

# PENRITH LAKES PROTOTYPE TRIAL

## DYNAMIC COMPACTION



Sustainable Technology



**Client:** Penrith Lakes Development Corporation Ltd  
**Consultant:** Coffey Geotechnics

**Contractor:** Austress Menard Pty Ltd

### THE PROJECT

The Penrith Lakes Development Corporation (PLDC) has been formed as a conglomerate between the main concrete suppliers within the Sydney region. The Penrith lakes site has provided a large proportion of the sand used in the production of concrete over many years. This resource is approaching exhaustion, therefore PLDC has developed the PLDC Scheme for the remediation and development of the entire PLDC site for future residential and light industrial use.

As part of the remediation works for the Penrith Lakes site, a prototype trial has been initiated by PLDC, for the purpose of confirming the use of the Dynamic Compaction Method to treat all of the areas within the site, where there has been uncontrolled placement of material throughout the past.

#### Works Description

PLDC appointed Coffey Geosciences as geotechnical consultants for the works and Austress Menard was selected as the successful tenderer for the trial. The trial works involved treatment by Dynamic Compaction of an area of 10 ha, with the objective of compacting the upper 8-10m of material.

### AUSTRESS MENARD'S ROLE

Austress Menard was engaged by Penrith Lakes Development Corporation as the specialist contractor to carry out the Dynamic Compaction Works. The depth treatment (up to 10m) required the fabrication of a special 20 tonne pounder for use in conjunction with a purpose built 120T Liebherr DC Crawler Crane imported for the works.

The specialist plant and equipment that was mobilised for this project accommodates the design energy requirement for the dynamic compaction trial; this called for a single impact energy of 500 tonne metres, satisfied by the 20T pounder dropped from a height up to 25m.

Initial test results within the DC Trial area show clearly that the design criteria are being achieved. Current production rates and costs demonstrate that the Dynamic Compaction Method is a financially viable technology for the treatment of such a large area, particularly when compared to alternative methods of treatment.

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