SPECIAL INFRASTRUCTURES PLAN
POBLENOU DISTRICT, BARCELONA

Regulations

OCTOBER 2000
REGULATIONS

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Chapter I. GENERAL DISPOSITIONS

Article 01. Definition, ambit and legal framework

01. The Special Infrastructure Plan for Poblenou (PEI) is the urbanistic mechanism described the 19th and subsequent articles in the Modification of the General Metropolitan Plan (MPGM) for the renovation of the industrial areas of Poblenou, known as the 22@ Activities District. The Barcelona Municipal Urbanism Sub-Committee definitively approved the Plan on the 27th of July 2000 (DOGC 3239 - Official Bulletin of the Catalan Government, dated 05/10/2000), in reference to the implantation urban services, infrastructure prevision and types of urbanisation necessary for the urban renovation of the sector.

02. The ambit of the Special Plan is defined in plan N° 1.1 at a scale of 1/1000, coinciding with that of the MPGM, but without prejudice in terms of the definition and planification of the same that may require the consideration of the amplification of its ambit.

03. The Special Plan is drawn up in accordance with the previsions of the MPGM and Articles 65 and 67 of the Barcelona Charter.

Article 02. Objectives

01. The objective of the Special Plan is the establishment of the conditions for the implantation of the urban services proposed in the general planning and technical conditions regulations. These must be taken into account when proceeding to draw up Special Interior Reform Plans (PERI) for local transformations, urbanisation projects and general works projects.

02. It is also the objective of the Special Plan to establish the conditions and procedures that will ensure the contribution of landowners towards the costs of urbanisation.

03. Apart from the regulations, Special Plan establishes different recommendations regarding the execution of the different systems and subsystems that comprise the urban infrastructures as a whole, in order to permit the optimum quality in the application and deployment of the proposed urbanisation of the sector.
**Article 03. Documentation**

The Special Plan comprises the following documents:
- General description and Annexes
- Regulations and Annex of Technical Guidelines
- Economic Study and Phased Planning
- Plans

**Article 04. Obligations**

01. In accordance with the previsions of Article 19 of the MPGM, the Special Plan establishes the criteria and the basic urbanistic solutions that should be developed within the Urbanisation Projects drawn up in relation to the ambits and main thoroughfares within the Special Plan, both in terms of public and private space.

02. The PEI defines the contents of:

   a). Projects that will develop the urbanisation foreseen directly in the PEI: Streets and common elements within the ambit.

   b). The content required in urbanism projects that comprise PERI's and Special Plans that imply the modification of the General Metropolitan Plan.

   c). Services and installations to be incorporated in building projects, especially in terms of communal services and Rights of Way.

**Article 05. Validity and modification**

01. The validity of the current Special Plan is indefinite, without prejudice to its revision or modification within the already established legal framework.

02. The Economic Study of the Special Plan will be periodically updated as the global costs of the implantation of the infrastructures already defined in the Special Plan are adjusted to reflect real-time cost variations.

03. The actualisation of the Base Urbanisation Cost Module in relation to the consumer price index will be made annually by way of Mayoral Decree.
Article 06. Development

The development of the determinations of this Special Plan in relation to the different systems and infrastructure networks will be realised via the development of:

a). Highway urbanisation projects. Their ambit will be the public spaces resultant from the alignments described in the MPGM.

b). The urbanisation of block interior courtyards. Their ambit will be the public spaces or privately owned public spaces within these courtyards, in compliance with the alignments described in the MPGM.

c). Other urbanisation projects. These will be projected individual buildings housing centralised elements linked to the infrastructure and services networks.

d). General building projects and facilities. The projects corresponding to the application for Building and Activities Licences should take into account and incorporate the previsions of the Special Plan regarding services and installations.

Article 07. Spatial prevision for buildings, installations and technical services

01. In Plan N° 2.1.1, the Special Plan defines the spatial location and dimensions of certain buildings, installations or premises where the necessary technical services will be located, in compliance with the previsions of Article 4.2 of the MPGM.

02. In Plan N° 2.1.1, the Special Plan and the current regulations also define the different ambits within which are resolved the land allocation for technical services, within the detailed urbanistic framework already defined by the Special Plans embodied in the MPGM.

03. The PERI and Urbanisation projects proposed by the MPGM will define within their respective ambits the required technical service spaces in order to guaranty the organisation of these services within the blocks in accordance with the Technical Regulations in the Annex of this document.
Chapter II. HIGHWAY URBANISATION PROJECTS

Article 08. Initiatives

01. The previsions of the Special Plan regarding the urbanistic services and infrastructures to be implanted, whether surface, underground or aerial, will be developed within the urbanisation projects destined for the highway system. Their ambit will be the public space defined by the street alignments embodied in the MPGM.

02. These projects will by public initiative, both in their design and execution.

Article 09. Territorial Ambit

The Town Council will decide in each case the exact territorial ambit of each urbanism project. With regards to exact determination of the ambit of the various urbanisation projects that affect the public highway, the development previsions of the PERI and the proposed programming of the works to be undertaken, the possible effects on local traffic will be taken into account.

Article 10. Contents

01. All urbanisation projects will take into account the urban services provided for in Article 19 of the MPGM, specifically in Article 21 of this Plan and in the Technical Standards.

02. The conditions for the implantation and localisation of the different services incorporated in the urbanisation projects will comply with the Technical Standards of this document.

