments, that are redistributed to actions for the citizenship and of social value.
- 3. Urban Resilience:** São Paulo developed a detailed classification of green and natural spaces that seeks to protect the environment and adapt levels and type of urbanization to specific categories. Milan will develop a green belt and promotes criteria of sustainability in buildings, to reach carbon neutrality in new developments.
- 4. Public Space and Urban Services:** Milan views the development of public spaces as articulating urban growth through nodes, functioning as new piazzas at the centre of urban life and enabling the 15-minutes city model. On the other hand, São Paulo seeks to increase liveliness of ground floors by putting a particular emphasis on sustainable mobility, and planning around the necessity for new services or the existence and intensification of existing ones, to balance present and future needs together with urban development.
- 5. Urban regeneration:** São Paulo developed strict rules to limit the presence of vacant or under-used spaces with specific incentives and deterring mechanisms. Milan bets on innovation and technology to increase the attractiveness of strategic neighbourhoods connecting centres and peripheries.
- 6. Case Studies:** Milan's case study are in the process of development while São Paulo's are still in the planning phase. Milan developed a strict environmental framework and a set of rules to redevelop the sites in the framework of the Reinventing Cities contest, and has a system of land leasing to private developers or use. São Paulo's case studies follow different land categorisation for the site, that define authorised developments of the area. They did not involve architectural competitions but are interested in this possibility.

# URBAN REGENERATION GUIDELINES

## Experiences from São Paulo & Milan

How to transform underused spaces into vibrant nodes and promote a more lively and sustainable city?

As a result of São Paulo and Milan's cooperation on urban regeneration, developed in the framework of the IURC Latin America programme, both cities elaborated a comparative study of instruments and methodologies linked to the creation of more sustainable, inclusive, and lively neighbourhoods through the transformation of vacant or under-used spaces. A final workshop allowed them to discuss common challenges and lessons learned, which led to the elaboration of a guideline for the realization of regeneration plans, which can be applied to other cities and also will be implemented in the regeneration of the Bras area in São Paulo.

1. Zoning & Incentives
2. Territorial Integration
3. Sustainability Perspective
4. Architectural Competitions
5. Accessibility Criteria

6. Intersectoral Synergies
7. Participatory Processes
8. Heritage Guidelines
9. Temporary Uses & Academia

**10\* International frameworks:** As a transversal guideline, to integrate existing municipal planning instruments into international frameworks, such as the New Urban Agenda, Sustainable Development Goals, of the EU Green Deal.



## 1 Zoning & incentives



- **Zoning strategy to identify opportunity areas:** well-connected nodes, and vacant or under-used spaces with potential for regeneration.
- Integration of new projects into existing **urban guidelines** and their potential for transformation
- **Requirements and incentives** for the creation of vibrant & livable neighbourhoods.

## 2 Territorial integration



- **Accounting for wider urban dynamics:** territorial integration of surrounding neighbourhoods.
- **Integration between micro and urban scale:** connection of specific regeneration projects with other urban dynamics and surrounding areas.
- **Taking advantage of new regeneration projects** to create integrated strategies for transformation of the whole neighbourhood.

## 3 Sustainability perspective



- **Sustainability strategy** in urban regeneration guidelines and Master Plans for land-use allocation and green areas.
- **Considering current & potential scenarios:** park creation, tree planting, and vegetation coverage.
- **Incentives & mandatory environmental requirements (quotas):** maintain green spaces and implement sustainability criteria.



## 4 Architectural competitions



- **Incentives to developers to create architectural competitions** for master planning and regeneration, in close collaboration with the municipality.
- **Municipality establishes rules and guidelines** for the development according to local zoning and regulations.
- **The winner must include participatory process** to adapt the plan to local needs and citizens' feedback.

## 5 Accessibility criteria



- **Regeneration strategies around transportation nodes** to increase accessibility of the redeveloped area and its integration into the urban fabric.
- **15-minutes city models** to increase access to basic services and infrastructure through biking and walking.
- **Job creation** near residential areas.

