

# Emperador Carlos V 10

Consolidation - Refurbishment - Suppression of Architectural Barriers - Roof Replacement

This building located right at the roundabout of Emperor Carlos V 10, with a view to the Atocha Train Station and close to the National Museum of Art Reina Sofía and the Royal Botanical Garden, is under partial protection (facade and staircase).

Built in 1915, it has a total surface of 1900 m<sup>2</sup> and its structure is composed of a wooden framework with filling out of bricks and one-way floors with wooden joists.

Taking into account that the sewage tunnel passing through the central axis of the building was partially collapsed and that for the works of the sidewalk paving heavy machines have been used, the central walls charging this area threatened to collapse. The adopted solution was to place metal bridges, with a new foundation, shoring up the affected walls and discharging the central axis where the tunnel is located. The next step of the process was to repair all the horizontal sewage system of the building.

In the first load-bearing wall parallel to the facade, numerous openings have been made affecting the transmission of loads to the framework. It was decided to place there some metallic frames which unlike the porches, allow not only creating openings in the framework but also distribute the loads in a linear way. The bottom part of the frame is hidden under the floor.

On the rooftop, the wooden rafters in poor condition were replaced and a new insulated roof was placed that improved the energy performance of the building. On the interior part of the building, a flat roof was placed intended for future installation of air conditioning systems. In the area below, which is intended for storage rooms, light tubes were placed that allow natural lighting during the day even though there are no windows.

In order to improve the accessibility of the apartments, a lift, suitable for people with disabilities, was placed in one of the patios.

With the overall operation that has been carried out, the building was improved to meet the current standards and its habitability was enhanced.

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