

Project Overview

Centre Pompidou Malaga

Malaga 2015



Developer



**Ayuntamiento
de Málaga**



gerencia municipal
de urbanismo, obras
e infraestructuras

Architects:

Francisco Javier Pérez de la Fuente

Juan Antonio Marín Malavé

Site: This exhibition space is located on the corner of the Port of Malaga's docks 1 and 2. It consists of a roughly rectangular ground floor and lower ground floor.

Museum Area: 7,000 m²

i.light Surface Area: Courtyard façades measuring 253.83 m² under a glass cube

Materials: White prefabricated i.light panels with polymer insertions

Developer and Designer

The Centre Pompidou Malaga was developed by the Malaga Local Authority and designed by architects of the Malaga Local Authority Urban Planning Area.

The Malaga Local Authority Urban Planning Area, and more specifically the Architecture and Infrastructures Department, holds responsibility for most of the municipal building and civil works projects undertaken in the city of Malaga. Apart from being in charge of ensuring the guarantees and assuring the quality of the works delivered to the city's residents, the municipal area's technical experts foster innovation in building processes and materials.

FYM maintains an ongoing relationship aimed at providing support and advice to the city of Malaga's projects through its Innovation, Technical Assistance and Advisory Department. We have usually collaborated by providing innovative solutions and technical assistance on materials having new features to buildings such as the civic centre at Calle Dos Aceras (i.active mortar), La Caja Blanca (i.active GRC), the La Concepción Botanical Garden (i.pro STABEX) and the bus lanes located along Calle Hilera (i.flow PAVI) and Alameda Principal (i.active CARGO).



The Project

A versatile space was envisioned that would invite citizens to freely gain access to all relational, activity and visitor information spaces (lobby, cafeteria, gift shop, workshops, meeting rooms, etc.) which would also allow for controlled access to exhibition spaces. The design is unobtrusive and aims to generate neutral spaces aimed at encouraging viewing of the works of art displayed inside them. As regards the museum's facilities (the main aim of these works), it should be mentioned that they were designed with energy efficiency parameters very much in mind, making an effort to ensure they are not overtly perceived in the spaces. The climate control, lighting, safety, fire fighting and systems coordination standards used, among others, meet the highest possible standards for this kind of facilities.

This exhibition space is located on the corner of the Port of Malaga's docks 1 and 2. With a gross floor area of slightly more than 7,000 m², the museum is located on a privileged site under the square. It can be accessed from either Paseo de los Curas or Paseo de la Farola and features a glass cube which dominates it.



In terms of construction, it is a structure consisting of pillars and reinforced concrete slabs, forming an 8.00 x 8.00 metre grid. Two basement levels destined to a car park are located below the floors that comprise the project.

The project was carried out on two floors: the ground floor (floor 0) and the lower ground floor (floor -1). Uses are distributed by floor as follows:

- Ground floor: public access, access control, cafeteria, services, gift shop, temporary exhibition hall, educational and workshop areas, staff access and control.
- Lower ground floor: permanent collection exhibition space, multi-use hall, exhibition, conservation and restoration spaces, personnel area, services and technical spaces. A service area, storage areas and building control areas were envisioned on each floor within the communal areas.

The Architectural requirements

From the standpoint of museum design, one of the main factors to take into account is light, both natural and artificial light. Lighting should be adequate to view and render the colours of the works of art displayed. However, it should not be filtered or controlled to avoid any adverse photochemical effects. The most commonly accepted concept today is to view the museum as a neutral container for the works displayed in it, known as a "white box". Overhead lighting predominates in these spaces.

A museum also has other services like ticket offices, a cafeteria, gift shops, etc., which require stronger lighting.

The Centre Pompidou Malaga's main feature is its underground location. The only way natural light can enter it is through the symbolic glass cube located above an inner courtyard, which was dealt with as a well of natural light by the architects.

The courtyard is practically dark on the lower ground level, so as not to affect the permanent collection. On the ground floor, however, the architects' initial idea was to place glass panels and obtain the light modulation level required through a system of wooden slats. This space is visible from the outside through the cube, as well as from the inside due to a glass balcony designed to offer views of the courtyard and Mount Gibralfaro.

