

Silvertown Tunnel Transport for London

Location: London, UK
Date: 2021 - 2025
Structure: Twin Tunnel by shield TBM, Cross Passages by SCL (NATM)
Length: 7.397 km (4596 miles)
Cross-Section: TBM Tunnel Outer Dia: 11.4 m Cross Passages Outer Dia: 4.8 m
Geology: London sequence of Made Ground, River Thames Terrace sediments, London Clay, Harwich Formation and Lambeth Group sediments. The tunnels are located in water saturated sediments of the Lambeth Group and Harwich Formation with pressurized groundwater. The water-saturated sediments of the Lambeth Group will be either frozen or depressurised.
Cost: Est. \$1.3bn (£1bn) - construction
Client: Riverlinx CJV (BAM Nuttall, Ferrovial Construction and SK Ecoplant)
Owner: Transport for London (TfL)

lining followed by waterproofing and reinforced concrete for permanent tunnel support. CPs 2 to 6 were constructed using ground freezing for temporary ground stabilisation. CP1 was built in treated ground (soft piles) while CP 7 was built using groundwater depressurisation for the Lambeth Group sediments.

Gall Zeidler Consultants was responsible for the developed and detailed design of the special TBM segments for the CP openings, ground freezing and cross passage design.

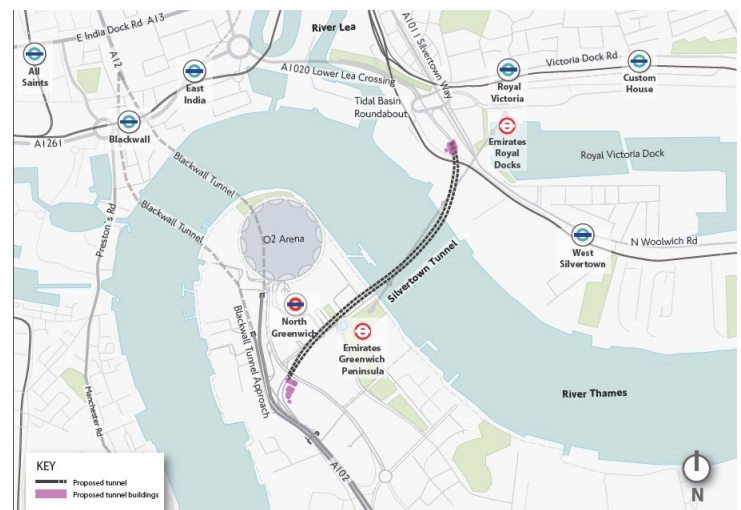


Figure 1. Basic plan view of Silvertown Tunnel.

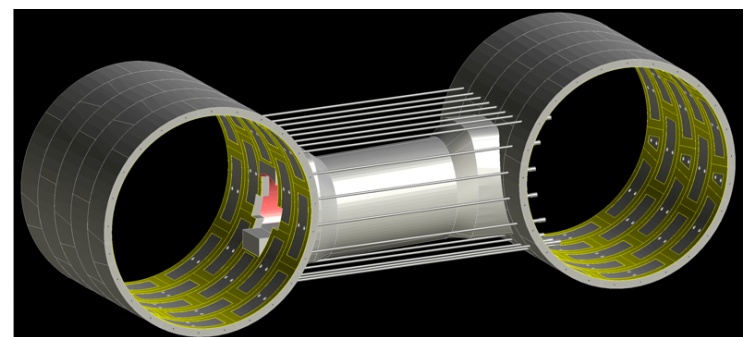


Figure 2. Typical freeze pipe layout.

Detailed Design Consultancy:

The Silvertown Tunnel (STT) is a new, approximately 1.4 km long twin bore TBM road tunnel located in East London crossing beneath the River Thames. It connects the Greenwich Peninsula to Silvertown.

The main tunnels were constructed as twin-bore TBM tunnels which are connected by 7 No. cross passages.

The alignment for the tunnels and cross passages passes through Made Ground, Alluvium, River Terrace deposits, London Clay, Harwich Formation, and Lambeth Group sediments.

The cross passages were built using sprayed concrete as primary