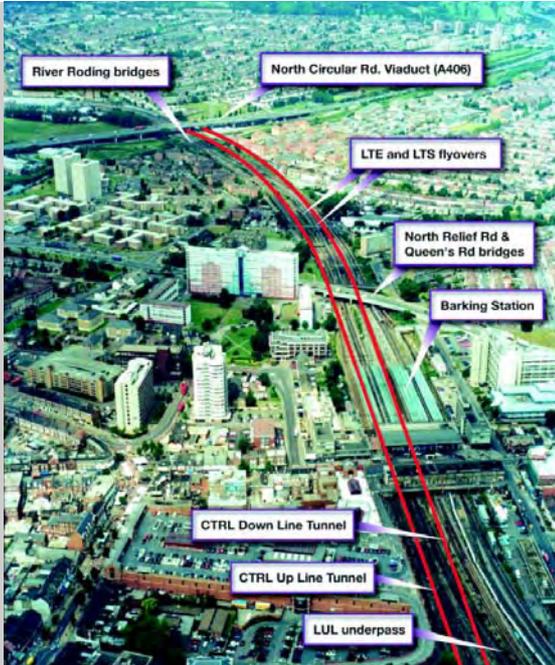


Leica Geosystems **TruStory**

Rail Monitoring, CTRL250, East London, UK



Nuttall, Wayss, Freytag and Kier JV, main contractor for the Channel Tunnel Rail Link Contract 250, had to give assurances to Network Rail and London Underground Ltd that their tunnelling activities would not jeopardise the existing rail infrastructure. This was particularly important through the strategic rail complex at Barking, which is in operation 24 hours a day. A number of different methodologies were considered, but following the success of the Bridge Jacking exercise, at Renwick Road, using Leica GeoMoS and Leica TCA2003s, they decided to employ similar techniques for the last 1.4km of the TBM drive.

A rolling program of instrument installations on pillars running alongside the existing surface railways was employed in order to establish base readings prior to the passing of the Tunnel Boring Machines underneath. Two Leica GeoMoS installations were operated controlling, an assortment of motorised Total Stations with Auto Target Recognition. Communications were provided by both TCPS26 and Pacific Crest PDL modems, the latter being used where increased range was required.

SQL query statements were used to extract data from the GeoMoS database and a series of macros within MicroSoft Excel were used to display trends graphically for analysis.

■ Company

Nuttall, Wayss, Freytag and Kier Joint Venture - CTRL Contract 250

■ Challenge

Monitor a live rail complex during tunnel construction

■ Date

Installation November 2003

■ Location



■ Project Summary

Instruments

Leica TPS1000, TPS1100 and TPS2000
Leica prisms

Software

GeoMoS Professional Multiple Sensors

Communications

TCPS26B + Pacific Crest
PDL Radio Modems

Aim

To monitor the Barking railway complex, a strategic railway junction in East London, which is used by London Underground Limited (LUL) and Network Rail (NR) 24hrs/day

■ Benefits:

- 24 Hour monitoring and feedback to TBM operators and interested parties.
- Automated Messaging.
- Area to be monitored was in an active railway zone - no personnel permitted without special permits, look outs etc.