Article 11. Execution

The execution of the urbanisation projects that affect the public highway will correspond to the Town Council. All will have to have been completed prior to the occupation of the buildings defined in the PERI.
Chapter III. BLOCK URBANISATION PROJECTS

Article 12. Initiatives

The initiatives for the elaboration and execution of the urbanisation of public spaces or privately owned spaces destined for public use situated within the blocks resulting from the distribution proposed by the different PERI, are defined within the same PERI, according to the corresponding to the type of proposed intervention.

Article 13. Territorial ambit

The ambit of the urbanisation projects is defined within the PERI, and may include one or more blocks, depending on the definition of the Units of Actuation.

Article 14. CONTENTS

01. Block urbanisation projects should include not only the requisite elements pertaining to the ordination of the area in question, but also the services, installations and spatial previsions described in the Technical Standards.

02. They should also incorporate all of the public spaces or privately owned spaces destined for public use situated within the ambit of the intervention.

Chapter IV. GENERAL WORKS PROJECTS

Article 15. Conditions for general works projects

01. All new-build projects, and those projects of rehabilitation, reform or the structural modification of existing buildings or that are equivalent to 50% of the cost of a replacement new building will have to comply with this regulation and with the Technical Standards annex. These projects will comply with both the form of connection to the general systems and networks, and in relation to the localisation of the different elements and technical spaces within the block courtyards.

02. The above mentioned actuations will also have allow provision for and give consent for the rights of way necessary for the service conduits and for their access, in accordance with the Technical Standards.
Chapter V. MANAGEMENT AND EXECUTION

Article 16. Execution of the urbanisation

01. The urbanisation of the highways that correspond to PEI will be undertaken by the City Council.

02. It may be agreed to execute particular works corresponding to the PEI in specific cases of the Units of Actuation provided for in the PERI by way of compensation, providing that they comply with the predefined stages of urbanisation and concurrently with the urbanisation works. In all cases, the works will be executed under the control of the organisation charged with the execution of the PEI.

03. Regarding the execution of the works corresponding to the highways defined in the PEI, the ambit of the MPGM will be defined in a single polygon.

04. The urbanisation of the blocks will be executed in accordance with the actuation system defined by the PERI and in accordance with the pre-established phases established therein.

Article 17. Urbanisation costs

01. The Economic Study contains the economic previsions for the renovation of the infrastructures of the whole sector, and the part that corresponds to the owners within that sector.

02. Incorporated therein is the estimated cost of the infrastructures that due to their characteristics correspond directly to the Administration, and to the companies and the service suppliers, which will not be chargeable to owners within the sector.

03. The Economic Study defines the applicable urbanisation surcharge to the ambit as a whole in order to distribute the urbanisation costs of the execution of the PERI proportionally to the respective landowners.

04. The module will be updated according to the parameters defined in Article 5. Therein are also defined the correctional coefficients to be applied to the module according to the site and its situation.
Article 18. Application of the urbanisation surcharge

The module, together with its correctional coefficients, will be applied in the following cases:

a) To the Special Plans that comprise the MPGM to define the urbanisation charges that correspond to the group of sites included within their ambit for the execution of the PEI. These charges will be fixed within the limits of works to be executed within the Unit of Actuation.

b) To isolated works, to define the urbanisation cost applicable to the site.

Article 19. Payments for urbanisation

01. Within the Units of Actuation, the urbanisation costs defined by the module will be charged according to the overall profits and charges and will be paid by the City Council. In this case, the payments maybe subject to an agreement between the City Council and the owners within the ambit of the actuation.

02. Regarding isolated actuations, the charges will be paid with the solicitation of the following licences:

a). New buildings

b). Works that imply the modernisation or reform of a building whose cost is equivalent or superior to 50% of the cost of an equivalent new building or installations.

c). Any change of use with installation costs equivalent to part b).

03. The Special Plans that develop consolidated facades will define the corresponding urbanisation charges, according to the prevailing urbanisation surcharge and the coefficient to be applied.

04. At the time of application of the urbanisation surcharge to each property, all urbanisation works carried out in the previous 10 years executed by the owner may be taken into consideration at the owners request, as long as they can be made use of according to the requisites of the PEI and its corresponding urbanisation project. These conditions may give rise to a reduction of up to 15% in the urbanisation surcharge to be levied on the property. This reduction will be weighted according to the entity and usefulness of the works undertaken.
Article 20. Payments by means of land cession or exploitation

01. The owners of buildings that are not subject to transformation may substitute the urbanisation charges with a transfer of exploitation rights equal to 0.2m$^2$ floor area/0.2m$^2$ site area to the Municipal Urbanistic Patrimony, assuming that the existing edification does not already surpass this limit.

02. This determination will be applied when the PERI specify these existing buildings as not the object of transformation actuations.

Chapter VI. REGULATION OF INFRASTRUCTURES

Article 21. General Dispositions

01. The Special Plans and Urbanisation Projects to be developed within this Special Plan will be drawn up with criteria de sustainability, of environmental improvement and of quality, and with the application of the determinations and recommendations of this Special Infrastructures Plan.

02. The regulation of the technical conditions required by the different service infrastructures to be developed will be realised according to the following classification of systems and subsystems:

- Energy systems infrastructures, comprising
  
  Gas supply  
  Electrical supply  
  Air-Conditioning systems  
  Solar energy systems

- Water cycle infrastructures, comprising
  
  Drinking water network  
  Drainage network  
  Use of freatic water

- Telecommunications infrastructures, comprising
  
  Cable networks  
  Radio communications systems
• Infrastructures relating to the collection, treatment and collection of waste.

• Mobility and accessibility infrastructures.

• Cleaning infrastructures.

3. The regulation of the different systems that integrate the sector differentiate the prescriptions required by the different Urbanisation Projects, and those specifically targeted at the transformation of isolated plots contemplated in the MPGM.

