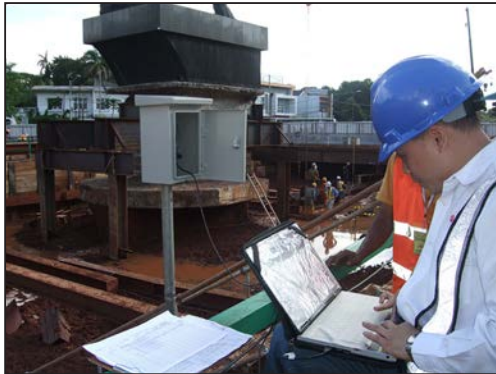




Jakarta Mass Rapid Rail Transport, Phase 1, CP104/5 Jakarta, Indonesia



PROJECT SUMMARY

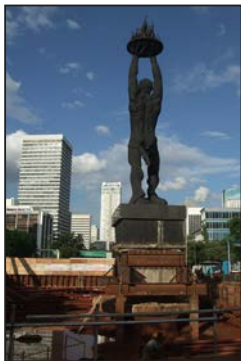
PROJECT NAME: Jakarta Mass Rapid Rail Transport – Phase 1 – CP104/5

PROJECT DATE: 2015-17

CONTRACTOR : SOWJ Joint Venture

CONSULTANT: Mott MacDonald

INSTRUMENTATION SPECIALIST: PT Sarana Jaya



OVERVIEW

The CP104 and CP105 construction sections include a total of 3.89 kms of 6.05m twin tube tunnelling, four underground stations - Senayan, Istora, Bendungan Hilir, and Setiabudi - and a cut-and-cover transition structure of almost 500m in length to connect the below and above ground sections.

Two special challenges were posed by this project: It was Indonesia's first shield tunnel construction and the construction of underground stations using the cut-and-cover and top-down method on Sudirman Street, a major street consisting of 12 lanes.

Diaphragm walls were installed to form the station boxes followed by excavation and construction of the slabs from roof downwards as excavation progressed.

Entrances and ventilation shafts were constructed using bottom up construction method and steel struts and walers used to prop open the excavation.

MONITORING

Monitoring included:

Soldier piles

Inclinometer casing behind soldier piles for manual inclinometer surveys and monitor ground deflections.

Internal struts

VW Strain gauges were installed on the internal struts to monitor strain.

D-Walls

VW Sister Bar strain gauges were installed in the steel cages.

Line of tunnel

Automatic VW Borehole Rod Extensometers and manual Magnetic Extensometers to monitor settlements. VW piezometers to monitor pore water pressures.

Tunnel segment Lining

Total Pressure cells to monitor external pressures

Data acquisition

Multi-sensor stand-alone loggers together with manual readouts

PRODUCTS USED

VWP-3000 Standard piezometer

VW Sister Bars

VW Strain Gauges

VW Borehole Rod Extensometers

Magnetic Extensometers

XC Inclinometer Casing

Total Pressure Cells

Stand-alone data logger

Manual Readout