## 6 Intersectoral synergies



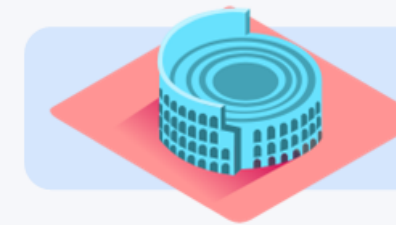
- **Identify key public and private synergies** within and between sectors.
- **Local Economic Development to achieve social outcomes:** relate private advantage to public benefit, by creating a positive feedback loop to generate jobs, taxes, profit, and benefits for the neighbourhood.
- **Promote tax exemption or incentives** to the private sector for social housing and economic development strategies leading to job creation (public benefits in exchange of private service).

## 7 Participatory processes



- **Participatory methodologies for regeneration processes:** work with local communities and not just for them.
- **Ensuring that transformation processes will benefit** to citizens and is accepted.
- **Innovative participatory processes** to involve local communities at each step of a project's development (planning, implementation, maintenance).
- **Participatory processes as an opportunity** rather than a challenging requirement.

## 8 Heritage guidelines



- **Heritage preservation as opportunity** to use urban space in a smart way.
- **Heritage as middle ground between environment and regeneration priorities:** use cultural development with other urban priorities and integrate the regeneration of heritage sites in a sustainable way.
- **Transforming buildings and assets is more sustainable** than demolition or new constructions: great environmental importance.

## 9 Temporary uses & Academia



- **Temporary uses to bring new activities to regenerated area** as regeneration and urban transformation can take time and large amounts of investments.
- **Inclusion of local communities** in interventions developed: bring liveliness to the neighbourhood.
- **Academia creates knowledge & capacities** by facilitating temporary activities & building strategic partnerships around environmental sustainability and economic development.

## Examples from Milan & São Paulo' application of Guidelines

### Milan

- Zoning & incentives:** In identified areas with potential for pedestrianisation and developments with active facades, small shops (< 250 sqm) on the ground floor do not require parking provision and may not be considered in the total amount of Gross Floor Area developed: important incentive for private developers that is integrated in municipal zoning ordinances.
- Territorial integration:** Territorial integration is defined in the Piani di Area (Neighbourhood Plans) and PGT: to integrate neighbourhood dynamics by reinforcing local services, improving public spaces, creating active frontages and active mobility opportunities.
- Sustainability perspective:** Clear requirements for soil permeability, vegetation coverage, and carbon neutrality: Index for green surfaces that can be integrated depending on their efficiency. For the construction of new buildings climate neutrality objectives are mandatory while the reconditioning of old ones needs a 15% reduction in CO<sub>2</sub> emissions, through energy efficiency and sustainable materials. In larger development plans, 30% min. of soil has to be permeable.
- Architectural competitions:** For the redevelopment of the railway freight yards, private developers were obliged to promote an international competition to create a masterplan from the Strategic Vision established by the Municipality. Reinventing cities is another example of international architectural competition to trigger the renewal of important sites identified by PGT as urban regeneration areas.
- Accessibility criteria:** Adopted the 15 minutes city model. Provides incentives for mixed uses developments, private services of public interest and economic activities.
- Intersectoral synergies:** In defined areas, PPP are developed to consider local economic activities (shops, craftsmanship) as services of social interest and therefore give them tax exemptions or discounts. In return, local entrepreneurs must provide benefits for the neighbourhood, such as employing local staff or opening their premises to host helpful and inclusive activities (i.e. workshops, after-school, courses, etc.).
- Participatory processes:** Participatory processes are defined through mandatory instruments; however, these are often bureaucratic procedures that lack organic considerations.
- Heritage guidelines:** There are rules for morphological control to ensure that new developments are in line with cultural elements from the city and its urban landscape. There are also important requirements to maintain in specific heritage sites.
- Temporary uses & Academia:** Working closely with universities for both the Ex Macello and Bovisa regeneration. Allows to attract young people, develop intergenerational dynamics, and new skills. Temporary uses are developed in the Ex Macello with cultural and artistic activities.

