



Car park Building for the City of Justice

Valdebebas, Madrid, Spain / 2007

Structural type
Owner
Client
Scope
Architect

25cm deep concrete slabs with spans
Comunidad de Madrid
Grupo Isolux Corvian
detailed design
Vidal & Asociados y Richard Rogers Asociados



The building is conceived as a car park in its basements and upper floors. On the ground floor, there is a large and visibly significant area for commercial activities and another area for entry and distribution of the vehicles of the car park towards the upper plants and the basements. The plan of the whole building is circular with a diameter of approximately 80.00m.

A single structural typology has been used for all floors. It consists of H25 reinforced concrete slabs, with maximum spans of approximately 8.00m x 7.00m and 0.25m in depth. This solution offers great architectonic purity, an ideal structure and economic efficiency. The structure is homogenous throughout the whole building without the need for a special structure for the commercial area, as there is sufficient space which allows the distribution of columns on the upper floors and the basements to be maintained.

A large circular wall in the central area of the building is used for lighting and ventilation and a series of columns placed on its circumference, between every two or three bays, has been used as upright supporting elements.

The interior wall offers great transversal stiffness as it has to withstand all horizontal forces, wind loads and others derived from the column arrangement.

The columns are made of H35 reinforced concrete. They are trapezoidal in shaped, hence minimizing space occupied and favoring parking maneuvers. All columns are continuous from the foundation base up to the last floor.

The ramps, which have a corkscrew form, are always located in the same area of the floor but may change their positioning. This means, at times, in the ramp areas there may be car bays and other times ramps.

The terrain, from a geotechnical point of view, is of a good nature, and therefore direct foundations consisting of isolated H25 concrete footings have been projected.

An element to be highlighted is the façade of the structure. The façade, due to ventilation reasons, has to be set away from the border of the slab, and for security reasons must be opaque, at least in an important area of the car-park area. For this reason, the solution adopted has been an opaque textile façade.

This solution was presented to contest and was won regarding the execution of the car park construction project.



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