



HORIZONTAL DEWATERING

In 2016, Dunstans Construction Group was engaged by John Holland to complete the design and installation of a horizontal dewatering system.

- As part of the Level Crossing Removal Project (LCRP), Dunstans were engaged to provide an alternative dewatering system to quickly and efficiently lower the water table to allow bulk excavation works beneath McKinnon Road and Centre Road in Melbourne. Due to the long, narrow and active rail corridor, conventional spear type dewatering was not meeting the requirement.
- Dunstans successfully re-designed an innovative dewatering system incorporating HDD Technology that challenged industry standards. This included utilising an inner pipe surrounded by a filtering membrane to prevent intrusion from the silty sands. This was contained within an outer pipe, protecting the filter membrane from damage during installation.
- The de-watering design included installation of four separate perforated pipelines totaling 2.8km of 250mm HDPE pipe with 2.8km of 160mm HDPE pipe installed within this.
- A machine, the first of its kind, was designed and manufactured in Dunstans' workshop in Wangaratta to drill over 1,000,000 holes into the HDPE pipes to be used for the project. The holes were drilled radially creating a diamond pattern, allowing for the maximum perforations in the HDPE without compromising the material integrity.
- Working within the confined rail corridor required specialised training and only allowed for a minimal area for rig set-up and pipe stringing. Dunstans' Maxi Rig Spread is quiet, mobile and compact allowing for set up and operation in the constrictive urban setting.

The innovative project is the first horizontal dewatering system on this scale installed in Australia and proved a huge success with the installation time and effectiveness of lowering the water table exceeding all expectations. This is the largest of number successful de-watering system that has been designed and installed by Dunstans.

Project facts

Client

John Holland Group / LCRP

Description

Installation of four horizontal dewatering pipelines to lower the water table for the LCRP

Project Date

March 2016 – May 2016

Project Location

Bentleigh, Melbourne

Pipe Type

Drilled 160mm HDPE PN16 installed within filtering membrane inside 250mm HDPE PN20

Crossing Lengths

2 x 700m
2 x 650m

Project Value

\$2,500,000