Topics

• The territorial context: the City of Milan;
• The challenges: Facing the environmental issues through planning policies;
• The actions:
  • Territorial Governmental Plan (PGT)
  • Forestami
  • Reinventing Cities Competition
  • Clever Cities
  • Street De-paving

"We are raising a generation of young people suffering from nature deficit disorder."

The third industrial revolution, Jeremy Rifkin
### Milan 2021

#### Numbers

**Inhabitants**
- 1,392,502 residents in 2020
- 1,422,630 expected population in 2025 (+30,128)
- 1,458,170 expected population in 2030 (+65,668)

**Existing built fabric**
- 133,548,123 sqm of existing built fabric
- 3,794,568 sqm foreseen gross floor area in the existing built fabric

**Social housing**
- 49,114 sqm of existing built fabric
- 454,970 sqm already programmed by a transitional rule

**Green areas**
- 25,653,670 sqm existing green areas (18.54 smq/inh.)
- 4,891,864 sqm new green areas (+1.8 smq/inh.)
- 20 new parks (> 10,000 sqm)

**Agriculture**
- 3,340,707 sqm of area of farming land

**Land consumption**
- 4% of land consumption (from 74% to 70%)
Milan in the next years
The challenges

The City of Milan in the last years has faced up to environmental issues through multiple planning policies, by increasing greening strategies and, by around 2050, aims to be a carbon-free and zero waste city. Three are the main aspects of the project for the future city:

- Sustainability
- Green
- Quality

Greening it will be a qualifying aspect, it is not just an environmental challenge but a new idea of living: Milan will be a far better place to live and Nature will be at the heart of life.
Milan PGT – Milan 2030
Objectives

Milan 2030 is a city spatial planning framework to ensure that Milan’s growth is Good Growth, each of the policy areas in this Plan is informed by the five objectives:

• A connected, metropolitan and global city;
• An attractive and inclusive city of opportunity;
• A green, livable and resilient city;
• One city, 88 neighborhoods;
• A city that regenerates (making the best use of land).
Milan PGT – Milan 2030
A green, livable and resilient city

Milan 2030 wants to have a green footprint. To this end, the PGT reduces the previously planned transformations (-1.7 million square meters), dropping land consumption by 4%.

With the reopening of Navigli waterways and important interventions on Lambro and Seveso rivers, water regains a central role.

The green belt becomes the urban threshold for the establishment of the Metropolitan Park that links the seven railway yards redevelopment projects and twenty new city parks.

New environmental standards help to reduce greenhouse gases and carbon emissions in the atmosphere and help to mitigate climate change.
Milan PGT – Milan 2030
A green, livable and resilient city

-4% Reduction of the soil consumption index compared to the last PGT (from 74 to 70%)

20 new parks (> 10,000 sqm)

3,250,000 sqm new agricultural areas planned
Milan PGT – Milan 2030
Sustainable regenerations rules

Improving air quality, urban microclimate as well as water drainage conditions requires an articulated series of strategies including that aimed at increasing urban forestation.

The new city plan supports the re-naturalization and planting of the soil even in private parking areas. The new shares can be found within public and private open spaces and also through integrated solutions in buildings.
Milan PGT – Milan 2030
Sustainable regenerations rules

Given the impact of the construction sector in the context of CO2 emissions, the adoption of stringent performance parameters on existing buildings and on those to be built in the future is of considerable importance, through the request for high emission and climatic performance.

Both in new constructions and in interventions on existing buildings, high-performance rules for:
- minimize energy consumption;
- re-naturalize and maximize the permeable surface of the city;
- reduce CO2 emissions.
Milan PGT – Milan 2030
Sustainable regenerations rules

The new city plan increase in environmental performance standards required for existing and newly constructed buildings, through the Article 10 of the Implementation Rules.

The new standards demand:

• Higher energy efficiency;
• Re-naturalization and de-pavement (including green roofs);
• Certification of CO2 reduction.
Milan PGT – Milan 2030
Sustainable regenerations rules

The minimization of CO2 emissions must be guaranteed in building interventions through:
• the integration of high energy performance solutions;
• Re-naturalization interventions;
• the use of technologies for the reduction of water consumption and materials with recycled content;
• surface finishes with high solar reflectance.

In order to improve environmental quality and the ability to adapt to climate change, the new city Plan introduces compliance with a climate impact reduction index that defines the relationship between green surfaces, understood as a set of permeable and semi-permeable open spaces, roofs and walls, and the surface affected by the building intervention.
Forestami
What is it?

Forestami, promoted by Metropolitan City of Milan, Municipality of Milan, Parco Nord Milano, Parco Agricolo Sud Milano, Fondazione di Comunità Milano, Fondazione Comunitaria Milano Nord, Fondazione Ticino Olona in collaboration with Politecnico di Milano, Fondazione Falk, Sistemi Urbani–RFI, will collect resources to be allocated for the planting of 3 million trees by 2030 and provides for:

- Increase urban green area
- Increase the tree canopy cover by 5%
- Reduce atmospheric pollution
- Reduce energy consumption, enhancing properties
- Connect green areas
- Encourage dialogue between public and private
Forestami
How it works?

