

Crossrail London Crossrail Ltd.

Location: London, United Kingdom

Date: 2006 – 2017

Structure: Underground Railroad Stations and Ancillary Structures

Length: SCL/NATM Tunnel Section:
Approximately 12.5 miles (20 kilometers)

Cross-Section: Varies 26 feet (8 meters) to 53 feet (17 meters)

Geology: Fill, Terrace Gravels and Alluvium (Gravel, Sand, Silt and Clay); London Clay and Various Deposits of the Lambeth Group (Sand, Silt, Clay); Groundwater Tables Above Tunnel Roof Elevations

Cost: Approximately US \$32 Billion

Client: Mott MacDonald

Owner: CrossRail Ltd. (CLRL)



Figure 1. Tunnel alignment of new CLRL.

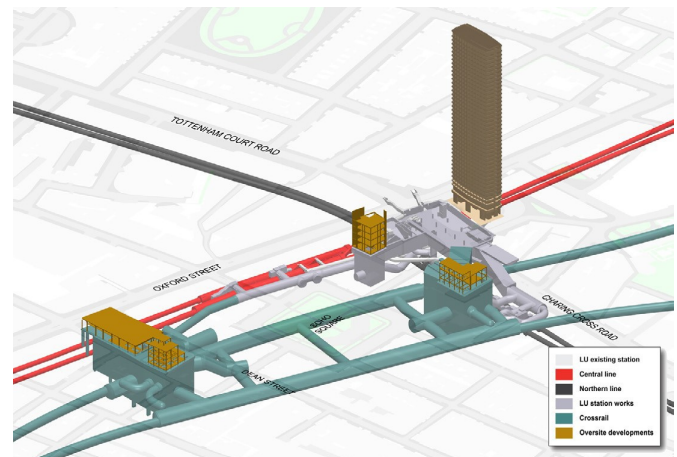


Figure 2. Three-dimensional (3D) schematic of Tottenham Court Road Station. (Courtesy of World Tunneling)

Design Services Sprayed Concrete Linings:

Crossrail provides a world-class railway connection between the east and west of London. The project’s goal is to conveniently connect London’s Docklands in the East via West End to Heathrow Airport. It inter-connects with major existing railway lines to the east, west, and south-east of the city. The central section is located below the busy city of London. A total of seven new underground stations are located along the tunnelled section, five of which were constructed using SCL/NATM technologies.

Gall Zeidler Consultants (GZ) provided design services for the detailed design, specifications, contract documents and construction strategy of the project’s five SCL/NATM underground stations (Liverpool Street, Whitechapel, Bond Street, Tottenham Court Road and Farringdon). The design services also included SCL/NATM ancillary subsurface structures, including ventilation and access / egress shafts, turn-out caverns and adits. GZ provided senior SCL/NATM technical representatives on site during the construction and the handover period.

All tunnelling works have been completed and the line is in operation since May 2022.



Figure 3. High-rise building along tunnel alignment.