

MACCNEWS

Issue 12

August 2005

MACCAFERRI UPGRADE LOGISTICS



New Office and Warehouse at 14 Goodman Place, Penrose, Auckland

After some years at the original Auckland facility, we have made the big move..... actually the physical location is literally next door, but the relocation in June represents a significant milestone in the continued growth at Maccaferri as we changed from using a contract storage and distribution centre to our own store and own stores' people. The new premises offer improved logistics all around and include increased yard, warehouse and office space.

We believe this facility will further improve our services and

efficiencies to both our local clients and customers nationwide.

So if you are in the area, either collecting goods, passing by or visiting Auckland on other business from out of town, we invite you to pop in and have a tea or coffee and refresh yourselves about our services, technical support and product portfolio of Engineered Environmental Solutions to help provide that competitive edge to your business.

Also in this issue

Havelock North Ornamental Gabion Wall	2
Fiordland Experience.....	2
White Pine Reinforced Embankment	3
Geosynthetic Reinforced Structures Workshop	4
Introducing Narinder Singh & Tammie McDowell	4

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REINFORCED EMBANKMENT WHITE PINES

An emergency repair was required after a large drop out occurred on State Highway 2 between Napier and Wairoa as a result of heavy rainfall. The resultant high river flow eroded the bank below the State Highway. The threat of further collapse of the State Highway combined with a near vertical 10metre drop to the river below necessitated the urgent repair at this site.

A reinforced embankment 9m high by 30m in length was designed to be founded in the stream bed below the road to protect the road edge from collapse. The Maccaferri **Terramesh** wall system, consisting of a **gabion** facing and **Terramesh** reinforcing panels was selected for the lower wall section to provide both flood control and bank stabilisation within the design flood zone. The use of the **Terramesh** system ensures that the base of the slope is free draining preventing the build up of pore pressures during river draw down conditions as well as protecting the slope from the erosive forces expected for the life of the structure. Galmac/PVC coated **Terramesh** panels and gabions were used to meet durability requirements. Galmac is a Zinc/5% Aluminium alloy mischmetal coating which has replaced the traditional zinc coating for wire mesh products as it offers greater than three times the corrosion resistance to standard galvanised wire.

The upper reinforced soil slope consisted of primary reinforcement layers of Fortrac 35 at 1metre intervals, with secondary **Tensar** SS20 geogrid layers at 500mm intervals between the **Fortrac** layers to assist with facing stability. Soil filled bags were used to create the slope angle of the geogrid wrap around structure.

Excavation was carried out in two stages. The first stage followed the initial excavation line to allow construction along the stream of the **Terramesh** structure and rock rip rap. At this point the Engineer reviewed the stability of the back face of the excavation. The remaining excavation was carried out to allow the construction of the geogrid reinforced fill following completion of the gabion and **Terramesh** reinforced fill construction. **Megaflo** drainage located at the back of the reinforced soil blocks was used to intercept and drain expected groundwater flow.

The combination of **Terramesh** and **Fortrac** ensure that the technical requirements of the site were met in terms of erosion protection and slope stabilisation and at the same time providing a cost effective way of ensuring the security of the road foundation.



Before construction



During construction



Complete structure prior to revegetation

PROJECT
White Pines

LOCATION
Napier

CONSULTANT
Opus International Consultants

CONTRACTOR
Works Infrastructure &
Brough Earthmoving

DATE
Q1 2004

PRODUCT
Megaflo, Terramesh, Gabions
Fortrac, Tensar SS20



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HAVELOCK NORTH ORNAMENTAL GABION WALL

Havelock North is a popular region situated in the heart of Hawkes Bay Wine Country.

The site for a new house in the Havelock Hills commanded sweeping views over the fertile Heretaunga Plains to Te Mata Peak and the Napier/Hawkes Bay area.

The brief was for a high quality, natural looking wall using **gabions**, with the added interest of a 20 foot container incorporated into the wall to be used as a wine cellar.

Gabion baskets have been used extensively in the architectural construction of ornamental entrances for a variety of buildings, vineyards and retaining walls.