Article 22. Existing networks and services

When the reurbanisation of a highway artery is executed, the proprietors of the existing networks and conduits that require modification or extension in order to comply with the minimum requisites of the service will be obliged to relocate them in accordance with this Plan and the Urbanisation Project. Should this not be the case, posterior modification or relocation of the existing networks will not be permitted.

Article 23. Level of application of the Technical Regulations

The Technical Standards of the PEI in the annex to this Regulation, depending on the specific situations, are legally binding in terms of criteria of actuation or recommendation. The criteria that have been taken into consideration must be justified in each project.
ANNEX

SPECIAL INFRASTRUCTURES PLAN
POBLENOU DISTRICT, BARCELONA

Technical Standards

OCTOBER 2000
Chapter I. GENERAL CONDITIONS

Article 01. Objectives

The object of these Technical Standards, in relation to the infrastructures, is to define the binding parameters, basic criteria and recommendations for the Plans and Urbanisation Projects to be developed within the Poblenou 22@ ambit.

Article 02. Ambits of application

Although each of the infrastructure systems are conceptually integrated, the following actuations should be dealt with separately:

a). Highways and other public spaces

b). Private space, subdivided into:
   • Open space in the interior of the blocks
   • Built plots

Article 03. General dispositions

1. The control of the technical standards applicable to the different proposed service infrastructures will be realised according to the relevant classifications of these infrastructures within the systems and subsystems described in Article 21.2 of the regulations.

2. The determinations relative to the execution of each one of these systems and subsystems will be formulated according to the following concepts and definitions:

   • **Central Elements:** Elements of the infrastructures network appropriate to a block development, such as:
     • Electricity substations.
     • Centralised air- conditioning plant.
     • Centralised pneumatic refuse collection facilities.
     • Centralised cleaning facilities.
     • Material recycling facilities.
     • Telecommunications centres or hubs.

   • **Network trunking:** The underground service networks beneath the public highways that connect local or external nodes with the blocks.
• **Distribution networks**: The networks of subterranean conduits and service access in the pavement that surround the blocks. They carry various types of services and cover the necessities of the subterranean services within the pavement, or to provide services for buildings not actually included in the block transformation.

• **Service Galleries**: Subterranean service galleries that connect different blocks. They provide accommodation for all types of services and for their penetration of the block.

• **Block Access**: The connections between the network trunking and the blocks will be made at two points within each block. These service accesses will be made via the service galleries, connecting the network trunking with the technical chambers.

• **Central Plant rooms**: Chambers located within the blocks that contain the service equipment necessary for each block.

• **Interior Circuit**: Interior distribution network for the different services within each block, running from the technical chambers to the individual plant rooms of each building.

• **Plant Rooms**: The spaces provided for the elements corresponding to each building. The interior circuit will provide the services to these points, from where there will be vertical connection to each floor.

• **Vertical Connections**: Ducts and service spaces that connect vertically to each floor.

• **Floor Distribution**: Service ring main serving each floor of the building, connecting the vertical connections to the point of consumption (apartment, office etc.).

• **Roof Circuit**: Roof level service ring main, linking the vertical connections with the roof plant rooms.

• **Roof Plant Rooms**: Service spaces that group block services, which due to their specific nature, require location on roof terraces or direct dedicated access: telecommunications equipment, for example.

• **Public Rotational Parking**: Areas destined for the construction of car parking to be used on a diurnal rotation basis.

This area, wherever possible, will house the centralised technical chambers and plant rooms for block services.
Article 04. Council rights of way

Barcelona Town Council reserves the right of access to all interior rings, vertical connections and plant rooms, as well as the management and use of the technical chambers, roof plant rooms and the spaces reserved for air-conditioning plant.

Article 05. Restrictions and land reserve for rail tunnel

Both within the ambit of the affected public highways and private property, there will be a provision of land for the Railway tunnel between Glòries and Besòs. The PERI and Urbanisation Projects will incorporate the reservation of subsoil for the construction of this new Rail link, in accordance with the trajectory indicated in Plan 4.6.3.

Chapter II. HIGHWAY URBANISATION CRITERIA

a). The urbanisation of public highway will obey the differentiation between basic streets and secondary streets (Plan 4.2.5.), which correspond to the section types contained in Plans 4.2.7. and 4.2.8.

b). The streets will have the functionality contemplated in Plans 4.2.4, 4.2.5, 4.2.7, 4.2.8, 4.2.9. and 4.2.10.

c). The Urbanisation Projects will incorporate all of the elements and materials habitually required by Barcelona Town Council for these types of project.

Article 07. Underground service galleries

• Network trunking and transversal galleries

The organisation disposition of the different subterranean networks and conduits beneath the public highway will respond to the functional structure described in Plan nº 2.7, and will require the creation of service galleries perpendicular to the street in order to permit the connection of the network trunking to each block and the communication between the basements of each block. The dimensions of these galleries will comply with the scheme in Plan nº 2.6, without prejudice to the establishment, by the Special Plans and Urbanisation Projects of each transformation area, of different models depending on the global service requirements of the ambit in question.

• Distribution Networks
A perimetral subterranean service distribution network will be constructed around each block beneath the pavement. This will permit the connection of services to urban elements and street furniture, and to provide services consolidated facades or to buildings within the blocks not to be transformed. The minimum provision will be for 7 tubes, according to Plan no 2.6. This network will distribute different energy and telecommunications services.

Article 08. Gas mains

1.) Urbanisation Projects will incorporate the expansion and renovation of the gas mains to enable the Gas supplier to execute the works concurrently. The canalisation should preferably be executed beneath the pavement.

