

Paddington Bakerloo Line Link London Underground Ltd.

Location: London, United Kingdom

Date: 2015 – 2016

Structure: Temporary and Permanent Shafts, Squareworks Tunnels, Underground Passageway Tunnels, Cross Passages, Connections to existing Platform Tunnels

Length: Temporary Access Tunnel under LU Assets: 30 meters (98 feet)

Cross-Section: 5.5 by 6.5 meters (18.0 by 21.3 feet)

Geology: Made Ground, River Terrace Deposits, London Clay, Groundwater Above London Clay Latite Porphyry, with variable alteration

Cost: Approximately \$61 Million

Client: ARCADIS (UK) Ltd.

Owner: London Underground Ltd

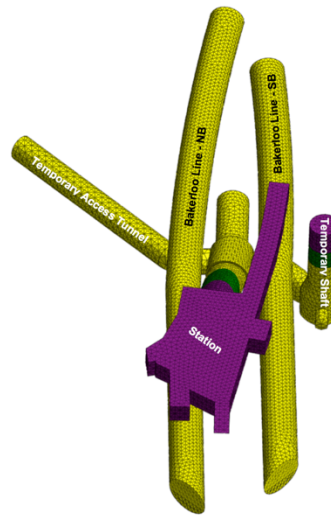


Figure 1. 3D Finite Element Model of existing station and tunnels with new shaft and SCL tunnels.

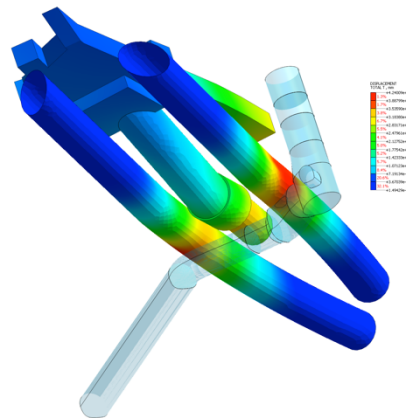


Figure 2. Displacements estimated beneath existing platform tunnels due to shaft and SCL construction.

Independent Category 3 Design Check of SCL / NATM and Squareworks Tunnels:

The Paddington Bakerloo Line Link, which connects the Crossrail station at Paddington with the London Underground Bakerloo Line station, will provide a dedicated pedestrian route enabling passengers, including persons of restricted mobility (PRMs) to interchange between Crossrail and the Bakerloo Line without having to cross the concourse of the Network Rail station.

Gall Zeidler Consultants (GZ) carried out the Independent Category III Check of the design for all new underground structures constructed using Sprayed Concrete Lining / New Austrian Tunneling Method (SCL / NATM) and Squareworks techniques for the project. This check included evaluating construction sequences, excavation and support details, construction details, numerical analyses, waterproofing details, monitoring proposals and an assessment of the impact of mining underneath the existing LUL Bakerloo Line.