



## GEOFABRICS CASE STUDY



# REINFORCING THE SOIL SLOPE AT HALLS FARM

## PRODUCTS USED

### MACCAFERRI® PARAGRID®

- High strength geogrid for soil reinforcement
- Manufactured from discrete bundles of parallel high strength synthetic fibres in a tough and durable polymeric sheath
- Extremely durable and well suited for steep slopes and extreme pH soil conditions

### TENCATE® MIRAGRID® GX

- Geogrid manufactured from high modulus polyester yarns to ensure long term structural stability of reinforced soil structures
- Can accommodate extremely high loads due to low-creep, high-modulus raw materials



### PHIL SIMMS

CENTRAL NORTH ISLAND SALES ENGINEER

☎ +64 21 509 435

✉ [p.simms@geofabrics.co.nz](mailto:p.simms@geofabrics.co.nz)

📍 HAMILTON, NZ

## PROJECT DESCRIPTION

Halls Farm is one of the latest residential subdivisions to take place in North Auckland. The client wanted to fill a large gully in the area for aesthetic and functional purposes. Geofabrics explored several possible solutions to reinforce the slope surface so that a grassed walking path could be provided for the community.

## OUR SOLUTION

A high-water table and the use of an on-site fill over a relatively weak alluvium soil layer required the use of geogrid reinforcement and a 3m deep shear key to form the 2H:1V slope for the gully infill.

The initial design incorporated multiple geogrid layers at close spacing to form the 22m high slope. Geofabrics proposed an alternative solution using a higher strength geogrid at a wider spacing to satisfy the slope stability requirements with shorter length secondary geogrid to address facing stability. The combination of different geogrids reduced overall product quantities, cost, and installation time.

TenCate Miragrid was used as an economical wraparound system to secure the slope and contain the topsoil which would eventually be grassed. This proved to be more cost effective than using geocells to hold topsoil on the slope. The choice of Maccaferri Paragrid provided the contractor the flexibility to construct the slope using lime treated fills. Utilising less geogrid in the slope created shorter installation timelines for the contractor and fast tracked the project for the client.

The construction was straightforward with the forming of the shear key followed by the first layer of Paragrid primary reinforcement. The secondary layer of Miragrid was placed and cut to a length to extend up the face and return into the slope at the next Paragrid layer located 3m above. This was followed by compacted fill and shorter lengths of Miragrid at 500mm spacing terminated at the face.

**GEOFABRICS®**

Sustainable solutions





Preparation for laying of Paragrid



Laying of Paragrid with correct overlaps required



We approached Geofabrics with a design which was both time consuming and costly. After discussing possible alternatives, we put forward the use of Paragrid and Miragrid to the designers which was approved. With assistance from Geofabrics during installation, installing the Paragrid and Miragrid across this large area created a simple, cost-effective and time saving solution.

Dempsey Wood New Zealand



Extent of Paragrid required



Backfill of first two layers of Paragrid



Preparation for next Paragrid layer



Completed structure using Paragrid and Miragrid products

Visit [geofabrics.co](http://geofabrics.co) or call 1300 60 60 20 (AU)  
or [geofabrics.co.nz](http://geofabrics.co.nz) or call 0800 60 60 20 (NZ)

**GEOFABRICS**<sup>®</sup>  
Sustainable solutions

IMPORTANT NOTICE - DISCLAIMER - The information contained in this brochure is general in nature. In particular the content of this brochure does not take account of specific conditions that may be present at your site. For full disclaimer and further information regarding installation visit [geofabrics.co/disclaimer](http://geofabrics.co/disclaimer)  
© Copyright held by Geofabrics Australasia Pty Ltd. All rights are reserved and no part of this publication may be copied without prior permission. Published September 2021.