2.) In blocks undergoing large-scale transformation, the prevision will be for two communal connections, one each side of the of the service galleries. The position of these connections will be indicated in the Urbanisation Project, and will be in the public domain. From these points, the interior network, wherever possible, should coincide with the interior ring, with the concession of the corresponding rights of way for the community of the block.

Article 09. Electricity supply

1.) Galleries

a.) One of the PERI will reserve an area of 1200m2 within a predetermined ambit for the construction of a 220/25 kV substation.

b.) The PERI and Urbanisation Projects will establish a union between the maintenance gallery and the network of existing galleries of the Ronda Litoral or Carrer Badajoz.

2.) Required conditions for the urbanisation of public highways

The streets that form part of the trunking network (see Plan no 8.1.2.) will be provided with the following elements:

• Concrete channel (HM-15) with four polyethylene double skin tubes, of 150mm interior diameter.
• Connection of the channel to the blocks with a service gallery.
• Access chambers at all junctions and changes of direction.

3.) Low Tension distribution
The extension of low-tension lines will be avoided at all costs in the public highways. The distribution will be made with communal conduits in the block courtyards.

Wherever it is possible to apply these criteria, the perimeter subterranean distribution network situated beneath the pavement will bring the electrical supply to the urban furniture and to the consolidated facades of residential buildings and to the first building in those blocks not to be modified.

**Article 10. Centralised air conditioning network**

It is intended that there will be centralised air-conditioning networks installed within the ambit of this Plan.

The Plan establishes the minimum sector, formed by groups of blocks that may benefit from the installation of centralised air-conditioning plant (see Plan n° 8.3.1.). These designated sectors may amalgamate in order to concentrate their services in one central plant facility.

The deployment and organisation of the network will be such as to permit the extension of the service beyond the originally defined limits.

The Barcelona City Council will adjudicate the centralised air-conditioning service as a concession. The selected company will install the necessary plant and conduits, and will manage and exploit the service.

The public space Urbanisation Projects will only incorporate the galleries for the use of this system.

**Article 11. Telecommunications infrastructures**

**Subterranean actuations in the public highway subsoil.**

a.) Concrete conduits of exterior diameter 125mm will be laid along the length of all streets in the direction Llobregat/Besòs and in streets in the direction perpendicular to the coast (identified in Plan n° 9.2.) in base 4, and will be interconnected with access chambers situated at each intersection. The standard conduit will contain 28 tubes in base 4, which may be increased according to demand or according to the section of the street. The connection between the different conduits and the basements of the different blocks will be produced via the service galleries that cross beneath the conduits.

b.) In the blocks subject to major or total transformation, will connected to the galleries in two points: the rest of the connections will be made via the internal ring of the block.
c.) The blocks not subject to transformation will be connected to the service galleries via the perimeter distribution network, with tubes situated within the pavement, and grouped in continuous conduits with access chambers situated on the street corners. These access chambers will be constructed according to the demands of the existing buildings.

The perimetral conduits and the connections to the consolidated facades will be dimensioned accord to the demands of the existing services, plus a reasonable reserve.

The distribution network will also carry the telecommunications services destined for the urban furniture situated on the pavement and the cables destined for traffic control etc. The minimum capacity will for 7 tubes (for the blocks to be transformed).

d.) Barcelona Town Council will modify the capacity of the networks in the public highways by agreement with the different operators and according to demand. The costs will be attributable to the operators in question.

e.) The existing telecommunications conduits will be connected to the transversal galleries and the access networks connecting the consolidated facades.

Article 12. Water cycle infrastructure

12.1. Potable water network

The proposed actuations regarding the potable water supply will be determined in each ambit by the corresponding PERI and Urbanisation Plan, and will incorporate hydrants specifically designated in Plan n° 7.1.2, as well as the corresponding extension and renovation of the existing.

12.2. Freatic water network

Barcelona City Council is introducing a municipal network aimed at the utilisation of Freatic water for irrigation. The Urbanisation Projects will incorporate the extension of those parts of the network included in their ambit (see Plan n° 7.2.2.).

12.3. Drainage network

The Urbanisation Projects will include the construction new main drainage, secondary drainage and the increase in capacity of surface drainage defined in the specification and plans of this Plan.
The actuations relative to the drainage network regarding specific streets and areas are included in Plan nº 7.3.2, and in general will respond to the technical specifications included in the current Barcelona Special Drainage Plan (P.E.C.L.A.B.).

Article 13. Infrastructures for the collection and recuperation of waste

13.1. Subterraneo installations beneath the public highway

1. In order to provide all of the blocks within the 22@ ambit and in potentially transformable isolated plots with a waste collection network, all of the streets described in Plan nº 6.1.3 will have one 500mm diameter tube (for waste disposal), and two 50mm diameter tubes (for the compressed air ducts and electrical cables).

2. The Urbanisation Projects will include the tubes destined for waste collection and their respective collection points situated on the public way.

Article 14. Mobility and accessibility infrastructures

14.1 Facilities and installations to be included in Urbanisation Projects

These projects will incorporate the facilities projected in the plans of this Plan. Therein will be included the installation of all of the necessary equipment destined for traffic lights, signage, control and advanced traffic management according to the functional characteristics described in the specification.

14.2. Tram platform in the Carrer Pere IV

The Urbanisation Projects for this street will incorporate the construction of a special sub-base to serve as the foundation for the tram rails, as well as the lamp posts that may also serve as the support for the overhead electric traction supply, as described in the plans.

