

Perspective Development, Lambeth, London

Our Services

- Desk Study
- Site Investigation
- Finite Element Analysis
- Tunnel Condition Surveys
- Tunnel Movement Monitoring



Assessment of Movements of London Underground Tunnels

CGL worked with structural engineers Walsh Associates to assess the affects of the Perspective redevelopment of the Century House site on the Bakerloo and Northern Line tunnels which lay directly beneath and to one side. The redevelopment included the expansion of basement car parking facilities.

Following both desk study and site investigation it was determined that the works might influence existing tunnels at depths of between 10m and 25m below the site.

CGL drew upon specialist finite element analyses to determine movement and stresses on the London Underground structures prior to commencement of works.

In addition, tunnel condition surveys were undertaken and strain gauges were installed with telemetry to provide real-time monitoring of

ground movements during construction and for some twelve months after initial excavation.

The project involved liaison with London Underground. **CGL** worked with other specialist consultants to provide a workable solution to the challenge of minimising any additional loads on the tunnels.

Continued monitoring over a twelve- month period confirmed that, apart from some limited thermal movement, the tunnel linings remained unaffected during the course of redevelopment.

Client: Crest Nicholson
Contractor: CH Pearce