

# 22 @ Innovation District, Barcelona

PMU-9 AND PMU-10



PMU-9 AND PMU-10 redevelopment areas are located in the 22@ innovation district. This district was approved in 1999 for the promotion and installation of ICT economic activities in the traditionally industrial neighborhood of Poblenou. The development proposal was completed with a reduced percentage of social housing.

It is a district area with scattered housing in the middle of industrial areas. It is in one of the most economically dynamic areas of the metropolitan area of Barcelona.

After 20 years, most of the economic development objectives of the area have been achieved, but some issues remain. These are being addressed through the new planning framework approved in September 2020. This framework seeks to rebalance the neighborhood from an urban, social, economic and environmental point of view, achieving an inclusive and sustainable neighborhood with mixed uses.

For this, the percentage of buildable area dedicated to economic activity and housing

(which must be mainly affordable) have been modified. Alongside this, mandatory sustainability criteria have been established for buildings and public spaces, and the green corridors program, that structures the neighborhood, is introduced in accordance with the general scheme of green corridors for the entire City.

With this competition, the City expects to receive redevelopment projects that could serve as a model for a low-carbon, sustainable and inclusive city and that will provide new fresh ideas and solutions to help the City face the post-pandemic environmental, housing, health, and economic crisis.

Taking PMU-9 and PMU-10 redevelopment areas as project area, it is expected that the contestants will make a development proposal for a mixed, compact, sustainable, resilient and economically thriving neighbourhood that can serve as a model for the entire 22@ district and beyond.



## Approx. site area (PMU-9 and PMU-10):

8 ha

## Demographics:

PMU-9 and PMU-10 are industrial areas without inhabitants. They are surrounded by some residential and ICT economic activities in the wider 22@ District. Densities analysis of 22@ District can be found [here](#).

## Priority areas & main City expectations:

- Increase in affordable housing
- Green Corridors
- Improve sustainable outcomes for buildings, streets and public spaces
- Rebalancing to complement the interests of different social, neighborhood and economic agents.
- Proactive and ambitious climate action

## Presentation of the site

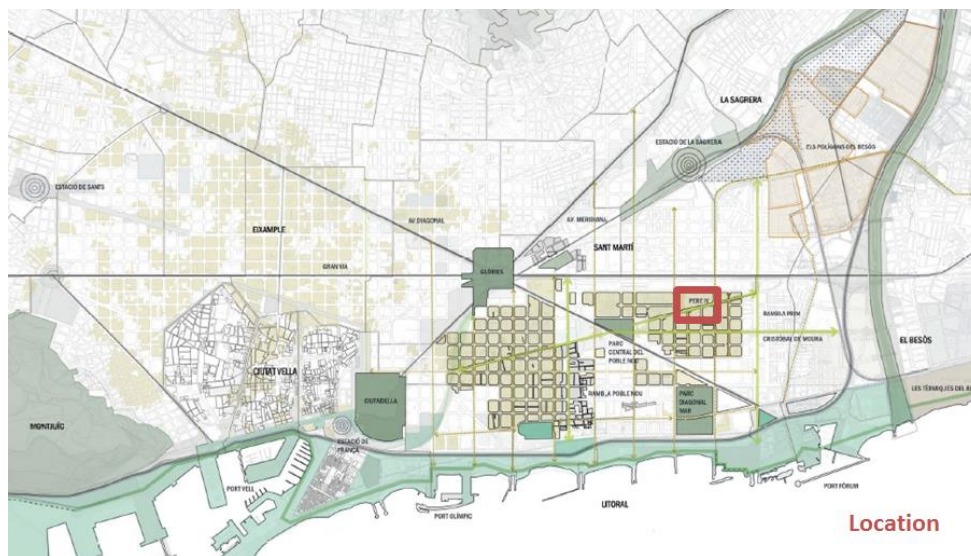


Figure 1 Location of the site in Barcelona

Poble Nou District is a territory of Barcelona that has been considerably transformed over the last 35 years. Historically, the district was a heavily industrial area of the city. The construction of the Olympic Village and the whole of the seafont; the opening of the Diagonal Avenue; the remodeling of the Plaça de les Glòries and the transformation of the industrial fabric, largely through the 22@ Innovation District Plan; have changed and are changing its physical and socioeconomic characteristics.

The 22@ Plan established guidelines for the transformation of 200 hectares of industrial land. This emblematic project has delivered many positive aspects such as - the positioning of Barcelona in terms of innovation and attracting companies; obtaining new land for facilities and green areas; and the construction of new public housing. It has also led to the redevelopment of spaces and streets.

