



MARMION ANGLING AND AQUATIC CLUB

PERTH METRO, WA

SOIL NAIL AND PERMEATION GROUTING

PROJECT

Permanent Shotcrete Soil Nail Wall and Permeation grouting at the Marmion Angling and Aquatic Club

CLIENT

Ertech Pty Ltd

FORTEC CONTACT

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DESCRIPTION

Fortec was engaged by Ertech Pty Ltd to perform the soil nail installation for the City of Joondalup at the Marmion Angling and Aquatic Club. Fortec Australia was able to develop a methodology and deliver a system that alleviated the need for large piling rigs which in turn minimised the disruption to the general public using the West Coast Drive road and foot paths.

The project involved permeation grouting with micro fine cement to create low strength stable micro piles prior to excavation works. The micro piles stabilised the weak sandy soils sufficiently to allow for an excavator to cut a 90° vertical wall in beach sands. After excavating the soil, a blinding layer of shotcrete was spayed to further assist in stabilisation of the excavated face. Fortec then drilled a pattern 100mm diameter holes with FRP Self Drilling Anchors to depths of 5 metres and the anchors were then grouted and fitted with Resin plates and nuts to tie the wall reinforcement to the soil nails. A final layer of shotcrete was added that was cut and trowelled to allow for City of Joondalup to later add a mural to the wall.

The scope included:

- ▶ Micro fine permeation grouting to depths of 5 metres to create 600mm diameter grout columns along a 90m face
- ▶ Drill, supply and Install over 180 five metre long Fibreglass Self Drilling Anchors
- ▶ Install and proof test/load 3 test anchors
- ▶ Supply and apply 500 m² of shotcrete with a cut and trowelled finish

HIGHLIGHTS

- ▶ The project was completed on time and on budget.
- ▶ Minimised disruption to the general public.



IMAGES (FROM TOP TO BOTTOM)

- ▶ Mixing microfine cement prior to excavation.
- ▶ Drilling and Anchor installation.
- ▶ Completed wall.