

Glenroy Level Crossing Removal Project

Glenroy, VIC

Ensuring potentially unstable ground conditions provided piles with maximum support.



The project

The Glenroy Level Crossing Removal Project involved removing the level crossing by lowering the rail line under the road. When completed, it will also deliver a new Glenroy Station and station precinct. Keller's contribution was the installation of 398 bored piles that formed the retention walls and foundations for the station and bridge.

The challenge

The main challenges were the ground conditions, and the tight timelines and spatial constraints that working in a rail corridor entail. The ground conditions required drilling up to eight metres through bluestone basalt, amongst the hardest materials to drill through, then through sand and clay, amongst the softest. This could have impacted the stability of the piles. The tight timeframe required multiple rigs and operators working 24/7, within a tight space. This was difficult enough in normal times, but with COVID-19 border shutdowns inhibiting the availability of experienced drill rig operators, flexibility was the name of the game.

The solution

In case it was needed, a polymer drilling fluid plant was set up on site, so that once the auger had punched through the basalt into the soft ground, the fluid could be used to keep the piles open and stable. Though it wasn't ultimately needed, it shows how Keller leaves little to chance. For the main rail occupation, Keller organised for three rigs to work in close proximity to each other for six shifts, 24/7. This necessitated hour-by-hour sequencing of the workforce to be carefully planned. When a state border closure required three of the drill operators to quarantine for 48 hours, an immediate change of these work plans was required, to utilise the crew members who were available. In addition, a quick-dry, extra-strength concrete was used so that work on one pile could start as soon as possible after the previous one had been completed. Keller's experience, planning and flexibility meant its operations on the station and bridge project were both completed before schedule.

Project facts

Owner(s)

Rail Victoria

Keller business unit(s)

Keller Australia

Main contractor(s)

NWPA

Solutions

Heavy foundations
Excavation support

Markets

Infrastructure

Techniques

Bored piles