

SANT PAU HOSPITAL'S RESEARCH INSTITUTE IN BARCELONA





Premios Cerámica Arquitectura Interiorismo





A BUILDING INTEGRATED IN SANT PAU'S HISTORICAL ENCLOSURE

The new Research Institute of Sant Pau is a building where **research and construction technology** is a component of all **architectural and construction design processes** to achieve the **maximum possible benefits** with the minimum environmental, material and economic cost.

The **9,700m2 building** has two basements, a ground floor and 3 floors, and is located on the street of Sant Quintí, between the modern *Casa de la Convalescència* and the new hospital. A large porch on the ground floor makes it a **new access to the Sant Pau site**. This porch is in the center of the building, aligned with the *Torre Vélez* street.

It has been selected as a finalist at **the MIPIM Awards 2019** as Helthcare Architecture, and at the Best Structure Award 2018 by the Associació de Consultors d'Estructures (ACE).



The façade is a ceramic translucent lattice that constantly changes throughout the day, both from the outside and from the inside of the building. It achieves the integration with the buildings of the modernist enclosure.

On the outside, the ceramic pieces have **the color of the façades of the historic building**. In the interior, **a vitrified layer has the same colors of the original pieces of the modernist domes** as a mosaic that surrounds the entire new building.

Ceramic pieces provide researchers with **privacy** and have folds that protect the building from **solar radiation**. These folds make the **polychromy** of the inner mosaic appear on the outside.

Contemporary constructive technologies achieve integration with the modernist buildings, producing effects of **transparency, color, brightness and texture**. Today we no longer have modernist artisans, but a **constructive technology** capable of producing **facades that related to the historical architecture with a contemporary attitude**.











SUSTAINABLE ARCHITECTURE AND CIRCULAR ECONOMY

The building incorporates **the most demanding contemporary parameters in terms of sustainability and circular economy.** It has obtained **the maximum energy saving**, with an energy certification A, **and the minimum environmental impact**, with the Leed Gold environmental certification.

This commitment to sustainability, already valued at the tender stage, integrates all the project decisions and the choice of each one of the building systems that make up the building:

- It is a **detachable building**. Integrated by components manufactured in workshop and assembled on site, instead of the traditional construction systems. This allows quality control, minimizes waste and energies, increases the construction safety and makes it possible to disassemble the components when necessary instead of demolition, with a recycling that can return to value the materials following the dynamics of the **circular economy**.









- It is a **convertible building**. The flexibility in adapting future use modifications is total. Each level of the building has spaces of 80x11m without pillars or lowering of services, so that it can be adapted to any change of use only by changing the distribution of partitions and screens. Therefore, it will be easy to reform in the future, which increases **the whole lifespan of the building**.





- **Reduces energy consumption** through its bioclimatic architecture. Combines good protection against solar radiation, good insulation, strong internal thermal loads and the thermal inertia of its materials. Little energy is necessary to obtain comfort. It has a system of efficient services, and a field of photovoltaic solar energy production on deck that also minimizes energy dependence, obtaining an **A energy certification**.





- **Reduces the impact of materials**. All items that don't provide a clear value have been removed. False ceilings, handrails, coatings and finishes in general are minimal to what is strictly imperative, guaranteeing and even increasing comfort and good maintenance. The materials have low environmental, economic and maintenance impact, compared to materials such as stainless steel or natural stone. Constructive elements are light (pillars, facades, partitions ...).



- **Reduces water consumption**. A tank roof system will feed decked gardens with rainwater stored just under vegetation. The tank occupies the entire deck, and has a depth of 40cm, sufficient to take advantage of all the rain that falls on the building throughout the year. Water is also used for toilet downloads. The rain tank roof also thermally and acoustically protects the building.







It is a **healthy building**, with materials with a minimum content of volatile organic compounds (VOC) that reduce indoor air pollutants. The building regenerates the air of the city, thanks to the ground-floor wall that surrounds it, which has photocatalytic particles. This system breaks up the contaminated particles emitted by rolled traffic. On the other hand, the cover of the rain tank and ceramic on deck reduces the heat island effect, reducing the temperature of the building's surroundings.







- It's an **affordable building**. The cost of the building has been 1.300€/m2, clearly on the low cost range for such a building. This is also possible thanks to its sustainable design concept.

The building is an **infrastructure** that guarantees **functional efficiency**, maximum **flexibility** of spaces, **energy consumption reduction** through its **bioclimatic architecture**, and a minimal environmental impact with **circular economy** criteria. It integrates to historical enclosure through a clearly **contemporary architecture**.

It has been the result of collaboration between PICHarchitects_Pich-Aguilera and 2BMFG Arquitectes.















INAUGURATION 2018 ADRESS CARRER DE SANT QUINTÍ 75 DEVELOPER FUNDACIÓ PRIVADA HOSPITAL DE LA SANTA CREU I SANT PAU ARCHITECTS OF THE PROJECT AND DIRECTION OF WORKS Felipe Pich-Aguilera, Teresa Batlle, Jordi París, Jordi Camps, PICHarchitects_Pich-Aguilera Carles Buxadé, Carles Gelpí, Àgata Buxadé, Ramon Ferrando, 2BMFG Arquitectes **STRUCTURE CALCULATION 2BMFG SUSTAINABILITY** PICHarchitects_Pich-Aguilera **ENGINEERING** JG Ingenieros **CONSTRUCTION ENGINEERING** Tècnics G3, Font-Grau **PROJECT MANAGEMENT** Àlex Figuera, Dídac Xifreu SECURITY AND HEALTH Elvira Altadill FOUNDATIONS Dragados **BUILDING CONSTRUCTION** Ferrovial Agroman SERVICES UTE Sogesa-Elecnor PHOTOGRAPH Aldo Amoretti

SOME INDUSTRIAL SYSTEMS APPLIED

Facade ceramic jelly FLEXBRICK

Photocatalytic wall BREINCO

Roof tank DANOSA

High resistance interior boards EQUITONE