

PEZZIMENTI TUNNELBORE



Specialising in: **Highly Accurate, Laser-Guided Microtunnels.**

Willow Tree





The Upper Hunter Valley Alliance was formed between Leighton Contractors and ARTC in 2009 to deliver a significant program of civil and track works on the Hunter Valley rail network between Singleton and Werris Creek. As part of these works a new Ø1050 stormwater culvert was required to be installed under the rail line near the town of Willow Tree.

Project Requirements

Site conditions did not allow an exit shaft to be constructed at the time of the minitunnelling. The client specified that the head be fully retractable and be withdrawn back to the launch shaft after the target distance was reached. The design called for a Ø1050 RC Butt Jointed RCJP to be inserted inside a steel casing. Pezzimenti decided on a steel casing of Ø1245 x 10mm wall.

Method

Pipe jack Steel Casing - Fully Retractable Minitunnelling Head

Purpose

Stormwater

Length

29m

Ground

Boulder Clay

Outer Casing

1245 mm x 10mm wall

Carrier Pipe

Ø1050 RC Butt Jointed RCJP

Bore Diameter

Ø1255mm

Grade

-3.5%



The Project

For this diameter Pezzimenti has developed an auger extraction system which is used to transport the material from the face back to the shaft. Augers use less water than vacuum extraction which is used for smaller diameters.

At Willow Tree no water was added to the process during minitunnelling.

When the shaft was excavated hard igneous boulders were found. These boulders slowed progress considerably during minitunnelling. At the 12m mark a major intervention was required when the steering mechanism of the head was damaged by the boulders. The head was fully retracted from the steel casing, repaired on site and then re-installed inside the steel casing.

Once the 29m mark was reached, the head was withdrawn back through the steel casing into the launch shaft and demobilised.

The butt jointed RC JP was then sliplined into the steel casing. The client undertook grouting of the annulus between the steel casing and the concrete pipe.

All up the works took 10 working days.

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For all inquiries – including Job
Inspections, Quotations and Project
Feasibilities – please don't hesitate
to contact Pezzimenti Tunnelbore.
We are confident we'll hit the mark
on your next microtunneling project.

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When Accuracy Matters.