



TRANSPORTS - TUNNELS

Gondomar Tunnel on line C of Metro of Porto

ABOUT

The Gondomar Tunnel, in the extension of Metro of Porto – Line C, is a 900 m long double-track tunnel, which connects the town of Gondomar, located in the east of Porto, to the existent metro network. The tunnel passes with shallow overburden through granites and schist's weathered to various degrees.

Geotechnical solution

The excavation was processed by the NATM method and the applied support consists of a combination of reinforced shotcrete lining, bolts, lattice girders and forepoling.

This tunnel is located in a sensitive urban environment. Tunnelling under two railway lines and beneath a shopping centre represented the main challenges for this project.

In the Design phase, GEG developed the geological and geotechnical studies as well as the detailed designs of the mined tunnel, cut & cover tunnel, ventilation shaft, portals and other underground structures, such as the structure built in the intersection with *Parque Nascente* Shopping Centre.

In the Construction phase, GEG granted permanent on-site support concerning NATM tunnelling and underground works as well as a complete geological and geotechnical mapping of the tunnelling headings during the excavation stage. Such tasks were performed by a

FACTS

Year: 2003/2009-2010

Client: Metro do Porto

Services: Detailed design, Structural Engineering, Light rail and Metro design, Tunnel Design and Engineering, Geotechnical Engineering, Railway geotechnics, Geological and geotechnical studies, Ground support and earth retaining structures, Consulting and on-site technical support

TEAM

Sérgio Cunha

Mário Durão

Raquel Pais

LOCATION

Porto, Portugal

resident team of two engineers and two geologists that provided the on-site support during the period of 13 months of tunnel excavation.

This project is part of the second phase of the expansion of Metro of Porto. GEG has been involved in some projects for Metro of Porto since 2001 and is recently cooperating with the Client in the studies for the next phase, developing several projects for stations, tunnels, tracks as well as geological and geotechnical studies.

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