

CASE STUDY

Double Twist Mesh

Project: Hill Rd Green Terramesh
Date: May 2009
Client: Napier City Council
Location: Napier, Hawkes Bay



Green Terramesh

An unstable section of road, with the possibility of deep global failure, was encountered with the new road construction along Hill Road, which leads into the Esk Valley from Bayview in the Hawkes Bay. The structure had to support the road that incorporated subsoil drains wrapped with **bidim® A19** geotextile. A large concrete Stormwater chamber had to be located in the middle of the structure.

Green Terramesh is a cost effective alternative to gabions, where the availability of a suitable gabion rock is an issue. By utilising the **Green Terramesh** system, the additional width of road required could still be achieved. Like **gabions** each individual unit is laced to the adjacent units forming a monolithic structure that once complete is capable of taking up external loads including the seismic forces considered for this site with minimal noticeable deformation. Ease of construction with the preformed **Green Terramesh** units set at 70 degrees enabled completion of the structure within 2 weeks. **Tensar RE** geogrid layers provided the main soil reinforcement. Combining **Green Terramesh** for the facing and Tensar, which can be varied both in strength and length according to the height of the structure, provides a high level of design flexibility and a permanent cost effective solution which blends into the surrounding landscape once vegetation is established.

Construction of the 5 layer high **Green Terramesh** system was achieved with 4 staff, a 20 tonne digger, a roller and light plate compactor used for area close to the face. **Enkadrain**, a geocomposite drainage blanket, was installed between the cut slope and the new reinforced fill to limit ingress of groundwater into the reinforced structure, minimising the development of pore pressures within the reinforced fill zone.

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Initial Hill Rd site



Green Terramesh Units being assembled



Completed Green Terramesh Structure

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