

PEZZIMENTI TUNNELBORE

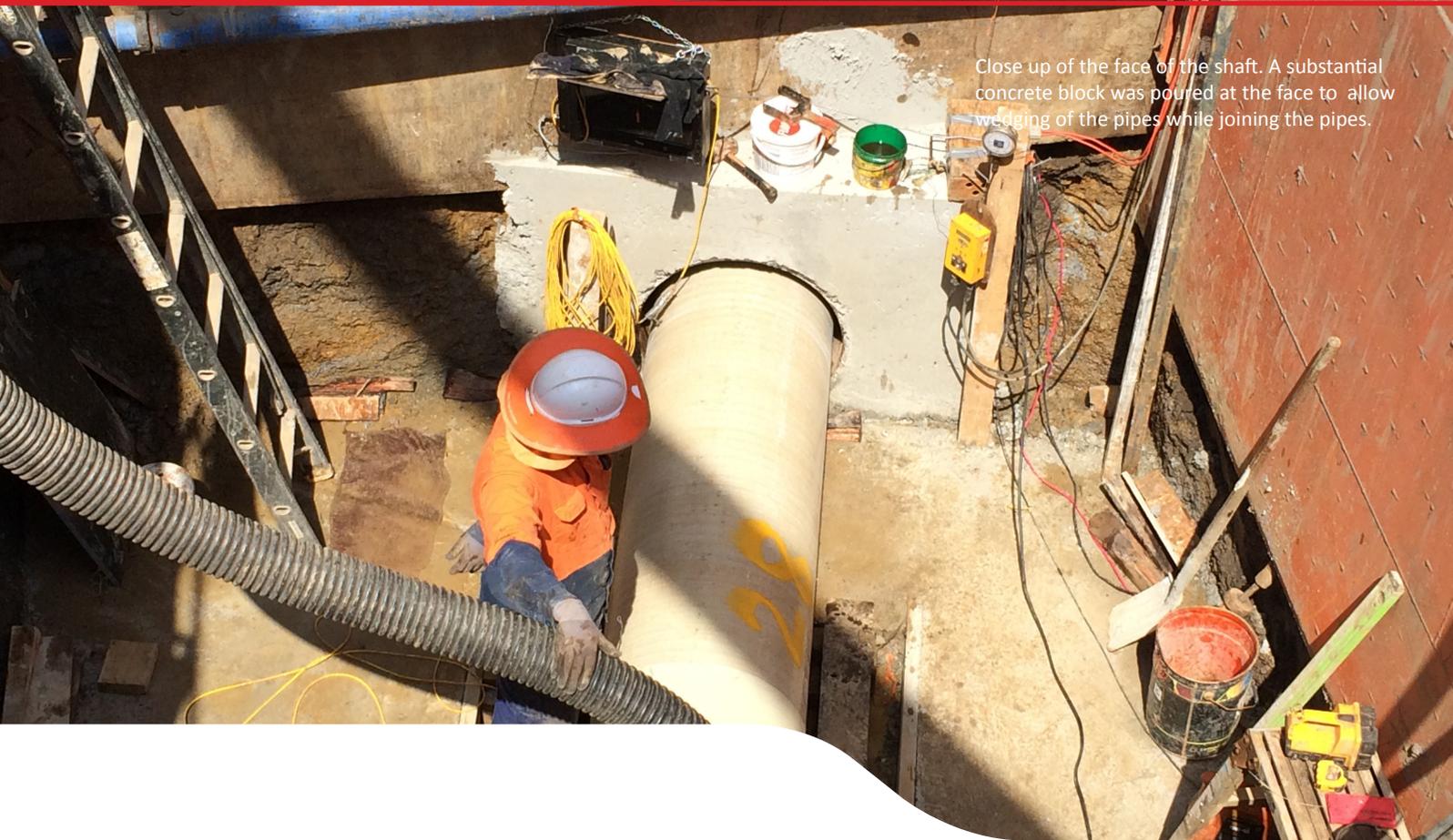


Specialising in: **Highly Accurate, Laser-Guided Microtunnels.**

East St. Clair



Ropes Ck Floodplain: General view of the site layout



Close up of the face of the shaft. A substantial concrete block was poured at the face to allow wedging of the pipes while joining the pipes.