### São Paulo

- Zoning & incentives:** New law focused on the downtown area (Bras): promotes regeneration through Public-Private Partnerships (PPP) based on tax incentives for new developments that are coherent with the zoning established in the Master Plan.
- Territorial integration:** Integral Densification strategy: prioritization of sustainable mobility over car with active mobility and quality public space in the Gasometer regeneration plan.
- Sustainability perspective:** The Master Plan sets criteria of both environmental and cultural preservation for regeneration projects and interventions. The environmental quota is a mandatory formal instrument for new projects and interventions, depending on zoning: minimum 15% of soil has to be permeable in the downtown area. If there are high levels of built areas, compensatory infrastructure should be built (Nature-Based Solutions, reservoirs for storm water management, sewage and drains).
- Architectural competitions:** Important projects are not looking for the best architects but the most profitable. The competition system is however promoted for the construction of parks: take different plans and ideas from people using the area and try to integrate them together. It is not a contest per se but ends with a "win-win" situation, that could be improved through a set of incentives, and applied to the regeneration of the Gasometer area.
- Accessibility criteria:** Historical challenge in the city to think about services, economic activities, housing, and transportation in an integral manner.
- Intersectoral synergies:** Beginning to change the relationship with the private sector. The Bras development will focus on creation new economic activities and capacity building opportunities by becoming a specialized hub. The city is currently buying housings for social purpose. It is difficult to have an instrument allowing to measure benefits of the policy, but the social outcomes exist even if not quantifiable. It can be an issue common to many public policies.
- Participatory processes:** Participatory processes are defined through mandatory instruments; however, these are very bureaucratic procedures that lack organic considerations.
- Heritage guidelines:** The city defined criteria for heritage and cultural preservation, that are linked to environmental preservation. Incentives allow to ensure that owner provide adequate maintenance and use to heritage buildings.
- Temporary uses & Academia:** Challenges to involve de university. In the Bras regeneration, there is a demand to attract specialized university faculties to support the textile, gastronomy, and wood sectors in their new hub for development and accompany them in their environmental transition.

#### With the collaboration from

**Francesco Vescovi** (Urban Planning Officer  
– Comune di Milano)

**Rodrigo Ravena** (Secretary – Environment  
and Green Affairs Department, Municipality  
of São Paulo)

**Pedro Martin Fernandes** (Advisor – City  
Hall São Paulo)

**Rodolfo Maiche** (Public Policy and  
Government Management Analyst -  
Secretary of Environment and Green  
Affairs, Municipality of São Paulo)

**Aurélie Knecht** (Project Officer & Brazil  
Country Manager – IURC Latin America)

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São Paulo: [HERE](#)

### 2. Urban Development Plan: Instruments, Tools & Vision

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São Paulo: [HERE](#)

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## Authors:

**Francesco Vescovi** (Urban Planning Officer – Comune di Milano)

**Rodrigo Ravena** (Secretary – Environment and Green Affairs Department, Municipality of São Paulo)

**Pedro Martin Fernandes** (Advisor – City Hall São Paulo)

**Rodolfo Maiche** (Public Policy and Government Management Analyst - Secretary of Environment and Green Affairs, Municipality of São Paulo)

**Pedro Sanches** (International Affairs Coordinator of São Paulo Development Agency)

**Aurélie Knecht** (Project Officer & Brazil Country Manager – IURC Latin America)

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**Massimo Tadi** (Associate Professor – Politecnico di Milano)

**Gianfranco Commodaro** (International Relations and Development Cooperation, Foreign Affairs Department – Comune di Milano)