Chapter III. BLOCK INTERIOR COURTYARDS

Article 15. Central Plant rooms

Within the ambit of the privately property of each block, the Special Plan will determine the obligations regarding the reservation of specific areas, denominated “Central Plant rooms”, at ground floor or basement level, destined for the situation of control equipment for the different networks (see Plans 2.2.1. and 2.2.2.).
The applicable criteria will be that each block will dispose of two groups of central plant rooms, situated as close as possible to the service galleries, connected to these galleries and to the network trunking. The larger groups of central plant rooms will be situated at ground level or basement level within the public parking areas, providing they have the required level. The other group of central plant rooms will be situated preferably on the opposite side of the block to the others, and will be connected to the trunking network with access to the other service gallery.

If the block is not approximately of the same size as the Eixample block, then there will be just one central plant room.

The central plant rooms situated at basement level should be able to guarantee that they are impermeable, through tanking and drainage, both by freatic and rainwater. Otherwise, they must be situated at street level.

All new buildings and buildings that have been more than 50% refurbished will have central plant rooms, and will have provision for the necessary rights of way and connections to the interior ring of the block.

**Article 16. The interior circuit**

The service distribution conduits to the different buildings in each block will generally be concentrated in the internal circuit, which will originate in the plant room and will extend along the perimeter of the block, linking the plant rooms to the service galleries. The ring will dispose of a 2m wide free area. The interior circuit will have the functional characteristics detailed in Plan n° 2.3, and sufficient capacity to contain the power supply, telecommunications, gas, cleaning, refuse disposal, water and air-conditioning services. The services contained within the circuit will be sufficient for the needs of the block, and in some situations, for the adjoining blocks. There will be a provision within the circuit for two service trays (30 x 10 cm) for the energy and telecommunications services managed by Barcelona City Council.

**Article 17. Operational deployment**

**17.1 Actuations in blocks to be transformed**

The Urbanisation Project contemplates the elements necessary for each system. The placement of the galleries and central plant rooms will be such as to enable the provision of services to the first building within the block that requires them. The placement of the circuit must permit connection to all of the buildings within the
block. Should the circuits require temporary modification, it will be at the developers own cost.

The construction of new buildings will proceed maintaining the placement of the plant rooms, access points and circuit, permitting the maintenance of the functional and dimensional configuration of their own service requirements and those of the entire block.

17.2 Actuations in buildings to be reformed, new buildings or blocks not to be transformed.

The first building to be built may connect itself to the services via the perimetral network. A right of way will be conceded to the Barcelona City Council to enable service connections to buildings within the block that may be redeveloped in the future.

Article 18. Gas mains

18.1 Actuation in blocks to be transformed.

The gas main will be connected from the street to the interior circuit.

This interior ring will be protected, will have limited access, and will have stopcocks situated at the connection to the main, on the interior circuit and at the connection to each building, in accordance with the current Gas Installation Regulations.

Each building will have plant room for the gas meters.

18.2 Actuation in plots within blocks not to be transformed.

The connection to the building will be made from the underground main situated under the public highway. A right of way will be established for the building in question and for adjoining buildings, as a prevision for future transformations of the block in which the building is situated. The rights of way will be in favour of the City Council.

Article 19. Electrical supply

19.1 Minimum spatial provisions required within the block courtyards

The courtyard of each block will dispose of two central plant rooms (Sales Tècniques), with minimum dimensions of 9.00 x 4.00 by 3.00 meters of free height. These spaces will be sufficient to house two 630 KVA transformers and their necessary equipment. These central plant rooms should be diametrically opposed on each side of the block. If the
block is not complete (Example type), then only one plant room may be provided.

The developer responsible for the transformation of the block will take charge of the costs of the construction of the central plant rooms, the ring equipment, the two 630 KVA transformers and their corresponding equipment. In all cases, the equipment and enclosure will be ceded to the City Council without charge.

19.2 The interior circuit

The Low-Tension distribution will be made within the interior of the block using the interior circuit. The required dimensions will be defined in the Urbanisation Project.

The interior ring will be the property of the communal owners. Barcelona City Council will enjoy the right of way.

19.3 Central Plant Rooms

All buildings will have plant rooms, where the meters and other communal installations will be located. They will belong to the communal owners.

Article 20. Centralised air conditioning network

20.1 Central Plant rooms for centralised air conditioning

The placement and dimensions of the central plant rooms for centralised air-conditioning will be specified in the PERI and Urbanisation Project, with orientative dimensions of between 900 and 1300m², depending on the requirements of the area served. The space reserved for the plant room will be ceded without charge to the Barcelona City Council, will have the access necessary for the installation of the plant and machinery necessary for centralised air-conditioning, as well as for maintenance access, air intake and gas exhaust/chimney.

The blocks within the sector will be connected to the central plant room according to Plan no 8.3.2. The connections will have the capacity for two ducts of exterior diameter of up to 800 mm, and two of exterior diameter of up to 400 mm, as well as the necessary accessories for the installation and maintenance of the network.

The interior circuit will have sufficient capacity to enable to incorporation and maintenance of two ducts of exterior diameter of 800 mm and two ducts of exterior diameter of 400 mm. This circuit may carry services for buildings within the block or for other blocks. The placement of the underground ducts installed within the interior circuits and service
galleries will be defined in the Urbanisation Projects. The City Council will enjoy right of way in the interior circuits.

Both the block containing the central plant room and all other blocks will reserve an area of 100m² within the central plant room for the installation of accumulation tanks in order to be able to meet peak demand.

20.2 Actuation in buildings located in blocks to be transformed

All new or refurbished buildings will have a plant room destined for air-conditioning, which will permit access to the general air-conditioning network for each building by means of a substation situated in this plant room.

