

# Project Dossier



PROJECT DOSSIER

## NDM TUNNEL

### PROJECT OVERVIEW

NDM tunneling for storm water pipeline under Corniche road was a part of Upgrading Al Salam Street (Sheikh Zayed) Tunnel Project (Eastern Corniche Road Contract 1). The work included micro-tunneling for DN 1800 mm ID, 56 m long storm water drainage tunnel. The tunnel was to be made 4 m below ground level under the busy Corniche Road

As per the soil investigation report, soil at tunneling depth was silty, medium dense sand-poorly graded sand. Above the pipeline soil was very loose sand that could exhibit settlement when disturbed. Stabilizing and supporting the soil was important to reduce consolidation and subsidence. Prior to tunneling work soil above the tunnel was stabilized by fore-poling method to minimize the ground impact and settlement of the road due to tunneling.

<b>Project</b>	<b>NDM tunneling for DN1800 HDPE storm water pipeline under Corniche road</b>
<b>Location</b>	Abu Dhabi, UAE
<b>Client</b>	Department of Municipalities & Agriculture (DMA)
<b>Contractor</b>	Samsung – Saif Bin DarwishJV
<b>Consultants</b>	Parsons International
<b>Duration</b>	2011



## Monitoring solution

Encardio-rite was awarded the I&M sub-contract for the complete monitoring solutions. Continuous monitoring played an important role during tunneling as it was being done in silty soil, just 4 m below a busy road. Monitoring plan included instrumentation around the driving and receiving pits of the micro-tunneling jacking machine. Instruments were also installed in the monitoring arrays across the tunnel alignment.

### Turnkey services

- Supply of geotechnical instruments
- Installation of geotechnical instruments including the drilling works
- Monitoring
- Optical Surveying
- Daily & weekly reporting with evaluation & interpretation



## INSTRUMENT USED

- **Inclinometer:** To monitor lateral subsurface movement around pits
- **Piezometer:** To monitor ground water pressure around pit excavation
- **Borehole extensometer:** Installed with packer anchors to monitor subsurface settlement
- **Earth pressure cell:** To monitor earth pressure during pit excavation
- **Surface settlement points:** Installed in road and median to monitor surface settlement during tunneling



Monitoring and surveying was scheduled at every 2 hours 24 x 7 during excavation and tunneling works. As the monitoring and surveying was being done on and around the busy road, it was scheduled precisely to meet the tunneling works; adhering to the permitted time frames from Authorities. The teams worked in shifts 24 x 7 to meet the challenging demands of the Project.



TUNNELS



HYDROELECTRIC



CONSTRUCTION



STRUCTURAL



METRO & RAIL



BRIDGES



MINING