A large scale industrial development in Horsley Park by Goodman Property Services required 1,946m long lead in sewer with diameters ranging.

The downstream section of the lead-in followed the flood plain of Ropes Creek and the ground was saturated sandy clays, and clayey gravels. The upstream section moved away from the creek and the ground changed to shale.

Out of the 1,946m 1,073m was microtunnelled in 9 separate microtunnels. In the non-self-supporting softer alluvial ground GRP jacking pipes were jacked. In the stable and self-supporting shale ground microtunnelling was done by Freeboring and then sliplining the jacking pipe into the microtunnel.

Method
Freebore and Pipejack

Reason
Aboriginal heritage site

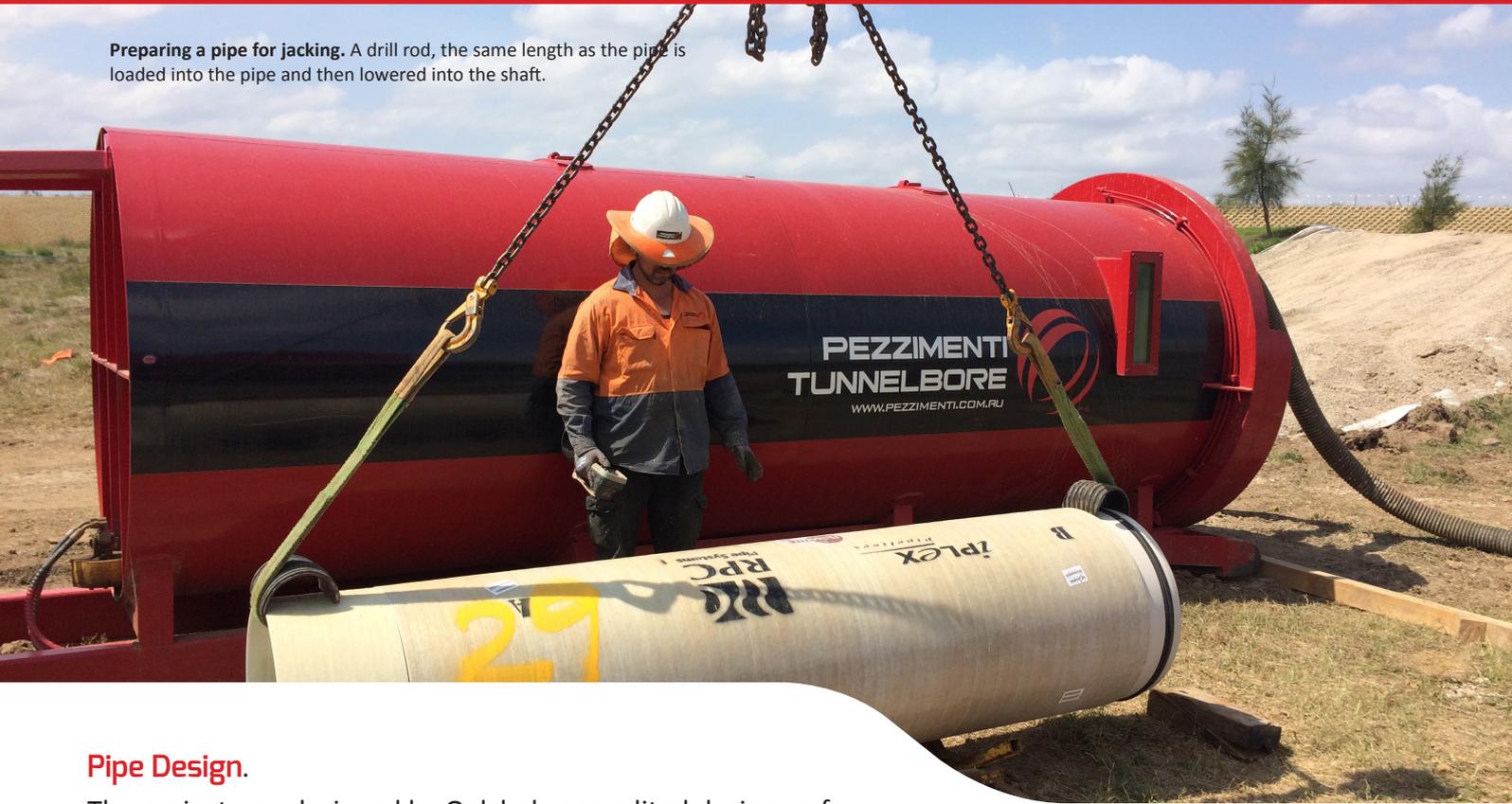
Ground
Clay / Shale

Steel Casing
375GRPJP, 450GRPJP, 525GRPJP

Carrier Pipe
225 PVC SN8, 300 PP and 450 PP

East St Clair

Preparing a pipe for jacking. A drill rod, the same length as the pipe is loaded into the pipe and then lowered into the shaft.

