



Crossrail C511 Whitechapel Station, UK



PROJECT SUMMARY

NAME: C511 Whitechapel Station

Advance Works Piling & Diaphragm Wall - Durward Street shaft

YEAR: Autumn-Winter 2011

CLIENT: Crossrail

MAIN CONTRACTOR: BAM Nuttall/Kier JV

CONSULTANT: Ove Arup & Partners Int Ltd



OVERVIEW

Crossrail will deliver a high frequency, high-capacity service to 37 stations linking Maidenhead and Heathrow in the west, to Shenfield and Abbey Wood in the east via 21 km of new twin-bore tunnels under central London. It will bring an additional 1.5 million people within 45 minutes commuting distance of London's key business districts.

Advanced station works are currently being carried out for the Whitechapel Station as part of the Crossrail project. The advanced works for the shaft in Durward Street involves installing a diaphragm wall in a very confined area located over the London Overground, next to Swanlea School.

MONITORING

Due to the close proximity of existing buildings and the London Overground, extensive monitoring is required under Crossrail document CR-STD-303-11 Instrumentation & Monitoring.

Monitoring is required as part of Asset Protection as well as design validation and construction safety. As part of the first phase of monitoring a series of borehole rod extensometers and inclinometers have been installed prior to the diaphragm guide walls being installed.

Future instrumentation to be installed includes In-place inclinometers, VW piezometers, VW strain gauges and a data logging system.

PRODUCTS USED

Borehole extensometer

The Geosense® GEO-XB rod type extensometer range used to measure and locate settlement, displacement and deformation in soil around the excavation.

Inclinometer casing

Used in combination with the portable vertical inclinometer.

Portable MEMS inclinometer

Used to measure lateral displacement of ground.

VW 2106 readout

Measures all types of vibrating wire.