



NETWORK GEOTECHNICS

Established in 1995, Network Geotechnics is a multi-disciplined group that provides geotechnical engineering, laboratory, drilling and in-situ testing services to the NSW construction and civil engineering industries.

Given their project experience and innovative approach, Network Geotechnics were selected for the \$500 million Port Botany Expansion Project.

Commencing in October 2008, Network Geotechnics were responsible for carrying out approximately 450 marine based cone penetration tests (CPTs) and approximately 900 land based CPTs on loose and compacted dredged sand. They also provided testing services for all marine grade rock protection products from quarry to site, as well as testing of the onsite civil works.

CPT testing involves pushing a cylindrical probe with a cone-shaped tip statically into the ground. Sensors within the probe provide a real time continuous measurement of soil strength and other characteristics, which are then used for geotechnical modelling.

Matt King, Business Development Manager for Network Geotechnics said the marine based CPTs were used by Baulderstone to evaluate the marine trench foundation conditions that provided support for the 2km length of precast sea wall, whilst the land based CPTs were used to evaluate the effectiveness of dynamic and vibro compaction.

To undertake the project Network Geotechnics sourced and commissioned a Geoprobe 6625CPT crawler rig from the USA.

“We chose the Geoprobe 6625CPT as it was lightweight, self anchoring and crawler-mounted, therefore it was well suited to both marine and loose sand conditions,” Mr King said.

As a result they were able to carry out most of the two year testing program using the Geoprobe, only requiring the use of an external rig prior to its commissioning.

“The rig is also very compact and was able to be stored on-site in a container, which enabled us to keep costs for Baulderstone down,” he said.

Throughout their involvement in the project, Todd Redman, Drilling Manager at Network Geotechnics said the team were met with a number of challenges.

“One of which was reaching nominated test depths within the marine trench. After some initial setbacks, the feedback we provided to Baulderstone enabled them to develop a single length of specialised casing in order to get the CPT probe to the trench floor ready for testing.”

“Once installed, the equipment operated within a cone tip resistance range of 1 to 60 MPa and was able to achieve full penetration to nominated design depths of up to 18m below the seabed,” he said.

This collaborative approach to problem solving saw Network Geotechnics and Baulderstone achieve daily productivity on land and over water that exceeded their initial expectations.

Given their ability to successfully assist in the delivery of such a significant project, it is without a doubt Network Geotechnics will remain at the forefront of their industry.

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