20.3 Actuation in plots situated blocks not to be transformed

Buildings to be reformed 50% or more and new buildings will have plant rooms and sufficient space reserved for the interior circuit. A right of way will be created in favour of Barcelona City Council in order to permit the completion of the ring in order to serve other buildings in the block.

Article 21. Building air conditioning systems

• In new buildings, whether the use be industrial, 22@ activities, hotel, offices, services or housing, as well as in existing industrial buildings of various floors being wholly the object of transformation, the installation of air-conditioning machinery will not be permitted in either the exterior or interior facades. In existing industrial buildings of various floors subject to partial transformation, considering the transformation to be inferior to 50% of the floor area, the installation of air-conditioning machinery will not be permitted in the exterior facade.

• In new buildings, whether the use be industrial, 22@ activities, hotel, offices, services or housing, an area will be reserved for the plant room destined for air-conditioning equipment. The minimum space will be 15m², located in the basement and suitably protected against water ingress.

• Buildings that have their own air-conditioning system, independent of the centralised network, will conform to the following requirements:

  • Avoidance of air-conditioning equipment that utilise HCFC type refrigeration liquids, using instead equipment using HFC refrigerant.
  • Install equipment qualified as 3 or 4 star according to Royal Decree 275/1995 – Energy efficiency in Boilers.
  • Installations with a power consumption of more than 200kW will use freatic water as heat source for both refrigeration and heating. Freatic water will be returned to the subsoil once used,
without the quantity destined for other uses. The control of the head of water will be by water meters.

Article 22. Thermal insulation in buildings

Thermal insulation in new or existing buildings to be rehabilitated will comply with the NBE-CT-79, NBE-AT-87 and Article 68 of the Municipal Regulations concerning thermal insulation, and any regulation that may replace them or supplement them in the future.

Article 23. Solar energy systems

1. Sanitary hot water installations will make use of solar energy in accordance with the Municipal General Urban Environmental Regulations. The daily consumption of sanitary hot water for 22@ activities will be equivalent to that of office use.

2. In residential buildings, the installation points for washing machines and dishwashers will have a hot water supply destined for the use of bi-thermic equipment, apart from the usual water supply.

3. As project criteria, all new, rehabilitated and transformed buildings will have to install a photovoltaic system of electricity generation. The potential of the photovoltaic system will be at least 0.35 Wp for each square metre of floor area. The minimum potential corresponding to the buildings in each block or superblock may be grouped in one or more communal installation.

Article 24. Telecommunications infrastructures

24.1 Central Plant Rooms

a.) The Central Plant rooms will contain the necessary equipment to serve the whole block or superblock. One of these plant rooms will be 25m² and the other 50m².

b.) The interior rings will unite the Central Plant rooms with plant rooms in each building. They will be dimensioned according to the Urbanisation Project, and will reserve free space for two Municipal service trays.

c.) Barcelona City Council will have the right of use and management of the Central Plant rooms, as well as a right of way regarding the internal circuit.

24.2 Control of communal Telecommunications infrastructures (ICT)
a.) As a general norm, the ICT Law "Law regarding communal infrastructures permitting access to Telecommunications Services" 1/1998 of the 27th February and the accompanying technical regulation RDL 279/1999 of the 22nd of 1999 will be applicable, without prejudice to the previsions of the Regulation regarding this area regarding the provision of the higher required levels of telecommunications services.

b.) The plant rooms will have minimum dimensions of 25m² when situated in industrial, commercial or office buildings and of 6m² when situated in residential buildings. These plant rooms will contain the equipment and telecommunications services in accordance with the previsions of the Law of Communal Telecommunications Infrastructures (ICT) regarding Telecommunications Installations Precincts (RITI).

c.) The roof terraces of new or reformed buildings will have plant rooms that will permit the installation of all of the equipment necessary to provide access to services via radio to all of the occupants of the building. The plant rooms will have minimum dimensions of 12m² when situated in industrial, commercial or office buildings and of 6m² when situated in residential buildings. These plant rooms will contain the equipment and telecommunications services in accordance with the previsions of the Law of Communal Telecommunications Infrastructures (ICT) regarding High-Level Telecommunications Installations Precincts (RITS).

The high-level connections, permitting the connection of the RITS with the roof terrace, should be of at least 8 40mm tubes in order to facilitate access to radio-telecommunications.

d.) In non-transformed blocks the network will be connected to the perimetal distribution network. In this case, the access to the building will be executed according to the ICT regulations, although the low-level access channel permitting access to the exterior of the building (from the low level access node to the RITI) will be of a minimum of 10 tubes of 63mm diameter.

e.) The new or rehabilitated buildings, whether situated in transformed blocks or not, will dispose of the plant rooms, interior circuits etc., contemplated in this Regulation.

f.) Barcelona City Council will have the right of use and management of the roof terrace plant rooms, as well as a right of way regarding the vertical conduits and plant rooms.

24.3 Requirements for the installation of radio systems
a.) General Requirements.

In order to minimise the visual and environmental impact of antennas and cable, individual antennas will not be permitted. The installation of collective antennas for at least each community is obligatory.

Parabolic antennas for satellite reception will be installed on the roof terrace. Their installation on facades or balconies is prohibited. Parabolic, mobile telephone, base station, radio link or terminal equipment antennas will not be visible from the street. Cable drops or similar installations will not be permitted on the facades, or any other place visible from the street.

