

Widening of Tolo Highway Hong Kong - CHINA

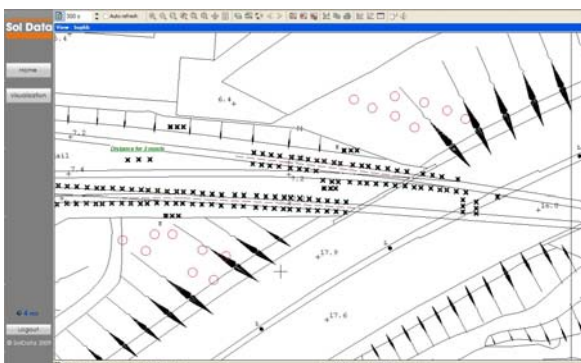
Deformation monitoring of MTRC East Rail with CYCLOPS, and monitoring of intrusion into its area with Intrusion System using GEOSCOPE WEB during foundation works

Tolo Highway is a major expressway on Route 9 in Hong Kong. It connects the new towns of Sha Tin and Tai Po in the eastern New Territories. To alleviate the traffic congestion problem in the area, widening of the Tolo Highway from existing dual 3-lane to dual 4-lane carriageway for one major section of about 3km long was proposed.

The main works requires construction of a road bridge and its supporting foundation that are above and at the immediate vicinity of the existing MTRC East Rail. In view of this, automatic deformation monitoring system (ADMS) was devised for the Client to provide real time monitoring to prevent any disruptive events due to the main works, and any natural and site changes that may compromise the safety of the operating railway.

The ADMS, based on our CYCLOPS architecture, is used to monitor the deformation of the at-grade rail tracks and overhead line masts that are vulnerable to the interaction between construction works, soils and ground water.

Apart from the geotechnical concerns, the safe operation of the railway will be affected as well if there is any trespassing at height on the MTRC's area. An intrusion system was therefore devised for perimeter protection. This is to ensure that no trespassing will be possible for rigs for foundation works operating right next to the perimeter fence of the East Rail.



OWNER : • MTRC
MAIN CONTRACTOR: • China State Construction Engineering (Hong Kong) Ltd.

DATE OF WORKS : • Approx. 3 years starting from July 2010

WORK DONE:

- 2 CYCLOPS to monitor approx. 160 target prisms
- 1 Intrusion system to monitor any intrusion into MTRC's area of the existing East Rail
- Real time data acquisition, visualization, reporting, and alert message dispatching via internet on GEOSCOPE WEB