

D31 CAROSELLO EXTENSION SHOPPING CENTER- CARUGATE

The extension features a new building of approximately 18.000 sqm, an underground parking of 30.000 sqm and a surface parking (over structure) of 12.000 sqm. Many important transformations of the existing shopping center are also part of the project, with complete substitution of the existing structures.

The main new building is a composite system structure:

- From level -4,5 to level 0,00 (underground parking) the structure is made of precast prestressed elements. The whole prefabricated system has been designed from scratch for the specific use in this project, taking into account the stringent architectural and functional requirements. The structural grid is 16 x 8 m, and the superimposed live loads are 10,0 kN/sqm for the commercial and heavy circulation areas and 6,0 kN/sqm for the normal parking area.
- Above level 0,00 a composite steel and concrete structure is used, over a structural grid of 16 x 16 m. The building features a curved sloped green roof, and very slender steel columns that allow for the maximum space flexibility. In the main concourse area there are some special spans up to 32 m. Many cone-shaped skylights, based on a steel structure, puncture the roof to allow for natural lighting.

The transformation areas inside the existing building (basically made of off-the-shelf prefabricated elements) includes partial and total demolitions and substitution of the existing structures with steel and composite systems. The interface between old and new structures needed careful studies and a high degree of fine detailing and work supervision.

The foundation system is based on direct foundations, while some very important retaining works (micropiles) had to be done along the side of the existing building where the excavations for foundations and underground parking was extended at -6,5 m below grade.

- Client: Eurocommercial Properties
- Architect: DunnettCraven – London; One Works, Milano.
- Construction firm: CESI
- Construction year: 2007-2008, opened to public November 2008
- Price of the structures: 13.000.000 €
- Activities supplied: complete design from preliminary to final detailed design, works supervision (structures)



