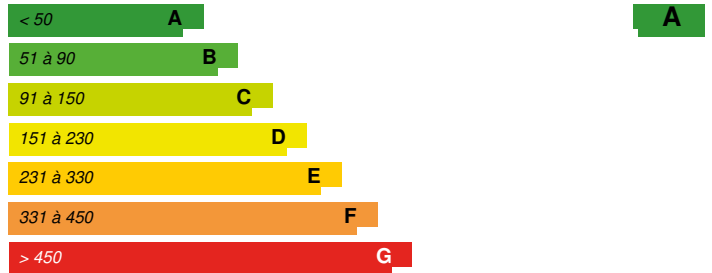


19 Apartments and a commercial office in the Bolivia Street, Barcelona

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Building Type : Collective housing < 50m
Construction Year : 2012
Delivery year : 2012
Address 1 - street : 08018 BARCELONA, España
Climate zone : [Cfb] Marine Mild Winter, warm summer, no dry season.

Net Floor Area : 1 923 m²
Construction/refurbishment cost : 5 078 694 €
Number of Dwelling : 19 Dwelling
Cost/m2 : 2641.03 €/m²

General information

The program includes 19 public housing and a store in the ground floor.

Functionally, the building is organized in a bottom body (ground floor) containing the corresponding use 22 @ T with dual access from the street and from Bolivia Passage Local Marqués de Santa Isabel, forecasting space for the location of an ET, and access to the main hall of the apartment building, and an upper body fragmented in section (2 floors and 5 floors) where homes are resolved. Access to the lobby defines the location of the community hall, cabinets and counters and an area for pneumatic waste collection. At the end of the lobby there are staircase and lift providing access to the upper floors of houses and to the lower floor or basement, where the technical room of the pneumatic waste collection is, there is also Districlima room (substation) and maintenance workshop or warehouse.

The proposal includes 9 properties with two double bedrooms, 5 apartments with a single bedroom and a double bedroom, 3 apartments with two double bedrooms and one single bedroom, and 2 bedroom homes adapted for disabled people.

The façade development is necessary to resolve the housing typology (medians future existentesy). Housing are organized with an inner corridor that optimizes the core of vertical communications, only one single core access is needed to get to all homes and it is located tangent to the dividing of greater height.

Despite the irregularity of the solar and the volumetric complexity demanded from planning, we choose to solve the floors through the same or regular elements to allow the use of industrialized building systems and materials.

See more details about this project

http://www.nsarquitectes.com/#!__proj-hab-12/bol%EDvia

Data reliability

Self-declared

Stakeholders

Stakeholders

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Function : Others
Joan Gurri Donada

Function : Construction Manager
Villa-Reyes, S.L.

Function : Facility manager
Aguirre Newman - Gerardo Giménez Ruiz

Function : Manufacturer
Pnel OmegaZeta

<http://panelomegazeta.com>

Contracting method

Other methods

Owner approach of sustainability

The position within the housing ensures proper sunlighting of each of the units. The optimum orientation of the housing allows solar energy during the cold seasons. It has projected an area between the housing and the outside (terrace) that generates an adjustable filter that improves the climatic conditions inside the housing. In the façade, mobile shutters and the air chamber can temper the building and ensure proper lighting control throughout the year. All homes have cross ventilation through a hybrid system that features adjustable ventilation on the front, fixed vents between rooms and vertical extraction to cover. The opaque façade of the building is a ventilated façade system. Apart from the climate system improvement achieved, the recyclability of the facade is guaranteed when the life of the building is finished (both substructure and the outer panels). The shutters sunscreens are modular and industrialized elements that were manufactured in the workshop and assembled on site. They are therefore removable and reusable elements. The roof of the building is made of a material and totally reusable system: slab Filtron. The lower deck has been resolved with a landscaped system (ecological sistemaTF) and high cover with a system for maintenance passable (TF system). The inner partitioning of dwellings and suspended ceilings are made of plasterboard. The lobby coatings are trespa and dyed DM. A heating innovative system was designed to implement the heat production with the urban network (Districlima) that reuses the energy produced by the power plant that burns waste from the city of Barcelona and surroundings.

Architectural description

The volume of the building was established by the planning. The position within the housing ensures proper sunlighting of each of the units. The optimum orientation of the housing allows solar energy during the cold seasons. It has projected an area between the housing and the outside (terrace) that generates an adjustable filter that improves the climatic conditions inside the housing. In the façade, mobile shutters and the air chamber can temper the building and ensure proper lighting control throughout the year. All homes have cross ventilation through a hybrid system that features adjustable ventilation on the front, fixed vents between rooms and vertical extraction to cover. The opaque façade of the building is a ventilated façade system. Apart from the climate system improvement achieved, the recyclability of the facade is guaranteed when the life of the building is finished (both substructure and the outer panels). The shutters sunscreens are modular and industrialized elements that were manufactured in the workshop and assembled on site. They are therefore removable and reusable elements. The roof of the building is made of a material and totally reusable system: slab Filtron. The lower deck has been resolved with a landscaped system (ecological sistemaTF) and high cover with a system for maintenance passable (TF system). The inner partitioning of dwellings and suspended ceilings are made of plasterboard. The lobby coatings are trespa and dyed DM. A heating innovative system was designed to implement the heat production with the urban network (Districlima) that reuses the energy produced by the power plant that burns waste from the city of Barcelona and surroundings.

