



## Tunnel Refurbishment

Buchanan Street Underground, Glasgow

Client  
SPT  
Principal Contractor  
Makers Freyssinet  
Contract Value  
£250k  
Contract Duration  
12 Weeks  
Completion  
July 2008

Freysinet Makers were awarded the contract by Strathclyde Partnership for Transport (SPT) on the Glasgow Underground network to undertake the extensive repairs and leak sealing (over 100m) to the tunnel lining in April 2008.

Opened in 1896 and extensively refurbished in the 1970s, the system requires continuous maintenance due to its ageing construction.

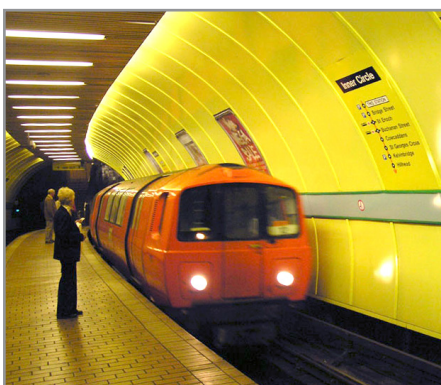
The £250,000 contract awarded to Freysinet Makers involved the injection of over 60 tonnes of cementitious grout and 3000 litres of polyurethane resin to fill out and waterseal the voids in the tunnel lining between the Buchanan Street and St Enoch's stations.

Extensive monitoring of the tunnel took place during the works to ensure the integrity of the tunnel linings while the works were carried out during nightshift possessions of the track.

Due to restricted workspace and safety constraints, all plant and materials were manually handled into the tunnel. Movement of materials and plant were co-ordinated and managed to ensure the tunnel and stations re-opened at the end of every shift.

Due to the sensitivity of the system, co-ordinated shut downs of the entire network were undertaken as works progressed on a night shift basis. Air, water, noise and HAVs monitoring were ongoing throughout the project to ensure the safety of the workforce in the tunnel.

The works ran for a 12 week period and resulted in the successful completion of the works on time and in budget.



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