

ODEA AVE - WATERFALL BY CROWN



CLIENT

Crown Group

LOCATION

Waterloo, NSW

TYPE OF CONTRACT

Design & Construct

VALUE RANGE

\$1 million - \$2 million

CONSTRUCTION PERIOD

Aug 2018 - Dec 2018

OVERVIEW

Waterfall by Crown is Waterloo's latest luxury residential development, a sophisticated collection of four buildings delivered by award-winning developers, Crown Group. Located in Waterloo, the development sits just 4km from the Sydney CBD in an increasingly dense urban setting. The site, once a network of swamps, wetlands and creeks, now blends a futuristic vision for a new way of living with inspired architecture and the enviable Australian lifestyle. Hazardous flooding has been a constant challenge, with floodwaters reaching 2.3m in Joynton Ave during the 2015 storms – so for the principal and developer as well as the local authorities, it was key that the required stormwater drain could withstand an inundation of heavy rainfall. Rob Carr was all too familiar with the local ground condition and flooding issues, having completed award-winning microtunnelling services for the local Green Square Stormwater Drain project.

In response to Crown's challenge to build a large stormwater road crossing and transition structure, Rob Carr came up with a viable alternative solution to avoid a myriad of underground services and keep Waterloo's O'Dea Avenue continuously operational. With services lying up to 0.45m below ground and up to 0.3m above the to-be constructed stormwater transition pit, which would also receive the microtunnelling machine, Rob Carr constructed the culvert by optioneering the design to suit the client's needs. Seven parallel 820mm OD tunnels 350mm apart – at a clearance of no more than 80mm between services – were bored to exact tolerances below a myriad of services to connect two transition pits for the stormwater drain beneath the development. The project was delivered on budget, two months ahead of time and with no interruption to existing services, which included the main fibre optic cable to the USA and numerous power, gas, telco services. Rob Carr was integral in overcoming the challenges presented by the 'spaghetti' of services to deliver the project without issue.

PROJECT SCOPE

- Temporary works design
- Optioneering for permanent works design
- Support multiple existing services
- 7 No. Microtunnelling 820mm OD GRP
- Each tunnel was built at 350mm spacings
- Microtunnel constructed at a grade of 1:200
- Clearance to existing services of 80mm
- Microtunnel in saturated wet clays and sands
- Construction of bespoke launch and receive pits
- Sheet pile and waler shaft construction
- Reinforced concrete stormwater transition pit 9.7m x 1.8m x 5.9m x 3m x 5.2m @ 5m deep
- Multiple contractor interfacing
- Commissioning of tunnels and structure.
- Intricate Pedestrian and Traffic Control
- Major T-Junction under live traffic conditions

PROJECT HIGHLIGHTS



Successful completion 7 No. parallel tunnels 350mm apart maintaining 80mm clearance to existing services.



Zero incidents working in tight urban corridor at major T-Junction at Joynton Ave and O'Dea Ave Waterloo



Multiple road crossings under major T-Junction in Waterloo, whilst maintaining normal traffic flows.



Achieved completion date 2 months ahead of schedule allowing developer to meet Council certifier deadlines.



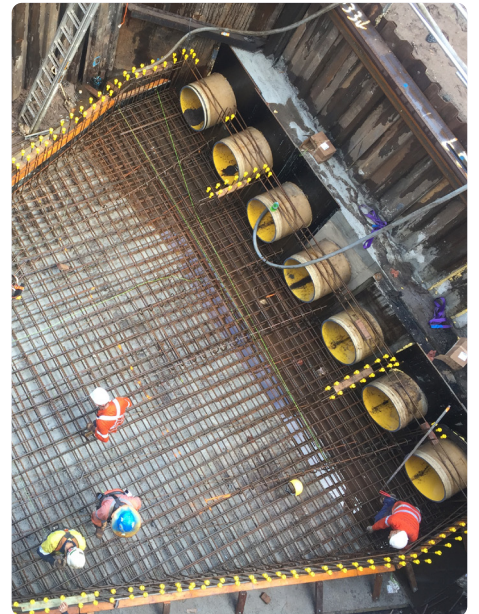
Cost benefits resulting from the use of trenchless technology minimising management of contaminated ground.



Significantly reduced site footprint and dewatering using trenchless technology to minimise overall environmental impacts.



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Top: Completed roof slab structure | **Bottom Left:** Reinforcing of base slab post completion of multiple parralel 820mm OD drives under road way | **Bottom Right:** Top view of civil works required for connection of services into basement separate to tunnelling works