



Hipercor Arroyosur Shopping Centre

Leganés, Madrid, Spain / 2006

Structural type
Owner
Client
Scope
Architect

solid slab, hollow -core slab and steel structure
El Corte Inglés
El Corte Inglés
detailed design and construction support
Luis Rojo/ Pablo Muñoz (El Corte Inglés)



This building, designed as a shopping centre, is located on plot T1 in sector PP7 of the P.A.U. Arroyo Culebro in Leganes. The architectural design has been fulfilled by Luis Rojo Architect's Studio.

The building consists of two modules: A main unit which houses two parking levels, the hypermarket and two shopping outlet storeys and the other unit, which is connected to the first on the eastern façade, in which two levels of parking are housed.

The main building's floor has side lengths of around 184.0m and is practically square in shape. The building has three floors below grade (basement two, basement one and a semi-basement floor), ground floor which is at grade level and three floors above ground level (first, second and roof).

In the second module the Basement 1 floor has rectangular plan dimensions of 56x152m² and the semi-basement floor has rectangular floor dimensions of 153x45m².

A structural peculiarity to be highlighted is the absence of joints. In this sense, this structure follows the general philosophy advocated by FHECOR to offer joint-free solutions in its designs. This philosophy supposes approaching the problem of imposed deformations in the calculations, with which you may obtain, with minimal cost, a significant improvement in the functionality and durability of the structures in hand.

The structural solution adopted for the foundation unit in the main module is a solid slab with depths varying between 1.0m and 1.3m. The slab is divided into longitudinal strips to allow the pass of drainage. The second module, which has lower loads, employs isolated footings.

The structural slab type employed in the car park floor, which has an 8.0m x 8.0m grid column layout, is a 0.30m deep solid slab. On the ground floor, with an 8.0m x 8.0m grid layout, the depths vary depending upon the loads which act in the different areas, therefore: 0.30m for the shopping outlet area, 0.32m for the hypermarket and 0.35m for the warehouse area.

On Floors One and Two, where one of each two columns from the lower floors is maintained, an 11.30m x 11.30m grid layout is obtained. These floors employ a 0.37m deep solid slab.

The roof level structure is fulfilled with large variable-depth reinforced concrete beams which allow the roof area to be divided into horizontal and sloped surfaces. The roof slab employs hollow planks, with a concrete compression layer, which offers continuity between the planks.

On the external perimeter of the main module, there is an emergency gangway located on each floor. These are designed with steel profiles which also permit the support of the glass and steel-plate panels which cover the façade.

Also, on the second floor and roof levels, pre-tensed 2.0m deep reinforced pre-fab beams have been placed with spans varying between 8.0m and 32.0m.



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