



GEOFABRICS CASE STUDY



STABILISING THE TOE OF A SKI SLOPE WITH GREEN TERRAMESH

PRODUCTS USED

MACCAFERRI® GREEN TERRAMESH® WIRE MESH

- Durable wire mesh structure coated with Galmac and PoliMac provides a design life of over 120 years under normal inland application, offering greater abrasion resistance, better performance at low temperatures and improved UV and chemical resistance
- Promotes rapid vegetation with an erosion control blanket lining in the unit that is filled with soil to encourage growth
- Cost savings as additional geogrid lengths are not required to achieve connection capacity and there is no need for a protective rock veneer facing
- Quick and simple installation by raising the welded mesh panel of the unit with bracing brackets to support the face at the designated angle



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PROJECT DESCRIPTION

Coronet Peak is New Zealand's first commercial ski field. It is a popular destination among skiers with up to 10,000 people visiting from around the globe annually to experience the slopes during snow season.

In February 2007, Geofabrics New Zealand were approached by Hadley Consultants for design suggestions on the Coronet Peak Learners Slope Project. The client, Ski New Zealand was looking for a mechanically stabilised earth (MSE) solution for a 4-metre-high slope situated above an alpine road that was cutting at the base of the Coronet Peak Ski Field Learners Slope. The MSE structure was required at the slope toe for the construction of a maintenance road passing below the learners slope.

OUR SOLUTION

Geofabrics New Zealand provided technical support to the designer, Hadley Consultants with a retaining wall solution. Hadley Consultants required a design that would yield the most cost-effective retaining solution for the alpine site. Factors to consider during the design process included snow saturation, thaw, dry summers, exposed location and soil stabilisation, while simultaneously finding ways to keep the toe road open for the maintenance contractors to safely access the site.

To determine the most suitable products for this project, Maccaferri Macstars software was used to analyse the stability of the un-reinforced slope. From the analysis reports, Green Terramesh was selected as the client wanted a MSE solution that would blend into the alpine environment.

Queenstown earthworks contractor, Faulks set out and installed the Green Terramesh system. Work behind the structure involved installing Tensar® Uniaxial (RE) Geogrids horizontally within the compacted backfill. The combination of compacted granular fill and Uniaxial (RE) Geogrids formed a MSE structure designed to resist events that are likely to introduce failure mechanisms.

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4m

high mechanically stabilised earth wall

In February 2023, Geofabrics New Zealand had the opportunity to revisit the completed site. During the past 16 years, vegetation had formed over the Green Terramesh structure to create a stabilised slope that naturally blends into the surrounding alpine environment. The earthwork contractor, Faulks can be proud of their quality installation with the structure proving to be a durable and robust solution in challenging environments and weather, withstanding earthquakes and rain with minimal impact to the slope.



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