The regulation regarding radio-electronic security that encapsulates the recommendations of the Council of Europe and Environmental Department of the Generalitat of Catalunya will be applied.

b.) Diffusion of radio and television broadcasts

The installation of antennas and amplifiers associated with the reception of terrestrial television and commercial FM for all users is obligatory. A single communal antenna will be installed in each building, with a minimum of two per block. The roof design must permit the installation of an antenna in each building and should include the appropriate high-level telecommunications precinct.

c.) Satellite reception

The installation of parabolic antennas and associated equipment in buildings is optional, but the provision must be made in roof design to permit their future installation. Parabolic antennas will be installed directly on the roof terrace in the appropriate spot, pointing due south and close to the RITS. It is recommended that 6m² be reserved in order to comply with these conditions, and that the area should be a service area and not generally accessible.

d.) Mobile telephone

Mobile telephone base stations require an area of approximately 14m². The construction project should consider that the building structure must be able to support the weight of the equipment and antennas.

In order to avoid the proliferation of base stations, operators may not choose uncoordinated locations. The different PERI and Urbanisation Projects that comprise the MPGM will define the locations with the appropriate conditions, both geographical in order to permit adequate coverage and technical in order to permit the installation of adequate equipment and infrastructure.
Buildings with the characteristics (location and height) that are appropriate for the situation of mobile telephone radio equipment will have to have provision already included in their project for the inclusion of a plant room on the roof terrace of 50m^2 in order to accommodate the equipment of various operators. These spaces will be independent to those already mentioned in point 24.3.c. It is also proposed that there be included the location for a support for communal antennas. Wherever possible, these plant rooms and communal antenna supports will be located on the roof of a building dedicated to public parking.

The conduits that will carry the cables from the plant room to the antennas will be dimensioned to suit all operators. The risers necessary for the connection of the mobile telephone plant room with the RITI should be included in the communal infrastructure project in order to permit connection with the telecommunications trunking network.

The rights of use and management for the plant room and antenna support will be ceded to Barcelona City Council, together with the rights of way to the risers and plant rooms.

e.) Access to the local network via radio.

Buildings with the characteristics (location and height) that are appropriate for the situation radio equipment suitable for connection to the local network, will have to have provision already included in their project for the inclusion of a plant room on the roof terrace of 25m^2 in order to accommodate the equipment of various operators. The possible locations will be determined in 3 buildings in Poblenou. The plant rooms will be shared between the various operators and will have a minimum area of 50m^2. Where possible, these plant rooms and their antenna supports will be situated on the roof of buildings destined for public parking. As with the case of mobile telephone installations, the construction project will take into the account the structural resistance necessary for these installations. These plant rooms will be independent of those described in points 24.3c and 23.4d.

The rights of use and management for the plant room and antenna support will be ceded to Barcelona City Council, to ensure that the operators co-ordinate installation of their equipment. The technical project should also consider the augmentation of the vertical riser that may be necessary in order to connect the equipment to the telecommunications plant room situated at a lower level connected to the trunking network. Barcelona City Council will have right of access to this vertical riser.

A plant room of 1 x 1 x 1.5 m should be incorporated for the building terminals. This may be the RITS of the building to facilitate access, or on the roof terrace. There should be a provision for one terminal per building.
f.) Other radiant systems

Other radio-telecommunications services, for example radio-control systems, PMR private telephone services or trunking systems will require infrastructure within the buildings. They will make use of the leftover space from the communal telecommunications infrastructures, such as the antenna supports, plant rooms and network access conduits. Amateur radio enthusiasts will have their own cabling prevision and their antennas well separated from other antennas.

These services will be organised according to the executive project, which should take into account the specific technical regulations applicable in each case.

Article 25. Infrastructures for the use of ground water

1). The collection and use of freatic water should be incorporated and dimensioned in the Urbanisation Projects of the different ambits of the Special Plans, without prejudice to the specific administrative norms applicable to the use of this water.

2). The criteria for the extraction of this water will be applied to each block, through wells within the same block or through connection to other wells in other blocks.

3). The criteria for the use of freatic water are as follows:
   • Air-Conditioning
   • In all centralised air-conditioning installations, and in all others with a potential of more than 200kW, heat exchange will be achieved using freatic water.
   • The used freatic water will be returned to the subsoil minus the metered quantities to be retained for other uses. The water will be returned in good chemical and sanitary conditions.
   • Street Cleaning
   • The blocks will dispose of an internal network, which amongst other uses, will be connected to network dedicated to cleaning, with two outlets per facade. Barcelona City Council will have the right to use this water, with the consumption compensated according to the meter readings.
   • The cleaning of communal spaces.
   • The irrigation of communal spaces.
   • The use of freatic water is recommended for non-potable sanitary water in non-residential buildings.

4). All services that use freatic water will be metered.

5). The profitable use of subsoil water will be regulated according to the Water Law 29/1995, its subsequent modification (Law 46/1999), as well as by the Law 6/1999 of the 12th of July,

6). Regarding the quality of the water, the parameters to be adopted correspond to Type A1 water, as defined in the "Prevention of sanitary risks derived from the reutilization of treated water for irrigation purposes", published by the General Public Health Directorate of the Generalitat of Catalunya.

7). The City Council will monitor the quality of all water to be used for irrigation.

8). The Administration will control the extraction of freatic water to ensure that it does not surpass 4 Hm3/per year in the whole of the ambit of the Special Plan.

**Article 26. Infrastructures for the collection and recuperation of waste**

1. Regulations to be applied to the privately owned spaces within the blocks to be transformed through the Special Plan.

1.1. The connection to the local trunking network by way of Ø 500mm tubes and the Ø 50mm tubes installed in the newly urbanised streets will be made solely at one point.

