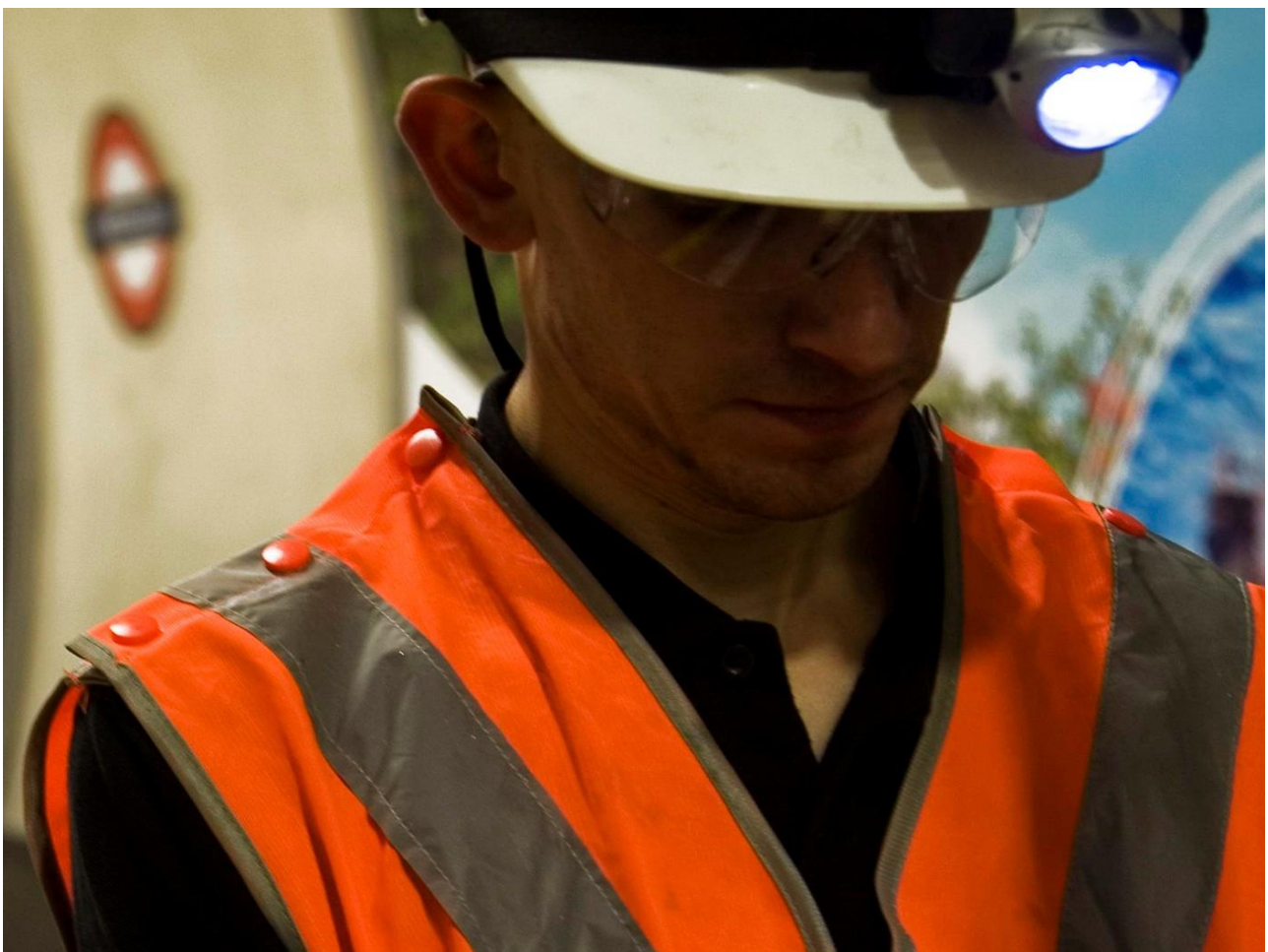


## Southbank Place

London

GEO-Instruments provided monitoring of live London Underground tunnels during the demolition of the old Shell building and the construction of eight new commercial retail and residential buildings in Southbank Place which included a site-wide two-storey basement.



### The project

The monitoring system was required to establish if any movement or damage might occur to the Northern Line and Bakerloo line tunnels or tracks while the main contractor undertook construction works directly above the tunnels.

## The challenge

The low existing clearance of LU tunnels to passing trains meant no cabling or instrumentation could protrude beyond the existing tunnel flanges. This meant installing a robust wireless system which could provide accurate near live data on any movement that might occur throughout the five-year project duration.

## The solution

A wireless mesh network of more than 360 tiltmeters to provide accurate reliable data on heave/settlement, convergence and track twist/cant. Monthly manual Automated Total Stations, precise levelling, tape extensometer and track trolley surveys verified the automated tiltmeter data. GEO also provided long-term environmental monitoring for the site works including several dust monitoring stations.

## Project facts

### Owner(s)

Canary Wharf Contractors

### Keller business unit(s)

GEO-Instruments

### Main contractor(s)

Canary Wharf Contractors

### Services

Software/web-based data presentation  
Automated monitoring

### Markets

Infrastructure Monitoring  
Rail Monitoring  
Tunnelling

### Technologies

Automated Total Stations (ATS)  
Tiltmeters  
Dust monitors

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