TFL TRACK SURVEYING, EALING

RAIL MONITORING

Key achievements

- **Night shift track geometry and condition surveys undertaken before and during key construction phases**
- **Combination of automated and manual track monitoring techniques.**

The Project

A new residential development near Perivale station in Ealing.
Prior to start of construction it was necessary to get a detailed understanding of the condition of the London Underground tracks that run near the site.

The Challenge

To accurately record any changes in the geometry and condition of the track over the course of the project.
Detailed surveys had to be undertaken before site works commence.
Surveyed area covered over 100 metres of eastbound and westbound London Underground tracks. Surveys and tiltmeter installations needed to be done on nightshifts and under strict time constraints.

The Solution

A combination of track trolley surveys and visual track condition surveys.
Track geometry surveys undertaken using a track trolley allowed for efficient measurement of several key elements of track shape and displacement including cant, twist, versine, gauge and 3D co-ordinates of both rails.

Track condition surveys were undertaken and recorded manually by experienced engineers to give the client a comprehensive picture of the existing state of the tracks and surrounding structures, including sleepers, rails, welds etc.
An automated wireless tiltmeter network allowed for high frequency, 24-hour monitoring of the tracks in addition to surveys.

Later phases of construction required daytime, on-site surveys of precise levelling points and 3D prisms.

Application
Track Monitoring

Technique
Track Geometry Survey
Condition Survey
Automated Monitoring

Market
Infrastructure

Project Duration
3 Years

Instrumentation
Track Trolley
Automated Total Station
Wireless Tiltmeters

Keller companies
GEO-Instruments

GEO INSTRUMENTS

Geotechnical & Structural Monitoring Solutions

KELLER