

Project Dossier



PROJECT DOSSIER

DEIRA WATERFRONT DEVELOPMENT PLOT-03

PROJECT OVERVIEW

The Plot-03 project comprise of construction of 4 residential, office and hotel towers ranging in height from 11 to 13 floors as part of the new Deira Waterfront Development, Deira, Dubai.

Deira Waterfront Development encompasses an expansion of the urban fabric to the existing Deira community. It is one of the most important development projects and involves construction of a number of new plazas, mixed use buildings and green open spaces. Phase 1 of the project includes development of almost 30 plots along the waterfront, each plot having its own development and design. Plot-03 is one of such plot. Existing Dubai Metro facilities were in close vicinity of the Plot-03 edge – Palm Deira Metro Station at ~30 m and metro tunnel at ~50 m distance. The Construction works for plot development included installation of temporary shoring system before site excavation & dewatering using tied back Secant pile wall system.

Thus, it was important that during the construction period, monitoring of the response of ground, shoring wall & groundwater was carried out to ensure safety and durability of the existing metro infrastructure.

Project	Plot-03 Deira Waterfront Development
Location	Dubai, UAE
Client	Deira Waterfront Development L.L.C / Investment Corporation of Dubai
Contractor	Dutch Foundation & Ssangyong - Trojan JV
Consultants	AE7
Duration	October 2015 till date



Monitoring solution

The purpose of the instrumentation and monitoring was to monitor effects of proposed shoring wall, excavation, dewatering and piling works on the adjacent existing metro station and tunnel.

To ensure that the project proceeds safely it was also important to monitor response of ground and groundwater during construction period.

Turnkey services

Encardio-rite scope of works included:

- Supply and Installation of geotechnical and geodetic instruments
- Online monitoring of critical parameters and areas
- Manual monitoring of geotechnical instruments
- Surveying
- Daily & weekly reporting with evaluation & interpretations

Monitoring reports were also submitted combined for geotechnical and geodetic monitoring data on daily and weekly basis. Monitoring reports included interpretations of variations observed in instrument data with respect to the construction progress in the respective area.



INSTRUMENT USED

Excavation works and ground monitoring

- **In-place inclinometer:** To monitor lateral movement and deformation of earth works and shoring wall
- **Inclinometer:** To monitor lateral movement and deflection of soil between construction area and tunnel
- **Anchor load cell:** To monitor force in ground anchor
- **Magnetic extensometer:** To monitor sub-surface settlement
- **Standpipe piezometer:** To monitor water level/drawdown during construction
- **Surface settlement point:** To monitor settlement and deformation of ground surface
- **Prism target:** To monitor displacements and deformations on shoring walls

Existing metro tunnel monitoring

- **Surface settlement point:** To monitor settlement and deformation of ground surface
- **Standpipe piezometer:** To monitor water level/drawdown during construction within excavation area

Online monitoring was done for geotechnical sensors that were critical using advanced automatic dataloggers and data acquisition systems.

Monitored data (automatic as well as manual) was available online through our web based data management



system to the Contractor, Client as well as the Consultant on their desktops.



TUNNELS



HYDROELECTRIC



CONSTRUCTION



STRUCTURAL



METRO & RAIL



BRIDGES



MINING