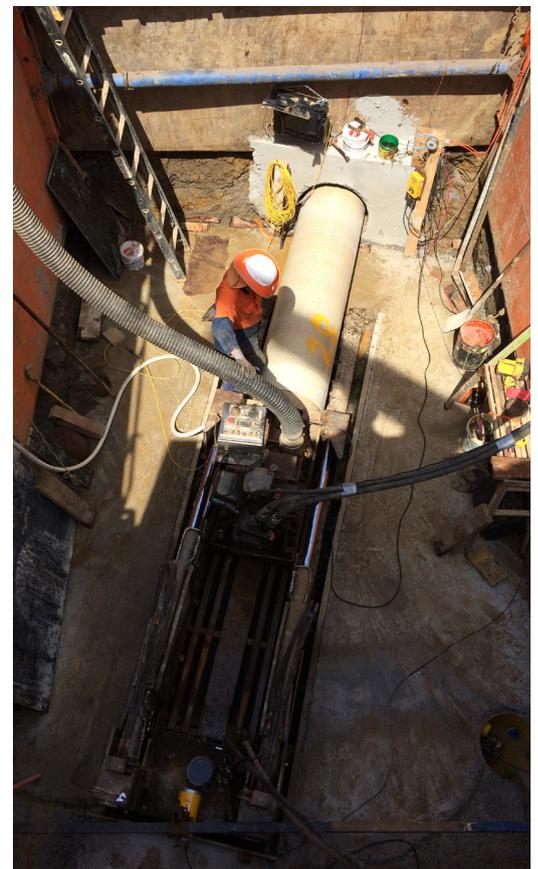


Pipe Design.

The project was designed by Qalchek, accredited designers for Sydney Water, who Project Managed the works on behalf of Fielders. Qalchek called tenders and let the head contract to Athassel. Athassel purchased the GRP jacking pipes from Iplex. The pipes were manufactured in Adelaide by RCP. Once the primary parties had been nominated the detailed pipe design was finalised between Qalchek, Athassel, Iplex and Pezzimenti and submitted to SWC for final approval. Pezzimenti provided the final detail of the expected axial loadings on the pipes for the various lengths which decided the class of pipe to be chosen.

Site Works.

Athassel took on board that a real risk to delay the works was the lack of access following wet weather. The site foremen and Pezzimenti's Drilling Supervisor devised a site layout which enabled minimal truck movement on site. A hard stand area was constructed near the spoil bund which enabled the spoil truck to be emptied immediately after a rain event. Good construction and maintenance of the access track along the creek flood plain by Athassel was a key to maintaining equipment access to the drilling shafts. Basic access to site can be a significant cost and hence it is a temptation for head contractors to provide inadequate access which inevitably delays work and increases costs.



Overview of Microtunnelling.

A breakdown of the 9 microtunnels.

	Carrier Pipe	Length (m)	Diam (mm)	Grade (%)	Strata	Freebore or Jack	Code	Working Days
1	375 GRPJP	45	440	2.6	Shale	Freebore	2S	4
2	525 GRP JP	147	630	0.2	clay/shale	Jack	2N	10
3	525 GRP JP	108	630	0.2	clay/shale	Jack	2N	12
4	450 GRP JP	171	530	0.3	clay	Jack	2N	12
5	525 GRP JP	149	630	1.9	sandy clay	Jack	2N	10
6	525 GRP JP	178	530	1.8	shale	Jack	2N	18
7	450GRP JP	54	530	-1.8	clay/shale	Jack	2N	5
8	450GRP JP	180	530	1.2	clay/shale	Jack	2N	14
9	450GRP JP	41	530	0.8	shale	Jack	2N	4
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PEZZIMENTI TUNNELBORE



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.