The glass panels were initially designed to be placed in this area measuring more than 250 m², and it is where the light envelope was finally placed.



On the use of i.light

The use of i.light around the inner courtyard is a solution that allows the following:

- 1.- Its use as an indoor/outdoor envelope.
- 2.- The entrance of filtered natural light to the museum's entrance and ancillary services.
- 3.- An aesthetically uniform envelope and a transition element between the dark courtyard on the lower ground level and the glass cube.
- 4.- A reduction in rises of temperature due to radiation through the envelope.
- 5.- The use of an innovative product in keeping with the values set out by the Centre Pompidou as an organisation.

i.light Panels

The Italian company Kenius was chosen by FYM-Italcementi to manufacture and assemble the i.light panels.

The first step consisted of dividing up the walls. In conjunction with the architects, a decision was taken to divide the courtyard perimeter into elements measuring 120 cm wide at two heights: elements which were flush with the underside of the balcony and those above it up to the false ceiling above. This resulted in a total of 48 panels measuring 203 cm high (175 kg) and 48 measuring 284 cm high (250 Kg). Nine special panels were also designed to close off the corners and glazed areas. These panels are 3 cm thick and made with the Italcementi Group's new CTG technology. At the time, they were the largest i.light panels ever made.

The approximate cost of the panels and their shipping to Malaga amounted to around €100,000.

The i.light panels arrived by lorry from Italy on 26 January in specially made wood packaging.

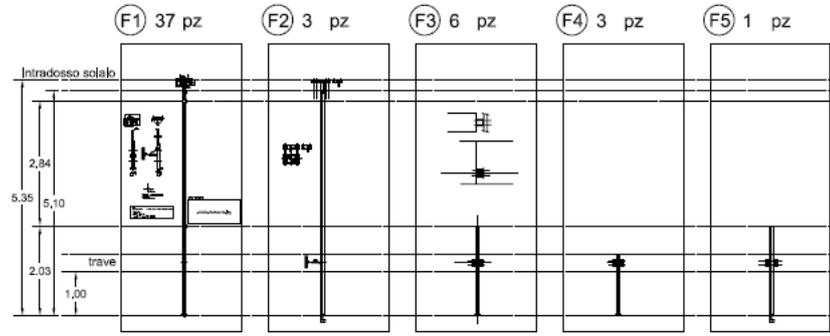
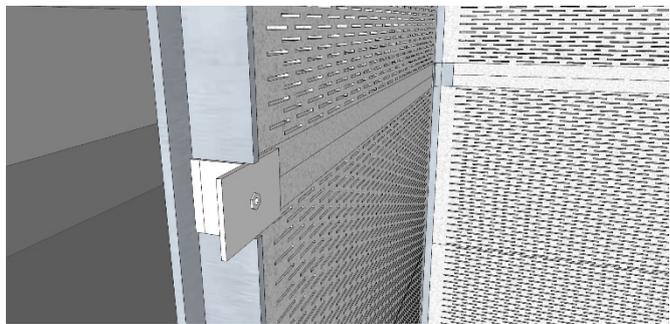
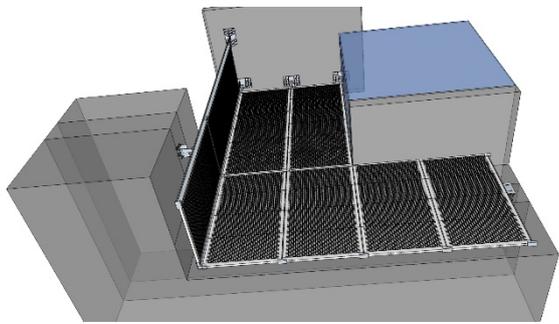
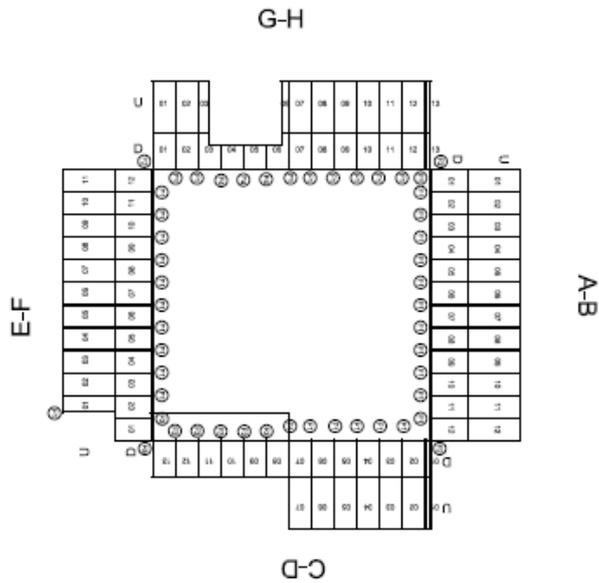