PROJECT
Ornamental Gabion Wall

LOCATION
Havelock North

CONSULTANT
Property Designz Ltd

CONTRACTOR
Gair Contracting

DATE
Q3 2004



The Galmac coated **gabion** baskets were constructed into 4 walls up to 2m in height erected around this exposed and hilly site.

Gair Contracting completed work to a very high standard to effect very clean, crisp lines.

The finished **gabion** wall is an aesthetically pleasing structure of a very high quality, blending in with the environment and giving protection from the elements.

FIORDLAND EXPERIENCE SUPPORTS GABION CONFIDENCE

Maccaferri NZ were instrumental in getting the **Terramesh** system established worldwide with the first walls incorporating mesh panels being constructed in 1986 along the Kaikoura coast.

The system was very popular and by 1994 over 200 **Terramesh** walls had been constructed in NZ with many of these being in the South Island due to the nature of the terrain and the availability of materials.

In particular some large walls were constructed in 1994 in the Fiordland area at the bottom of the South Island as a result of severe rainfall events. This area is known as one of the wettest on earth with Milford Sound recording an average of 7.2 metres of rain per year. Up to 250mm has been recorded in 24 hours.

Combined with the rugged terrain some unique challenges to road construction are created. Just to make it more interesting the region is in a major seismic zone and has experienced some significant seismic events with a M7.3 off shore in 1994 and a M5.6 as recent as Anzac day.

While there had been no recorded problems with any of these walls, due to the remote location, a site visit tour was recently conducted by Maccaferri personnel as part of promotional visits to wall designers in the Southland and Queenstown area.

We are pleased to report that the **Terramesh** structures are in excellent condition with no signs of any movement. We were impressed not only by the impressive landscape but by how well the gabions were integrating into the landscape with lichens, ferns and trees all growing happily on the older structures.



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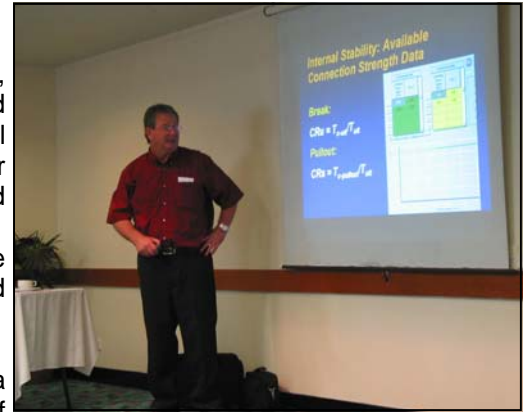
GEOSYNTHETIC REINFORCED STRUCTURES WORKSHOP

The increase in slip repair work from the recent floods along with the additional motorway and infrastructure work proposed by Transit New Zealand has resulted in a greater emphasis being placed on the use of geosynthetics in designs, in particular the use of geogrids in slip repairs and reinforced soil wall construction.

As part of our industry commitment to training and knowledge transfer, Maccaferri were very pleased to help co-ordinate a visit to New Zealand by Professor Dov Leshchinsky, who works actively with the US Federal Highways and various US State DOT's in presenting courses to their State Engineers in the design of reinforced soil slopes, walls and embankments and who has authored over 100 papers on the subject. A total of 5 workshops covering both the North and South Islands were organised through the New Zealand Institute of Highway Technology and sponsored by Maccaferri.

This provided an ideal opportunity for New Zealand engineers to obtain a better understanding of current reinforced soil principles, types of systems available, which reinforcement properties are important and their application in design. A special section relating to the performance of segmental walls in shaking table tests was included in the series of workshops.

The shaking table tests of full scale segmental walls was of great interest to all attendees as seismic load affects are critical to the performance of structures. The ability of these walls reinforced with geogrid to resist a "Kobe type" earthquake event were highlighted in a series of three videos. The strong interest and attendance throughout the Country confirmed the success of these workshops.



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Narinder Singh
Stores Person —Auckland
Narinder joined the Maccaferri Team in February 2005 and co-ordinated the new store's operation



Tammie McDowell
Sales & Marketing Assistant
Tammie joins Maccaferri with an environmental design background.

For further information about these projects or any of the products listed Freephone 0800 60 60



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