

MELBOURNE METRO EARLY WORKS - DOMAIN SYMS



CLIENT

John Holland

LOCATION

Melbourne, VIC

TYPE OF CONTRACT

Construct Only

VALUE

\$2 million - \$5 million

CONSTRUCTION PERIOD

Jun 2017 - Dec 2017

OVERVIEW

The Melbourne Metro Tunnel is a major enhancement to Melbourne's rail network which will need to integrate with the existing system. As part of the overall strategy, it was imperative that engagement and delivery of the early works portion was undertaken to facilitate critical utility service relocation including protection and relocation of utility services such as gas, sewer and water mains, demolition and road, bicycle and footpaths to allow for the commencement of the major infrastructure works.

These works specifically related to part of the proposed scope being undertaken as the PPP interface works at Domain Station which required the realignment of a portion a major sewer owned by Melbourne Water. The sewer was inappropriately located for the ensuing PPP (Station Box & Tunnel) works. Rob Carr was engaged by John Holland (the Managing Contractor for the early works) to intercept the existing DN1905 brick South Yarra Main Sewer (SYMS), and make 2 new connections at Domain Road and Albert Street. These live tie in works between shafts into the existing 100 year old brick sewer were conducted some 20 metres below ground.

The new 1920mm OD sewer was tunnelled under St Kilda Road for 161m between those connections. The tunnel was a single straight pipe jacked drive at 1:1500 grade to points upstream and downstream of the proposed station box with the new sewer installed and commissioned prior to the installation of the D Walls by the PPP Contractor for the station box. The existing brick main, was then decommissioned and grouted. The new wastewater infrastructure works constructed by Rob Carr also included the excavation and installation of ring beams to 4 deep shafts up to 20m in depth. The work was conducted in dense urban conditions under live road and rail needing to achieve a tight project time frame. The project was a finalist for a 'Project Excellence' award at the CCF Victoria 2018 awards.

PROJECT SCOPE

- 161m long single drive of 1920mm OD GRP jacking pipe at a grade of 1:1500
- Two hand tunnels between adjacent shafts including associated civil and concrete works
- Installation of prefabricated GRP manholes and components including associated civil and concrete works.
- Grout tunnel annulus.
- Clean completed pipeline upon completion.
- Vacuum test and CCTV survey
- Civil works involving the excavation of four secant piled shafts to 20m in depth including installation of concrete ring beams for structural support.
- Live connection environmental controls, including sediment and erosion control devices.
- Work in close proximity to prestigious private Melbourne Grammar ensuring minimal visual and noise impact on students during school days.

PROJECT HIGHLIGHTS



1920mm OD GRP jacking pipe installed by microtunnelling at a grade of 1:1500



Construction of 1920mm OD GRP pipeline beneath critical tram/rail infrastructure.



Work was constructed in a highly dense urban environment surrounded by major stakeholders.



Rob Carr finished works ahead of schedule and prior to critical project deadlines for the early works.



Aesthetic and noise mitigation measures implemented to ensure minimal impact to local prestigious private school, Melbourne Grammar. Ongoing vibration monitoring.



MELBOURNE METRO EARLY WORKS - DOMAIN SYMS



Top: Sweeping bend connecting piece for incoming lines installed and ready for GRP manhole connection | **Bottom Left:** Iseki TCS1800 'Emily Rose' getting lowered into the launch shaft | **Bottom Right:** Singular 16m long GRP manhole getting lowered into the shaft for connection into new pipeline.