

Vauxhall Station Upgrade Project London Underground

Location: London, United Kingdom

Date: 2013 – 2018

Structure: Sprayed Concrete Lining (SCL) Lift Shaft, Adit Tunnel and Cross Passage

Length: SCL Lift Shaft: 15 meters (50 feet) deep

Cross-Section: Adit: Height - 6.8 meters (22 feet)
Width - 6.9 meters (22.6 feet)
Shaft: Diameter - 10 meters (32.8 feet)
Cross-passage: Height - 5.6 meters (17.4 feet)
Width: 5.1 meters (16.7 feet)

Geology: London Clay, Terrace Gravels (gravels with substantial sand)

Cost: £36 Million

Client: Bechtel Ltd.

Owner: London Underground

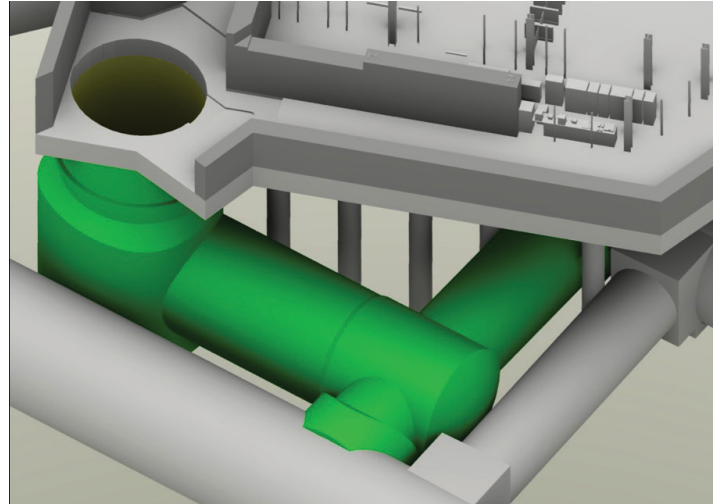


Figure 1. Step free access provided by new SCL shaft and cross passages.

Engineering Consulting and Design Services:

The Vauxhall Station Upgrade Project consists of congestion relief and Step Free Access (SFA) works to improve passenger flow and accessibility for Vauxhall Station on London Underground's Victoria Line. The upgrade scheme includes the construction of an approximately 15-meter (50-foot) deep Sprayed Concrete Lining (SCL) lift shaft, which will be constructed from within the existing station structure with access to the shaft provided by a pedestrian subway. At the platform level, a new SCL adit tunnel and cross passage will be constructed between the existing cast iron platform tunnels. With this approach, expensive and time consuming utility relocation will be avoided. Permeation grouting will be performed to limit groundwater inflow into the shaft excavation from the nearby River Thames.

Gall Zeidler Consultants (GZ) designed the SCL lift shaft and adit tunnel, both of which are constructed using SCL techniques. By taking advantage of the existing sheet piles and the geometry of the existing structures, the design has demonstrated that the adjacent structures and utilities will be minimally influenced by the underground works. Construction is set to begin in early 2014 with anticipated completion of the project scheduled for 2015.

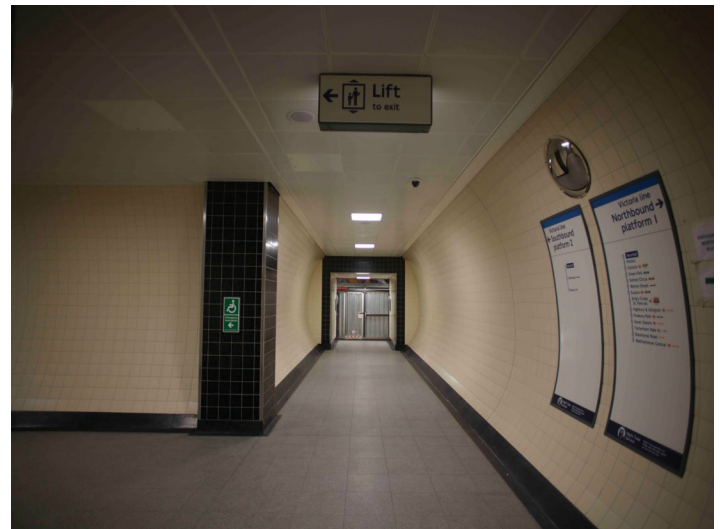


Figure 2. Finished Cross Passageway.