

External view building

## Javalambre Mixed day Center

Vallecas Brigde district, Madrid

CLIENT	<b>EAU Javier Fuster Architecture</b>
PROJECT DATE	<b>2008</b>
LOCATION	<b>Madrid, Spain</b>
FIELD OF ACTION	<b>Construction project</b>

Madrid's City Council has built a mixed day Center on Sierra de Javalambre Street (Puente de Vallecas district). The structure project implementation and the foundations were commissioned to INES Consultant Engineers.

The mixed day Center on Sierra de Javalambre Street consists of a basement, a ground floor, three intermediate floors, an attic and a small caisson/jacket for technical facilities. The plot on which the building stands is an irregular polygon of six sides and has a total surface of 421 m<sup>2</sup>. The building adjoins, on the south side, with an existing building and on the east side, with a free for public use plot. At the start of the construction works, the plot had a general downward slope from the east to the west.

### Structure description

All the pillars are rectangular and of reinforced concrete. They are born in the foundation walls and its steel reinforcements are embedded in the basement wall, which is also of reinforced concrete. Some pillars are born in higher levels and some die before reaching the towers floor. The foundation of the central pillars and of the retaining walls that are the structures cores, have been solved with isolated footings. The footings of the two cores merge with the strip footing with which the foundation of the basement walls was solved.

For the structure horizontal elements a solution of massive concrete 25 cm thick slabs has been adopted.

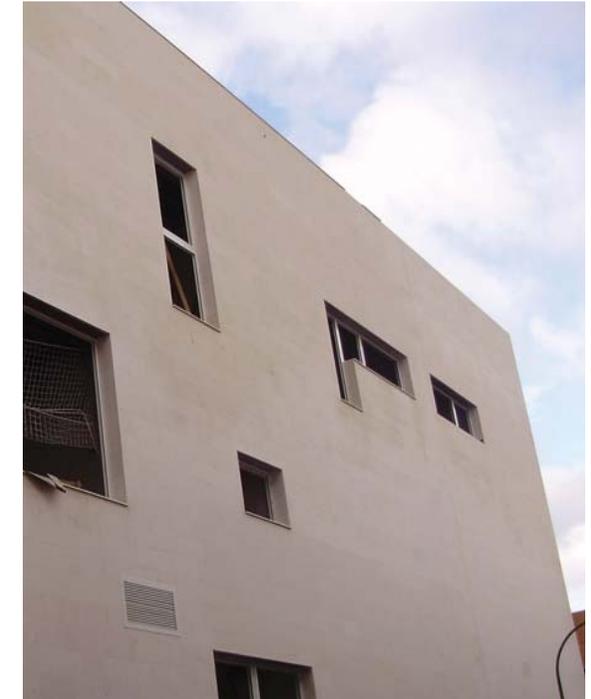
There is a metal structure to hold the air-conditioning system and allow the direct transmission of the vibrations to the columns without affecting the deck slab. The structure consists of two main HEB-200 beams mechanically anchored on two pillars each so it constitutes a simple support. These beams are supported by other two metal IPE-200 profiles (with 1 m distance between them, which is the distance between the two linear supports of the air-conditioning system) that hold the machine.

In addition, a meter above the deck level, there is a small concrete slab held by four



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pillars (two of them born in the same housing) that closes the facilities gap behind the lift core. Also on deck, taking advantage of the existing slab that covers the stairs (tower floor) and the presence of perimeter walls around the entire deck, the same tower slab has been extended to constitute a room where to locate the boiler.

The basement slab is solved with a 20 cm thick reinforced concrete support resting on a layer of natural compacted material with a 95% Standard Proctor energy contribution and 50 cm minimum thickness.