



**Project name:** Windy Point rockfall remediation  
**Client:** Lyttleton Port Company  
**Project date:** September – December 2011

#### **Project description**

Following the Canterbury earthquakes there were a considerable number of rockfalls around the Lyttleton port operational areas. Due to the steep topography of the area, and the presence of extensive rock bluffs and outcrops, the areas below are vulnerable to hazards including cliff collapse, boulder flux and isolated boulder rolls. Of key concern was an areas known as ‘Windy Point’ a ragged, broken rocky outcrop above the port’s main electrical control room, sampling laboratory and coal handling facility. Concern for safety of workers and valuable equipment saw a geotechnical survey completed by the Port Company, and areas identified for rockfall remediation. The area was also vital to one of the Port Company’s key clients, Solid Energy New Zealand (SENZ). Further rockfall could lead to a supply line failure, affecting supply contracts.



#### **Geotech’s role**

Geotech completed a design proposal to remediate the damage identified by Lyttleton Port Company’s geotechnical engineers and Geoscience Consulting NZ Ltd. The design took into account specific site conditions and addressed issues such as access problems.

Geotech were subsequently contracted by Lyttleton Port Company to carry out controlled deconstruction of hazardous rocks and stabilization of faces. Staff rock scaled the area and Geotech supplied and installed a rock bolt and mesh drapery system to assist with control of falling debris. This work required a high rope access team, utilizing our Marini drill, which is a specialized drill for operation on slopes up to vertical rockfaces. The mesh system installed was 1,315 square metres of Maccaferri Steelgrid MO, covering some difficult terrain. A series of pull tests were completed to rest the design.



#### **Resources applied**

Geotech supplied all of the materials, plant, labour and management and completed the installation of the ground support system. Resources applied to complete the project included:

- High rope access team
- Marini drill
- Compressor
- 4WD Hiab truck
- Mai grout pump
- Generator
- Water pump

**Innovation and performance**

Due to access constraints, the project required drillers capable of operating the drill while working from ropes. Geotech met all key performance indicators for the Windy Point project, and work was safely and successfully completed. The end result was a neat, tidy mesh system tightened with 3, and 6, anchor bolts. The stabilisation work has since been tested by additional earthquakes (including magnitude 5.8 and magnitude 6 in December 2011) and has performed extremely well.

**Project value**

\$540,000

**Project reference**

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