

BROADWOOD ROAD REPAIR BROADWOOD

RETAINING WALL/REINFORCED SOIL

Product: PVC Gabions, Green Terramesh Units, Grastrike R300, bidim® Geotextile, Megaflo®, Tensar RE Geogrid, Enkadrain, Lacing Rings

Problem

The site, located just outside the township of Broadwood in Northland, was subject to storm damage in 2007 which saw the road reduced to one lane due to a substantial slip. GHD were called in to consider suitable systems to repair the road. Due to the close proximity of the river, which curves in a U-shape below the slip, a solution that had good scour protection properties was called for. A further consideration was debris flow from large rain events that can impact at the base of the slip.

Solution

GHD looked at several options to successfully and economically repair the slip with research pointing to a combined structure using gabions and Green Terramesh. One factor to support this option was the location of bedrock at the base of the slip which made for a suitable foundation. Maccaferri provided design assistance for this combined structure using MACSTARS W software. The slip was approximately 10m in height and 80m in length. The gabions at the base of the structure provide scour protection and also include an additional layer of DT mesh to ensure adequate protection from large debris that is known to travel down the river in large rain events. Green Terramesh was used on the upper half of the structure and gave the advantage of speed and ease of construction.

Construction

Construction of the slip repair took place in January 2010 with the initial 5m high gabion section having a crew of 4 men completing 5 gabions (10 face m²) a day. This included the installation of Tensar RE geogrid to provide additional reinforcement for the structure and the compacted backfill. The Green Terramesh saw construction rates increase to around 20 to 25 units (30 face m²) a day including Tensar reinforcement, backfill and drainage system. The Contractor commented that using Enkadrain SL and Megaflo for the drainage of the structure was a lot quicker and more cost effective than traditional gravel drains. Work on the structure was carried out in two phases with completion of the works in April 2010. Since completion we have seen several other sites in Northland use Green Terramesh as a cost affective and rapid solution for slip repair.

Client:

FAR NORTH DISTRICT COUNCIL

Main contractor / Engineer name:

KRUZZ CONTRACTORS / GHD

Products used:

GREEN TERRAMESH, PVC GABIONS, BIDIM A29, TENSAR RE40 & RE80, ENKADRAIN SL, MEGAFLO

Date of construction:

JAN 2010

Maccaferri NZ Ltd

14 Goodman Place, PO Box 12536, Penrose, Auckland, New Zealand
T: (+64) 9 6436495 F: (+64) 9 634 6492, FREEPHONE 0800 60 60 20
E: sales@maccaferri.co.nz
www.maccaferri.co.nz

Quality System AS/NZS ISO 9001:2008.



During construction



Completed slope



Greening of Green Terramesh structure

The information presented herein is, to the best of our knowledge and belief, correct and is subject to periodic review and revision. The validity of the information relative to the subsoil, hydraulic and other engineering conditions must be ascertained by a suitably qualified person. No warranty is either expressed or implied. Unauthorised reproduction or distribution is prohibited. Copyright is vested in Maccaferri or Maccaferri's Principal where applicable.