Energy

Energy consumption

Primary energy need : 19,70 kWhpe/m².year

Primary energy need for standard building : 82,30 kWhpe/m².year

Calculation method :

Final Energy : 14,00 kWhfe/m².year

Envelope performance

Envelope U-Value : 0,32 W.m⁻².K⁻¹

More information :

Slab: The hearth interior floor is double and is formed by a floor 15 cm armed with mesh diameter 8mm every 15 cm, a thermal insulator 5 cm (XPS) and another slab of 15 cm armed with mesh diameter 8mm every 15 cm. Facade (opaque): ventilated facade solution composed of an inner lining with light drywall partition (plasterboard 46 + 13 + 13) including thermal and acoustic insulation, masonry unahoja (14 cm + Gero is proposed stucco-sided), a ventilated air chamber (partially occupied by a 4 cm layer of organic cellulose thermal insulation designed ECOMARC) i finish with an outer skin panels "omegazeta" prestressed 30 mm armor microcemento temiladas i grafitadas of 3 mm diameter mounted on galvanized tubular steel substructure every 50 cm. Facade (openings): The vacuum force is closed by aluminum frames with glass in the transparent areas and sandwich panel cladding in the opaque areas. All these elements will set on metal galvanized steel subframes 100x50x4 and Iran fixed to the lower floors (with a height adjustment system consisting of profiles "L"), to the upper floors and vertical elements resistant. The aluminum frames are sliding, sliding with upper lower fixed or hinged, depending on type. All homes feature aerators. Facade (solar protection and views) they have been designed slats or louvers fixed, as required, fixed blade, projectable of horizontal or swing axis, as appropriate, with the company TAMILUZ. Losl sets of slats are framed by lintels, jamba footropes and galvanized steel structural closing the air space of the ventilated façade and enable secure them, because they are anchored to the slab edges. These fences are resolved by bent sheet metal, hot dip galvanized, 8mm thick. The joints are welded and galvanized. There have also been corresponding expansion joints. Cover 1: The flat roof over height is solved by a trafficable inverted INTEMPER (slab "Filtron"). The layers and construction process is as follows: on the roof slab based mortar is prepared by regulation (30mm). Up one "antipunzonamente" layer (felt feltemper-300P) is installed, then an impermeable membrane Rhenofol CG Intemper and finally "slab Filtron" Intemper 90mm. Cover 2: The flat roof over height is achieved by a landscaped inverted INTEMPER (slab "Filtron"). The layers and construction process is as follows: on the roof slab based mortar is prepared by regulation (30mm). Up one antipunzonamente layer (felt feltemper-300P) is installed, then an impermeable membrane Rhenofol CG Intemper then "slab Filtron" Intemper 90mm. Finally organic vegetable substrate selected floors.

Renewables & systems

Systems

Heating system :

- Urban network

Hot water system :

- Urban network

Cooling system :

- No cooling system

Ventilation system :

- Natural ventilation

Renewable systems :

- Other, specify

Environment

GHG emissions

GHG in use : 13 852,40 KgCO₂/m²/year

Products

Product

Panel OmegaZeta

0034 93 863 40 27

<http://panelomegazeta.com>

Product category :

The ΩZ Panel is a panel of micro-mortar with two-way high-strength prestressing. This material is 100% waterproof, lightweight, high strength and fire (A-1).

The Panel ΩZ known for being versatile, modular, durable, customizable, fully recyclable and does not require maintenance.

ΩZ Panel incorporates the electro-photonic functional properties that allow it to acquire bactericidal capabilities, plus a high resistance fireproof, among others. Its application allows a considerable energy saving is a unique building and environmental protection.

This panel is based on technology and construction process developed by Circa Omega Zeta and its application in both dry work and traditional construction provides advantages to industrialized building.



Costs

Construction and exploitation costs

Total cost of the building :5 078 694 €

Urban environment

The building is located in the Can Ricart (22 @) Barcelona. It is included within the urban improvement Plan PERI UA1 Central Parc (delrecinto preservation of Can Ricart). The urban classification of the land is 22 @ T @ ground floor and 22@HS on the upper floors.

Building Environmental Quality

Building Environmental Quality

- indoor air quality and health
- comfort (visual, olfactive, thermal)
- waste management (related to activity)
- water management
- energy efficiency
- renewable energies
- integration in the land
- products and materials

Contest

Building candidate in the category



Energías renovables



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