1.2. The Special Plans will establish the location of the necessary selective collection points in order to serve the block and each of its buildings adequately, as well as the interior network and pneumatic collection points destined for unmodified buildings. The City Council will enjoy right of way to the plant rooms and interior ring.

1.3. The collection units may be of two types:

   a). 4 valve refuse unit (one for each fraction) for residential buildings (see Plan n° 6.1.5.)

   b). 2 valve refuse unit for industrial and office buildings. These units will incorporate an extra air valve if they are situated at the end of a branch.

   Barcelona City Council will install the valves in the refuse units.

1.4. The number of equivalent residential units (H.E.) that correspond to each of the refuse unit valves will not be superior to 25.

   Provision:

   Residential: 2 outlets per dwelling and 2 outlets in each vestibule.
Service, Hotels etc. 4 outlets per premises.
Commercial: 2 outlets per premises.
Offices & 22@ activities: 2 outlets per premises.
Industrial: To be determined according to type of use.

1.5. The elements described in part 3 will be situated within a chamber of 2.5 x 7.5m situated in the first basement with natural ventilation directly to exterior or to the same basement of an area of 1m². In the case that there is no basement, this chamber will be built underground with vertical access (see Plan n° 6.1.5) and will have a connection to the local trunking.

This chamber will be of communal property, and the City Council will have rights of management and use.

1.6. The Special Plan and Urbanisation Projects will also define the horizontal conduit network in the interior courtyard of the block and the location of the access points at less than 60m intervals. The vertical conduits will have a diameter of 500mm, and will be situated within an accessible duct of 600 x 600mm, with the disposal points situated at 1200mm above each floor level.

The vertical conduits, the disposal points at each floor level and in each vestibule, and the access wells must be able to be inspected periodically.

Article 27. Local street cleaning systems

The urbanisation and building projects will incorporate the following provisions relating to:

- A pumped freatic water collection point in each block that may be:
  - Connected directly to the communal freatic water network.
  - With a deposit located in the upper part of the building.
  - With a deposit in the basement of the building and pumping equipment.

- A communal network to feed the various intended uses (refrigeration, irrigation of courtyard gardens, cleaning of community areas, other non-potable uses). In the blocks with centralised air-conditioning, all uses will be derived from the outlets of the air-conditioning system.
8 connection points for hoses for cleaning, 35mm diameter with 1 atm pressure, situated in the perimeter of the facades of the block, at plinth or street level, for street cleaning. Barcelona City Council will have its own meter for this use.

Article 28. Dispositions applicable for parking

The following criteria regarding parking will be applied within the ambit of the Special Plan.

1.) Parking for private cars.

a). Residential Buildings

- 2.5 parking spaces per dwelling of more than 150m² gross area.
- 2 parking spaces per dwelling between 90 and 150m² gross area.
- 1.5 parking spaces per dwelling of less than 90m² gross area.

b). 22@ Activities

- 1 parking space per 80m² gross area.

c). All other Uses

- Compliance with the actual legislation, which defines minimum standards. All incentives that would stimulate the use of private vehicles by means of an increase in parking provision must be avoided. An increase of more than 10% above the provision of the current regulations regarding private parking associated with a specific building would be permitted if coherence with the objectives of this plan could be justified.

2.) Motorcycle Parking

Private car parks will dispose of a supplementary area reserved for motorcycles, comprising 10% of the total number of parking spaces.

3.) Bicycle Parking

A minimum obligatory provision will be made in a closed area in the car park, or preferably in areas with direct street access.

- Residential Buildings

- 5 spaces per dwelling of more than 150m² gross area.
- 4 spaces per dwelling of between 90m² and 150m² gross area.
- 3 spaces per dwelling of less than 90m² gross area.

- 22@ Activities
  - 2 places per 80 m² gross area.

- For all other uses, there will be a supplementary provision to permit the parking of a number of bicycles equivalent to 10% of the number of vehicles.

4.) Loading and Unloading

The current regulations, “The Municipal Regulation regarding the provision of areas for the loading and unloading of vehicles and buildings”, governing the requirements according to specific activities defines the provision for each building. The 22@ zone permits a wide range of uses: those equivalent to office use hardly require any spaces for loading and unloading, whilst those equivalent to office use require more considerable provisions. In order to comply with the spirit of the Regulations, the following criteria will be applied:

- The areas of Poblenou subject to transformation or consolidation through Special Plans will apply the Regulations, considering the sum of the gross areas requiring areas of loading or unloading, even though some of the individual gross areas fall below the established minimum. When each of the existing or proposed premises is incapable of compliance with the Regulations, communal spaces will provided within the interior of the block. The Urbanisation Project will contemplate reasonable access for each of the premises, offices or industries etc. to the assigned loading and unloading areas

5.) Public Garages

The following definition will be applied as the criteria that should be taken into account in the predetermined ambit of the PERI in accordance with the characteristics of the ambit and the actuation:

In addition to the provisions detailed in the previous Article to be resolved in the built ambit of the Special Plan, in each block there will be a public garage, either subterranean or at street level, with a minimum capacity for 300 private vehicles, 30 motorcycles and 30 bicycles. In the blocks situated in the Carrer Llacuna and Maresme (Besòs side), and in the 3 central blocks, the minimum capacity will be for 400 private vehicles (see Plan n° 4.5.5.).
The minimum floor to ceiling height will be 2.2m, except for one level that will be superior to 3.0m that may be designated for loading, unloading or storage if necessary (Logistic Microplatform).

These car parks will be for public use with hourly tariffs and at the disposition of local residents. Each one will be commercially exploited with unitary management.

Agreements may be established between the developer and the City Council regarding both their construction and exploitation.