



RAILWAY

TRANSPORT FOR NSW'S NORTH WEST RAIL LINK

Castle Hills, Cherrybrook & Epping, NSW

AUSTRALIA



Owner

Transport Construction Authority

Engineer

PSM, CH2MHILL & Hyder

General contractor

Dragados, John Holland & Thiess

Period of works

January 2014-May 2014

Main figures

Piling

472 bored piles across three NWRL project location

Bored piles

vary in depth from 3m-29m with an average depth of 17m

Retaining walls

6950 lm of piles ranging from 900mm to 1350mm diameters.



Project description

The NWRL is a \$8.3 billion Transport for NSW rail infrastructure project that will provide a link between North Western Sydney and Chatswood. The project involves construction of 8 stations and 15km of twin rail tunnels between Bella Vista and Epping. AFS was involved in piling works for the tunnel boring machine launch sites and three future underground stations; Castle Hill, Cherrybrook and Epping. AFS constructed 472 bored piles across three NWRL project locations. The piles have formed the supporting foundations for the station box excavation and Tunnel Boring Machine launch site.

Ground conditions

NSL -1.5 metre Silty Clay residual soil

1.5-6.0 Extremely weathered Laminite(Siltstone 60% & Sandstone 40%)

6.0-10 MW Laminite

10 -> than 15 SW-Fr Laminite (70% Siltstone 30% Sandstone)

Solution

The piles varied in depth from 3m—29m with an average depth of 17m.

The piles were installed with a maximum pile inclination of 1% and strict toe and cut off levels were followed to prevent piles from moving inside the box excavation and interfering with the tunnelling works. These design specifications were achieved through onsite quality checks.

The large quantities of drilling and concreting involved in the project required an efficient programming sequence to be developed and implemented across the three sites. This involved a split crew of concreters and drillers and a drill sequencing pattern to achieve daily targets for each site.



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