On the other hand, the Plan has not been enough to rectify shortcomings that have occurred in Poble Nou in relation to the urban model and the daily life of the neighborhood, such as the closure of small businesses and workshops and the proliferation of large plots of vacant land for long periods of

time - generating situations of isolation and exclusion. Alongside this, hotel use has an excessive presence that is unbalanced in relation to other uses.

The tensions between the different interests present in this territory, as well as the diversity in the state of development of 22@, motivated the Barcelona City Council to initiate a reflection shared by all the stakeholders involved. Various workshops and processes of participation and work have identified the need for a shared roadmap – the new 22@ Plan - that can guide the future transformation of Poblenou, rebalancing the interests of different social, neighborhood and economic agents.

The city faces three major challenges: the economic and housing crisis and climate emergency. The main objective of the new 22@ Plan is the transformation of land that was eminently industrial to a land of mixed uses with housing, economic activity, facilities and green spaces for the 21st century. In doing so it seeks to address the three great challenges: enhancing sustainable economic activity, increasing the presence of housing in the area and coping with the climate emergency.

In this sense, the PMU-9 and PMU-10 redevelopment areas constitute one of the largest areas of opportunity in 22@ District. Their size and position should allow the development of a set of proposals that tackles the aforementioned challenges.

Although the project area for the 'Reinventing Cities' contest is the redevelopment areas PMU-9 and PMU-10, you can also visit [this link](#) which offers valuable information about the whole of 22@District :

## City climate priorities and specific environmental issues to address

In 2018, Barcelona released a robust, integrated and ambitious Climate Plan, with two main commitments and targets for 2030 :

- reducing the City's levels of CO2 equivalent emissions by 40% per capita compared to those for 2005.
- Increasing the urban green space by 1.6 km<sup>2</sup>, in other words, 1 m<sup>2</sup> for each current resident.

The City of Barcelona expects the student teams will develop on the site projects that strive for zero carbon in operation (mostly from energy, mobility and waste), that reduces at the maximum embodied carbon from construction, and that can inspire sustainable lifestyles for the future residents and users for the site.

While developing their project, the participating teams are invited to consult the following City documents:

- Climate Plan. See [HERE](#) online or [HERE](#) the pdf document.
  - Climate Emergency: [HERE](#) online and [HERE](#) the pdf document.
- In addition to GHG emission reduction targets, the teams should address the following main environmental challenges:- effects related to climate change, such as heat waves and torrid nights, heavy rainfalls, drought, rising sea levels, salinization and contamination of aquifers, loss of biodiversity and food and energy security effects related to urban mobility, such as pollution

Barcelona City Council has historically worked on different sectoral plans (energy plans, rehabilitation plans, mobility plans, etc.) and more specific plans on the climate crisis. The latter includes the Climate Plan, approved by Barcelona City Council in 2017, which established 240 measures for mitigation, adaptation and resilience, climate justice and promotion of citizen action.

One of the main goals of the Climate Plan was to achieve a 45% reduction in greenhouse gas (GHG) emissions by 2030 (compared to 2005) and to achieve carbon neutrality by 2050. But given the need to accelerate actions so as not to exceed the critical increase in temperature established in the Paris Agreement (+ 1.5 ° C of the global average temperature of the Earth compared to the pre-industrial period),

Barcelona City Council declared a climate emergency in January this year. The Declaration of Climate Emergency was a measure that many other cities around the world also carried out during 2019 and 2020.

The Barcelona Declaration of Climate Emergency (DEC) focuses on seven major model changes and two adaptations. In addition, it increases the ambition of reduction with respect to the Climate Plan, establishing a new goal of reducing greenhouse gas emissions by 50% compared to the values of 1992 (-1,950,000 tons of GHG) and maintaining the milestone to become a carbon-neutral city by 2050.

