

# 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.