• increasing green and permeable areas;
• increasing the share of green roofs by 90%;
• by reclaiming abandoned and polluted soils through phytoremediation;
• promoting the transformation of school, university and hospital courtyards, private courtyards and gardens into green oases;
• promoting the creation of urban gardens;
• creating an orbital forest in the metropolitan city;
• reinforcing the green in public parks
Reinventing Cities
What is it?

The Reinventing Cities competition is a call for urban projects to drive carbon-neutral and resilient urban regeneration in cities across the globe and to implement the most innovative ideas to transform underutilized sites into beacons of sustainability and resiliency.

Reinventing cities’ winning projects serve as models for new ways of building and living, demonstrating how the alliance between the public and private sector can shape the future, delivering healthier, greener and economically viable urban development.
Reinventing Cities

Teams are called to find solutions to the **10 climate challenges**, through their proposal for the redevelopment of sites:

1. Energy efficiency and low-emission energy (mandatory)
2. Life cycle assessment and sustainable management of building materials (mandatory)
3. Low-emission mobility
4. Resilience and climate adaptation
5. Ecological land services and green works
6. Sustainable management of water resources
7. Sustainable waste management
8. Biodiversity, urban reforestation and agriculture
9. Inclusive actions, social benefit and community commitment
10. Architecture and innovative urban design
Reinventing Cities
First edition – 4 sites

- **Viale Doria** - architectural and functional innovations linked to energy saving and the reduction of CO2 emissions.
- **Via Serio** - Increase the dynamics of regeneration already underway with reference to education, research, culture and innovation.
- **Scuderie de Montel** - Restoration of existing buildings, aimed at recovering the historical memory of the site.
- **Scalo Greco-Breda** - social housing.
Reinventing Cities
First edition - winners

Technical solutions:

• Water-water heat pump that allows to exploit hydrothermal energy;
• Photovoltaic panels;
• Breathing wall for the realization of the walls;
• Use of natural and recycled materials in construction;
• Green roofs;
• Detection control unit for the main pollutants;
• Innovative technological system that allows the building envelope to adapt to sun exposure
• Collection and reuse of rainwater
Reinventing Cities
Second edition – 7 sites

- **Nodo Bovisa** - Regenerate the district, setting up mixed urban functions, consistent with context; upgrading the station and the public areas to improve accessibility; boosting up interchange services;

- **Crescenzago** - Social housing for rent at accessible prices, experimenting with new models and residential services to generate social mix, integrating green areas and minimising CO2 emissions;

- **Loreto** - Developing of Piazzale Loreto as a “bridge” connecting Corso Buenos Aires, Viale Monza and Via Padova through the reorganization of the mobility aiming at high quality public spaces;
Reinventing Cities
Second edition – 7 sites

• **Scalo Lambrate** - Social housing for sale and rent, including student accommodation. Public spaces, green areas and related services;

• **Ex-Macello** - Regenerating a degraded area by maximising urban and environmental quality, and social and operational mix including social housing, in synergy with the context;

• **Palazzine Liberty** - Architectural and functional recovery including activities that promote also public use and the establishment of services of public or general interest, in relation to context;

• **Monti Sabini** - Complete the ongoing urban and environmental restructuring process, establishing new functions (free and social) and services and arranging open spaces.
Reinventing Cities
Second edition - winners

- Closed cycle hydroponic cultivation;
- Horizontal/vertical green;
- Botanical purifier that uses plants to purify indoor environments through a process that forces the air to flow in contact with the roots and leaves of the plants;
- Native plants that have the ability to absorb pollution;
- Rain garden
De-paving
De-paving viale Suzzani

Pavement has contributed to numerous economic and environmental problems and also increases the summertime temperatures in cities.

The removal of pavement allows for the revegetation of land with trees and plants.

The pilot project of Viale Suzzani, carried out in November 2019, is spread over an area of 990sqm and was financed with the resources allocated to the maintenance of the green and road network.
CLEVER cities

CLEVER Cities is a project co-funded by the CE (Horizon2020) that experiments Nature–based Solutions (NBS) and green infrastructure in three main cities (Milan, London and Hamburg). We are building NBS with citizens in neighborhoods, buildings and infrastructures.

Main goals:
• **REALIZE**, through a path of co-creation, experimental, innovative and replicable naturalistic solutions;
• **MONITOR** the social effects and benefits perceived by citizens through a participatory process on accessible digital platform;
• **PROMOTE** NBS, replicating the solutions tested throughout the city;
The objectives of the three piloting labs in Milan are:

- **CAL1 - Let's re-green Milan, green roofs and walls**
  Promotion of a campaign, aimed at spreading Green Roofs/facades and supporting experimental projects;

- **CAL 2 - A new Park for Giambellino 129**
  Co-design and management of public green areas (Giambellino 129) with innovative methods for the dissemination of NBS

- **CAL 3 - The "Tibaldi" train stop**
  Experimental integration of greenery in the railway infrastructure of the southern area of Milan
THANK YOU FOR YOUR ATTENTION