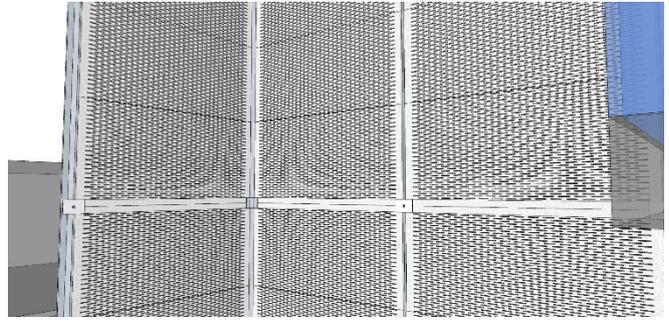
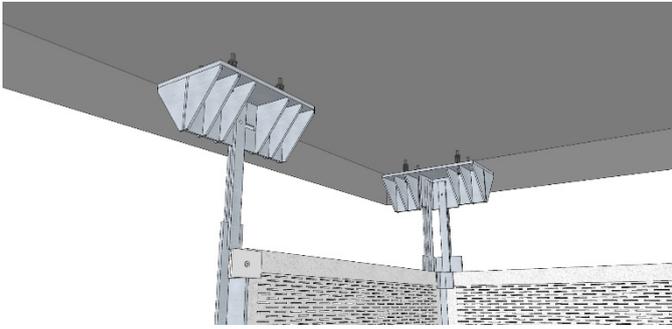
i.light Panel Support Structure

The second step consisted of designing a structure capable of bearing the panels' weight with the lowest possible aesthetic impact. A decision was finally taken to hook up the load-bearing panels onto the upper slab flooring. Some rigid supports were chemically and mechanically affixed onto this concrete slab flooring. From these supports, steel T-elements hang, the wings of which were used to bear the panels vertically. The lower parts of these panels have a profiled bar which bears the lower panels. The larger upper panels are borne by these parts. Every fourth panel was affixed onto the core of the T-elements by plates. Kenius sent the structure's definitive design and an expanded view to the manufacturer on 15 January.

A highly important aspect is precision in the structure's anchoring and assembly to coincide with the i.light panels, since an error in the structure's position could lead to serious problems during assembly. That is why Kenius supervised the structural support's installation before the panels were assembled. **Sider-Ronda was the company in charge of the structure's execution and assembly, which cost around €19,000 and was completed in five days.**







Assembly of the Panels

The i.light panels were assembled once the structure had been installed. It was done by the company Tomasi (subcontracted by Kenius), which brought special equipment to grip and turn the panels (the panels are mounted vertically, but they were piled up horizontally for shipping). Other ancillary machinery was supplied by local companies and included a self-propelled diesel platform and a Manitou rotating telehandler.

The assembly was carried out in four days with two shifts a day from 8:00 a.m. to 7:00 p.m. Damaged panels were subsequently repaired with a white cement slurry, cleaned with citric acid and sealed onto the frame with neutral white silicone and the spaces between panels were sealed with neutral translucent silicone.

Assembling the panels cost around €21,500.





Conclusion

The use of i.light panels has provided a satisfactory and innovative solution for the project's constraints, which has met with the designers' approval.

i.light constitutes a new and fascinating way of designing with light. Amazing effects can be created with i.light, ranging from transparency to shade, which can completely transform the look of a room with natural or artificial lighting. Light has always been one of nature's most incredible phenomena. Today we can gather it and shape it as never before.



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