

GREEN SQUARE TRUNK STORMWATER DRAIN



CLIENT

Drying Green Alliance

LOCATION

Green Square, Zetland NSW

TYPE OF CONTRACT

Related Party Entity

VALUE

\$20 million - \$50 million

CONSTRUCTION PERIOD

May 2015 - May 2017

OVERVIEW

The Green Square Stormwater Drain is a new stormwater drainage system built in partnership with Sydney Water and the City of Sydney. Located about 3.5 km south of the city centre, Green Square is one of the City of Sydney's key urban renewal precincts earmarked for development, which will accommodate about 40,000 new residents and 22,000 new workers by 2030.

The Drying Green Alliance is a joint venture formed between Seymour Whyte Constructions (with Rob Carr Pty Ltd), UGL Engineering, Parsons Brinckerhoff and RPS Manidis Roberts to deliver the project. The project provides for a 2.4km stormwater drain to carry flow from the entire catchment upstream of Joynton Ave and discharge into Alexandra Canal significantly reducing the impact of major weather in the area.

Rob Carr was intimately involved with the project through an early contractor involvement process which required the development of detail design, key stakeholder engagement, service interfacing through to the detailed TOC estimate. Rob Carr ultimately constructed 4km of DN1800 concrete pipeline via microtunnelling in twin and triple parallel formation over a 1.3km section in high water table ground consisting of sand, clays and fill material classified as restricted and hazardous. Rob Carr also constructed 5 deep caissons up to 12m in diameter for TBM access and permanent concrete structure installation among other works.

PROJECT SCOPE

- 4km of DN1800 concrete pipeline via microtunnelling in twin and triple parallel formation over a 1.3km section in high water table ground classified as restricted and hazardous.
- All drives were constructed in parallel formation either in sets of two or sets of three.
- Longest single drive length of 293m on a curved alignment. Multiple 250m plus drives.
- Constructed 5 deep caissons up to 12m in diameter for TBM access and permanent concrete structure installation among other works.
- Relocating existing underground services along the alignment.
- Installing associated infrastructure, including box culverts, inlet pits and gross pollutant traps.
- Detailed traffic planning control and management
- Testing and commissioning the new drain.
- Completing restoration of areas impacted by construction work including revegetation and landscaping of work sites.
- Worked in close proximity to Alexandra Canal, which is heritage listed.
- Installing environmental controls, including sediment and erosion control devices.

PROJECT HIGHLIGHTS



Multiple parallel line configurations (2x and 3x). 4km of microtunnelling including on long curved alignments.



12mID concrete caissons for launch and reception. Complex concrete structures built within same



Originally designed as culvert by open excavation Redesigned with 4km of trenchless construction by MTBM.



Rob Carr supplied 3 x DN1800 TBMs in order to meet and maintain critical path on program..



\$100M savings achieved, by changing to trenchless methodology - Savings passed on to client.



Excavated volume of Asbestos Contaminated Material (ACM) reduced significantly. Caissons were employed also, which reduced water issues due to water-charged ground conditions.



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Top: Initial Launch of Iseki TCS1500 | **Bottom Left:** Setup of entrance ring, rails and thrust jacks for Iseki TCS1800 launch | **Bottom Right:** 'Emily Rose' getting lowered into the shaft for her first drive.