



Engineering Structures for Life



BUILDINGS - URBANISM

Urbanization of Quinta da Portela

ABOUT

The Urbanization of Quinta da Portela consists on a residential complex located in Coimbra, with an implantation area of approximately 700,000 m² and a gross construction area of 285,000 m².

This urbanization extends to the east the urban fabric that structures the Campus II of the University of Coimbra and was designed with the purpose of creating 2,000 new apartments.

Originally designed at the beginning of the nineties, this urbanization retakes the concept of "street-corridor" in which the building fronts constitute the separation between the public space and private lots (blocks).

The use of some of the blocks as private condominiums promoted a more private use of the gardens, without isolating the surrounding houses from the city. These condominiums are designed as urban blocks, with doors that open onto the street, inner gardens and street-level shops.

The buildings comprise two or three underground floors for parking and commerce, six upper floors for housing and a non-accessible roof. The foundations and underground floors required an excavation depth of 11 m.

FACTS

Year: 2005-2007

Client: Arch. Camilo Cortesão

Services: Detailed design, Structural Engineering, Foundations design, Infrastructures design, Ground support and earth retaining structures, Roadway design

TEAM

José Vaz Pinto

Luís Gonçalves

LOCATION

Coimbra, Portugal

Structural and geotechnical solutions

The solutions adopted for the earth retaining structures consisted of a reinforced concrete pile walls with

temporary anchors levels, which will be, at the final stage, substituted in its function, by slabs.

The structures are mostly constituted by waffle slabs FERCA-type supported by reinforced concrete columns.

The foreseen rock mass drainage is based in vertical drains, with high-density polyethylene pipes, involved by geotextiles, associated with a drainage screen.

Due to height and extension of the earth retaining wall, it was necessary to proceed with site instrumentation/observation, in order to inquire structure displacements that could occur throughout its execution, and allow its comparison with the waited behaviour, in accordance with the automatic calculation models.





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