



Engineering Structures for Life



BUILDINGS - RESIDENTIAL

Porta do Parque Building

ABOUT

Porta do Parque is a residential building formed by two underground floors, for car parking, one half underground floor (hall) and five elevated floors, each one with six apartments (1.125 m² each floor).

Geotechnical solution

In terms of earth retaining structure, a vertical tie-back anchored retaining wall was defined taking into account the existence of buildings and a roadway in the periphery, limiting then the adoption of a non-supported excavation (slopes). The maximum excavation depth is around 10m, requiring three levels of temporary pre-stressed anchors during construction phases. The anchors are then replaced by the RC slabs of the underground floors upon anchors deactivation.

Structural solution

Economic studies for different types of solutions were performed and it was concluded that the most cost-effective solution was to have a slab reinforced in one-way, supported by beams. Due to architectural constraints, the implemented structural solution is formed by a complex grid of beams and piers, with indirect supports and beams with openings.

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FACTS

Year: 2009-2011

Client: MVentura & Partners

Services: Detailed design, Structural Engineering, Foundations design, Geological and geotechnical studies, Consulting and on-site technical support

TEAM

Raquel Campos e Matos

LOCATION

Porto, Portugal

