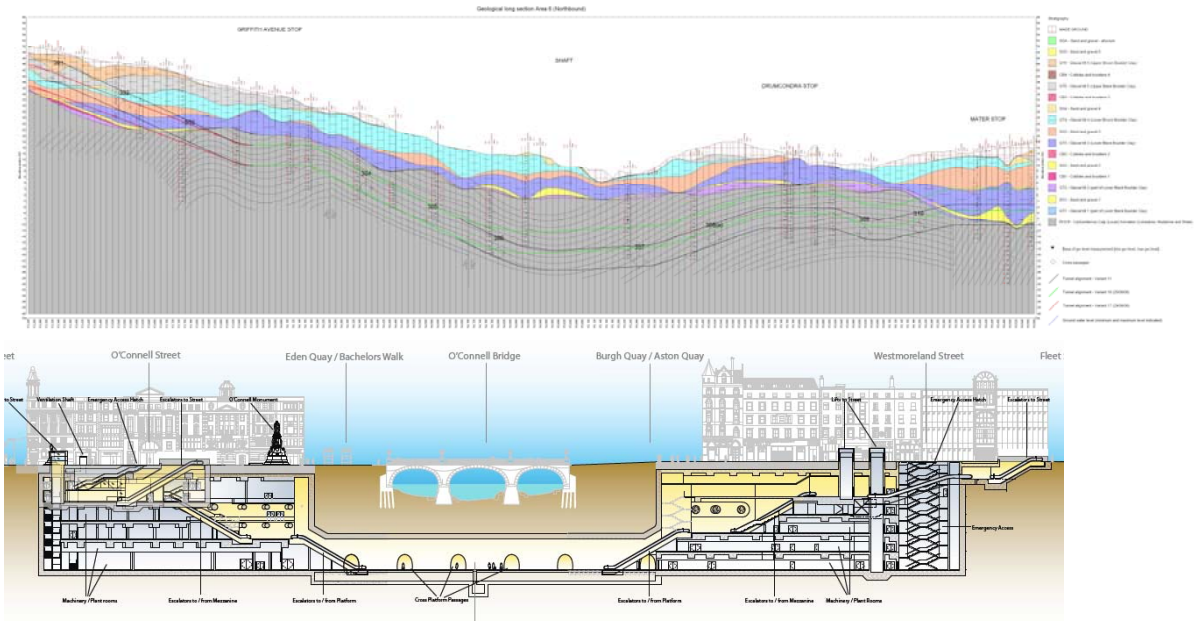
Project identification

Metro Dublin North – Ireland: Tender design for DBMFO contract

Type of project
Consultancy



Client
(Infra)consortium Dublin Express Link (DEL) Bouygues Grand Projets TP (France), Acciona (Spain) , SIAC (Ireland), Alstom (France), Keolis, Egis rail, HSBC (financing) and Grimshaw (UK) / RKD (Ir) as architects.

In co-operation with
High Point Rendel (London) en PhMcCarthy (Dublin)

Project assignment
The construction of geological long sections along the entire alignment on the basis of about 400 soil and rock borings. Compilation of a geotechnical interpretative report. Preliminary design of TBM alignment and tunnel cross section. Geotechnical/structural design of 5 deep subsurface stations. Settlement Risk assessment studies. Advise on TBM type and mitigating measures.

Country
Ireland

Location
Dublin

Project duration
2008-2009

Project phase
Tender Design

Construction cost
not disclosed
(excl. VAT)

Consultancy fee
EUR 350.000,-
(excl. VAT)

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Project description

This project was a tender design for DBMFO contract for an 18 km long metro line from Dublin Airport to the heart of Dublin City center. About half the distance was planned to be underground in two separate bored tunnels. Next to the twin bored (app. 7 m OD) tunnels 7 deep subsurface stations were planned to be executed. The geology of Dublin consists of glacial till deposits overlying Carboniferous bedrock consisting mainly of limestone and shales. The Carboniferous rocks are heavily folded, faulted and jointed. The bedrock level is also strongly undulating. The tunnels and stations were to be constructed largely within the Carboniferous bedrock.

Scope of work

- The construction of geological long sections along the entire alignment on the basis of about 400 soil and rock borings.
- Compilation of a geotechnical interpretative report.
- Preliminary design of TBM alignment and tunnel cross section including preliminary lining design. Review of contractors design.
- Design of alternative design of additional 1,5 km of bored tunnels.
- Advise on TBM type in geological conditions varying from silt to coarse sand to Carboniferous rock.
- Geotechnical and Structural design of 5 deep subsurface stations (St. Stephens Green, Parnell Square, Griffith Avenue, Matter, Drumcondra, Airport) within the inner city of Dublin.
- Settlement Risk Assessment studies along the whole underground route of the bored tunnel and along the deep stations.
- Advise on the implementation of mitigation measures such as permeation grouting, jet-grouting and compensation grouting.