Gabions & Reno Mattresses

Case Study

Geofabrics

Project:	Bogong Power Development
Date:	October 2009
Engineer:	HALCROW
Contractor:	Groundtech (Terramesh Sub-Contractor)
Location:	Bogong Village, Victoria

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Terramesh Retaining Wall

Energy Company AGL Energy has constructed a new $230 million underground hydro-electricity station at Bogong Village. The 140-megawatt power station, located in the village beside Lake Guy, adds the final power station to the Kiewa Hydro Electric Scheme as it was envisaged in the 1950s.

The project does not involve building a new dam but instead will bring water via a 6.5 kilometre underground tunnel from the existing McKay Creek Power Station to the new station at Bogong before recycling the water yet again through Clover Power Station and then the West Kiewa Power Station.

The Bogong Power Station will produce an additional 140MW of electricity and generate 94 000 MWh of emission free new renewable electricity each year. This is enough to supply approximately 18,000 Victorian households' annual electricity usage, abating around 93,000 tonnes of greenhouse gas emissions each year

An important component of the project was the retaining structures at the main entrance to the PowerStation. Being a cut and cover structure, the PowerStation required large retaining walls up to 15m high to allow for full access to the building and visitors centre. The mandate for the retaining walls was that the structures would need to integrate into the surrounding environment due to the highly sensitive nature of the area.

A design suggestion was provided to **Halcrow** by **Geofabrics** which included extensive technical information and a preliminary stability analysis using the MACSTARS design software. A number of options were considered but due to the merits of the Terramesh Mechanically Stabilised Earth system this was accepted as the retaining solution of choice. The Terramesh system, which comprises of a Gabion facing with woven mesh soil reinforcement, offers unmatched flexibility, cost effectiveness and constructability.

To ensure a high quality installation was achieved, the project tender document stated that only a Geofabrics approved, sufficiently experienced specialist installer could conduct the Terramesh works. A series of sample units were also required to be constructed to demonstrate the installer's competence in the system installation. **McConnell Dowell** engaged the services of **Groundtech**, a specialist Gabion contractor based in Victoria, to install the Terramesh walls .

Gabion Facing With Woven Mesh Soil Reinforcement

The Completed 15m High East Wall

The Maccaferri Terramesh system has been successfully used in Australia for almost 25 years. The initial technical research was conducted at the University of NSW in the 1980's and this research has proved paramount in the systems international acceptance.

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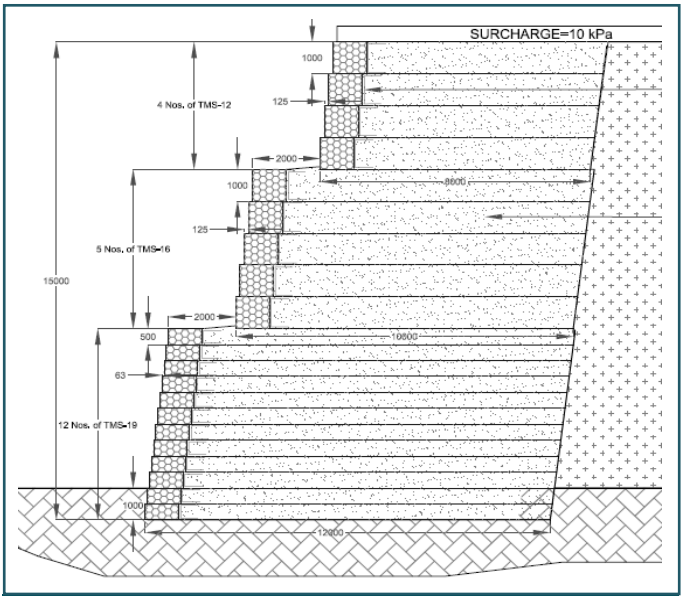
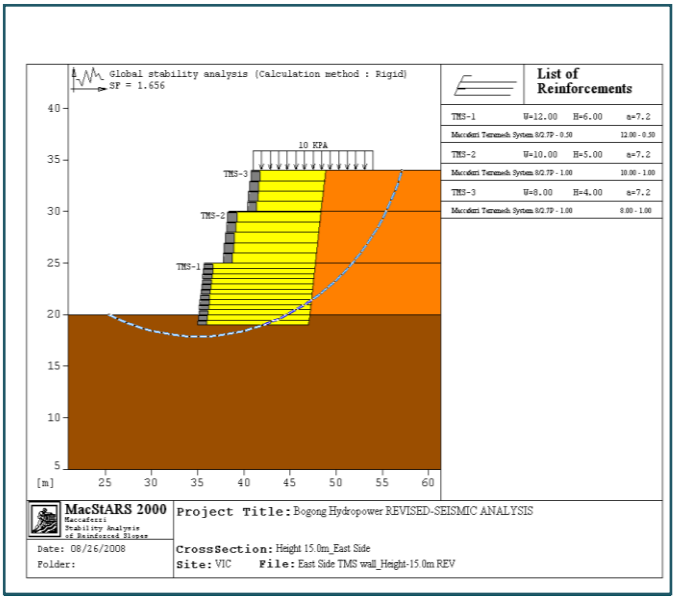
The Terramesh Walls At The PowerStation Entrance



Typical Terramesh Wall Section



Preliminary MACSTARS Stability Analysis

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