

OFFICE & WORKSHOPS MEWS ST, FREMANTLE STONE COLUMNS



Specialist Contractor: GFWA

THE PROJECT

The harbour area of Fremantle, WA is located in an area where the soil is generally loose and specific geotechnical measures are required before construction.

A facility was considered for construction on Mews Road near the shoreline. The soil profile consisted of approximately 1.5 m of very loose building rubble underlain by loose sand and limestone rubble fill which had been placed sub-aqueously in a non-compacted manner. Seabed level prior to filling was at approximately 6 m depth with layers of loose to medium dense sands below this level.

The facilities footings were designed for a bearing capacity of 300 kPa; however calculations indicated that ground improvement was required before this pressure could be safely applied to the foundations.

THE ROLE OF GFWA

GFWA was awarded the contract for performing the ground improvement works.

Although vibro compaction could have been a feasible solution if all layers were sandy, the site investigation indicated that some narrow bands (less than 1 m thickness) of fine material with CPT friction ratio greater than 2 m were present. Hence, the Stone Column method was implemented in this project.

Stone Columns were carried out to a depth of 6 m under 35 footings. Coarse crushed rock was used for column material.

Post treatment CPT testing confirmed that adequate improvement was achieved.

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