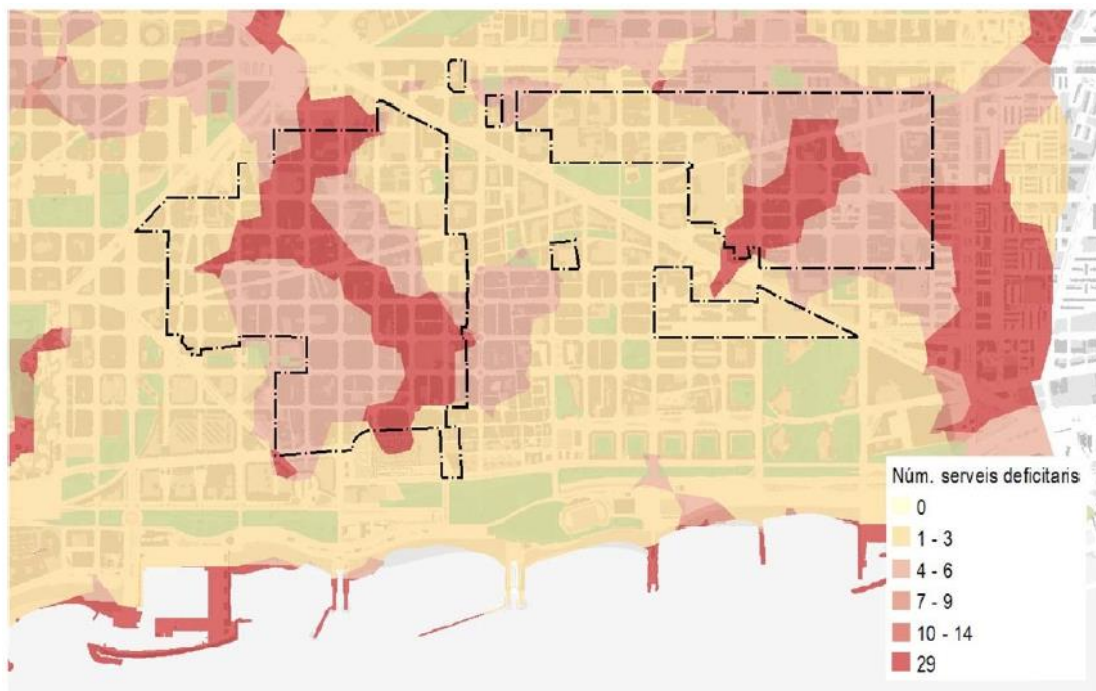
Barcelona is determined to act now to prevent the impacts on the city from being more relevant and costly in the future. The 7 model changes proposed by the DEC are:

- Change of urban model: where the main aim is to increase the presence and quality of urban greenery, transform public space to improve its environmental and health conditions, and prevent the loss of biodiversity.
- Change of mobility and infrastructures: that derives in more and better spaces for pedestrians. Promote active mobility, which does not contribute to GHG emissions
- Change in the energy model: with the ultimate goal of becoming a city where self-generation and self-consumption are widespread, create a fair, democratic and renewable energy model that allows us to be renewable and carbon neutral in 2050.
- Change in the economic model: the aim is to achieve a city where economic and productive activity is facilitated by promoting a circular and digital economy model, with a fairer, more social, more environmental economy that leaves no one behind.
- Change in the consumption patterns and waste management system: the DEC wants to move towards a city that makes critical and responsible consumption and tends towards a more social and supportive economy, with a circular model where waste has no place.
- Change of food production, distribution and consumption system: The main objective is to move towards a city better integrated into the territory and that enhances the agroecological value of its environment, with less external dependence on food and a population more aware of the issue.
- Change of cultural and educational model: It is intended that people, organizations, institutions and companies assume their own responsibility and take the responsibility of minimizing the impact and reducing the ecological footprint.

Due to the climate crisis, an increase in temperatures is expected with an increase in tropical nights (temperatures not below 20 degrees at night) and torrid (temperatures not below 25 degrees) and the lack of water resources typical of the Mediterranean areas will worsen.

To face these challenges in the MPGM, criteria have been incorporated to make urban green more efficient in the face of the climate crisis:

- Increase urban greenery. As established in the Climate Plan, the city has promised to increase by 1 m<sup>2</sup> of green space per inhabitant
- Create urban parks of a certain size together with other smaller spaces that complement and reconnect them.
- Implementation of SUDS to reduce runoff water and to recharge the aquifer
- Plan green spaces with the aim of establishing a connected and functional green infrastructure system
- Diversify species according to street orientation
- Incorporate in the regulations minimum parameters to guarantee a developed vegetation in different levels (strata) to enhance resilience and biodiversity



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Figure 2 Map indicating a lack of green infrastructure

It is also possible that due to its industrial past the area may include contaminated soils, which should be taken into account when proposing methodologies for the treatment of these soils in line with the redevelopment strategies of brownfield sites.

The proposal must develop a mixed-use neighborhood that accommodates activity and housing, offering good environmental quality and a good balance between uses. It should also include facilities both for the inhabitants and also for those of the surrounding neighborhoods. This will help reduce the need to travel and thus reduce emissions of CO<sub>2</sub>, in line with the "fifteen minute city" concept.

