

# CASE STUDY

Double Twist Mesh

Project: 17 Morgans Valley  
Date: May - June 2014  
Client: Mike Greer Hill Ltd  
Location: Christchurch



## Green Terramesh

During the strong earthquake accelerations on the 22<sup>nd</sup> of February of the slopes in the Morgans Valley area. As a result the Canterbury Earthquake Recovery Authority (CERA) red zoned some properties up slope and to the south of 17 Morgans Valley road. Although 17 Morgans Valley was green zoned, review of rockfall life risk maps produced by GNS indicated the upper part of the property was located in an unacceptable zone of risk of greater than 1 in 10 000.

It was proposed that some form of rock fall protection was required to reduce this risk to an acceptable level less than 1 in 10 000. After a detailed assessment of the site, subsurface and rockfall modelling, several risk reduction design options were considered. The most cost effective in terms of construction, serviceability and maintenance was determined to be a Green Terramesh Reinforced Soil Bund located at the upslope property boundary. The design was to accommodate the 95<sup>th</sup> percentile boulder energy and bounce height determined on the basis of site specific rockfall modelling. The Green Terramesh Bund is designed to have an arc shape to minimise the length to 37m and to follow the boundary shape and contour.

For a general guideline on the design philosophy and energy capacity of the Green Terramesh Bund, Maccaferri has prepared a technical note on the subject based on full scale test and calibration results conducted in Europe - TN The design of Green Terramesh Embankment against rockfall paper. Otherwise, there are many technical papers on the subject available upon request.

The contractor took 20 working days to complete the entire Green Terramesh Bund. This was carried out with a crew of 2 workers and the use of a 14 and 1.7 tonne digger, a 3 tonne loader, a vibrating roller and a 400kg compactor. The complete height was 2.1m with 0.3m embedded into the prepared AP65 base course fill ground.



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Start of construction of Green Terramesh Bund



Constructed Green Terramesh Bund



Completed Green Terramesh Bund

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