



HS2 Bromford Tunnel, Intermediate Shaft, Adits & Caverns (UK) Sheet Waterproofing

Country	United Kingdom
Type	Railway
Client	High Speed Two (HS2) Limited
Main Contractor	BBV JV (Balfour Beatty, Vinci)
Execution of the work	Renesco UK Ltd.
Designer	Gall Zeidler
Construction Period	2024-2026

Project Description

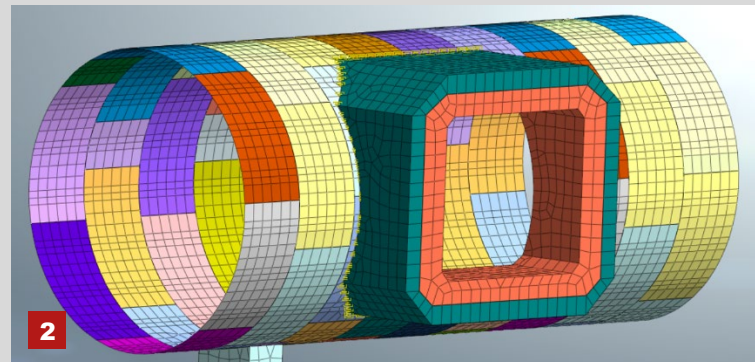
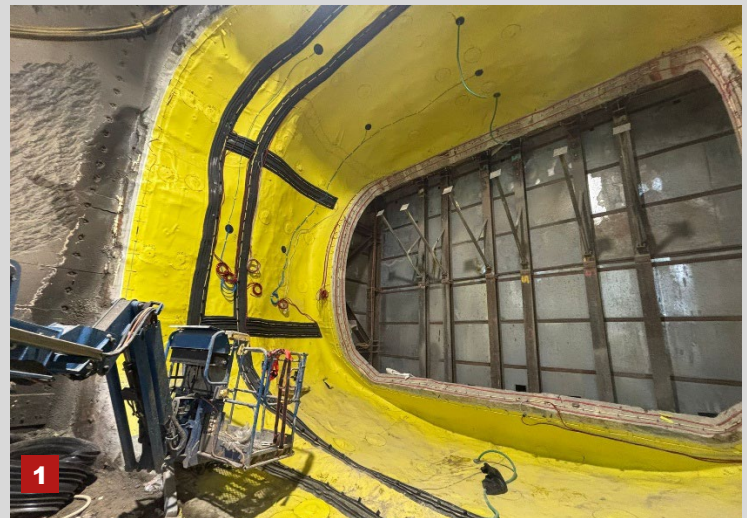
The Bromford Tunnel is a 3.5-mile (5.8km) twin-bore tunnel connecting Water Orton in North Warwickshire to Washwood Heath in Birmingham. The contract to build the tunnel, as part of the wider N1 and N2 lots on the HS2 program. Two giant tunnel boring machines (TBMs) are being used to excavate the tunnel. The tunnel's 47 m deep ventilation/ intermediate shaft at Castle Vale marks the halfway point of the TBM. The shaft, which is 18.6 m in diameter, will feature cross passages which will link to the two tunnels either side to provide ventilation, service and emergency access.

The Bromford tunnel intermediate shaft includes two cable adits (connected with the chambers and adits) and two vent adits for connection between the two running tunnels for evacuation and other cable and ventilation purposes. The chambers will be mined from inside the shaft after the breaking of the D-wall. The adits and vents are constructed after the temporary frames are fixed on the tunnel segments into the 'special' rings. The adits and vents are then excavated and SCL primary lining applied and then followed by waterproofing and secondary lining works. The project comprises 13 no. SCL cross passages (5.5m internal diameter) and an intervention shaft with ventilation adits. The groundwater level is maximum 30m above the tunnel's roof.

Scope of Service

Supply and Install of the waterproof membrane system, including all ancillary items, in accordance with the specifications.

- Sheet membrane, PVC-P, 2 mm
- 1'200g/sqm PP protection geotextile
- Protection sheet membrane, 1.5 mm
- Water barriers, 400/30/6, PVC-P
- Termination at pre-cast-concrete-elements with adhesive strips/tapes
- Injection system, active control sockets, injection hoses, hydrophilic swelling profiles
- BA-Anchors



1. Ventilation Adit
2. Cross-passage-opening-model
3. Intermediate Shaft Cable Adit