The buildings must also include the implementation of roofs with a minimum of green area (50%), facades and green walls and systems for the production of renewable energy (such as photovoltaic

panels, etc.). These solutions can be combined at different levels, so that the energy generation systems shade the roofs, allowing a decrease in temperature and a more continuous and pleasant use of them in summer.

### **Other expectations for the site's redevelopment**

The project should address the lack of greenery in the area which is a consequence of the industrial uses that it previously hosted. More generally, the project is expected to serve as a model for a more sustainable and inclusive city that helps to face the post-pandemic environmental, housing, health and economic crisis.

It must also address the low density of inhabitants in the District, which makes it difficult to provide services or public facilities. This is because the low population density does not allow reaching a critical mass of users that make them economically sustainable in the long run.

The current density of homes in the district is 45 homes per Hectare. It is intended that the district will reach a minimum density of 90 homes per Hectare. This value allows for the provision of necessary services and corresponds to the average values of mixed-use urban areas (housing, economic activity, facilities and green spaces).

The size and situation of the redevelopment area make it possible to reflect on all the three main challenges the city faces: economic, housing and environmental crisis. Innovative proposals are therefore expected to explore the possibilities to implement more sustainable urban fabrics that prioritize concepts such as closed loops of water and materials, km0 products and local food production while helping to mitigate the effects of the increase in temperature.

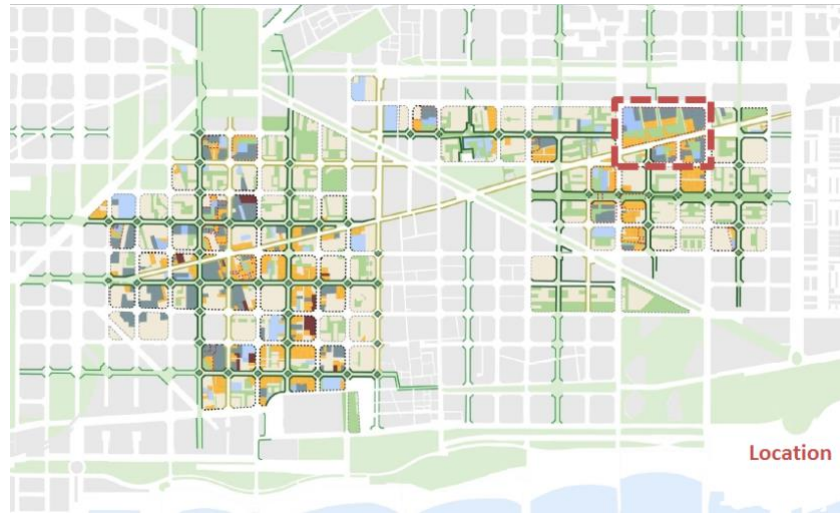
### **Specific city planning rules and regulations**

Barcelona is characterized by being a dense urban fabric that accommodates 1.6 million people, and with a high presence of strategic infrastructures increases its vulnerability to climate change, in an already vulnerable Mediterranean environment, as it is one of the areas in the world where the impacts related to climate change are most prominent.

The city is committed to a mixed, efficient and compact city model that improves the quality of life of its citizens. The planning criteria is therefore based on finding sustainable solutions to urban, socio-economic and environmental aspects. This means that from the beginning it is necessary to introduce in the planning criteria to increase and diversify the urban green, to endow to the urban fabric of multifunctionality creating new centralities, to diminish the forced mobility of the citizens and to harness the public transport, to increase the energetic efficiency and the water saving.

The proposal should achieve a transformation from a currently industrial area taking advantage of a place and a strategic position within the city to develop an urban fabric of mixed uses.

For this, teams are invited to take into consideration the Master Plan for an inclusive and sustainable 22@ District (Initially approved on September 30, 2020)[ MPGM22@ inclusiu i sostenible (30 de setembre de 2020) ]



*Figure 32@ General structure and Green Corridors*

For the development of the proposal, it is very important to pay attention to the scheme of green corridors, which is a city program to structure both the district and the city as a whole, with the aim of creating a powerful environmental system that helps to face the challenges associated with climate change.

The project area is located in a place of intersection of different green corridors, so this fact must be recognized and it will have to be designed in such a way that an adequate combination and encounter between them occurs.

### **Language requirements**

Students are invited to submit proposals in either Spanish, Catalan, or English.