



## GEOFABRICS CASE STUDY



# SECURING A STEEP SLOPE ON THE WAIKATO EXPRESSWAY WITH GEOWEB

## PRODUCTS USED

### Presto Geoweb® Cellular Confinement Geocell System

- Consists of a robust three-dimensional structure housing a network of interconnected cells that confine and compact soil
- Widely used for load support, erosion control, slope stability, retaining structures and high velocity channels
- Comes in collapsed, lightweight panels which can be handled and installed easily and safely onsite
- Eco-friendly soil stabilisation solution that blends into the natural environment
- UV resistant cell structure can withstand harsh environments



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## PROJECT DESCRIPTION

Waikato Expressway is a 102km long four-lane highway located in the North Island of New Zealand. Construction commenced in 2016 to expand the Waikato Expressway with \$837m invested in the project to build the 21.8km long Hamilton Bypass. The completion of this section will reduce the travel time from Auckland to neighbouring suburbs, resulting in lower fuels costs and less congestion.

The client, Waka Kotahi was looking for a solution to assist with stabilising a steep slope on the Hamilton Bypass. Geoweb Cellular Confinement Geocell System was suggested as the client wanted a natural-looking slope.

## OUR SOLUTION

Geofabrics worked closely with Presto Geosystems on a design to secure the slope and protect it from erosion. A total of 56 Geoweb panels were laid out to confine and stabilise the surface of the 1,208m<sup>2</sup> slope. The installer, Ancor Loc connected the system using ATRA Keys and secured it with TP-225 tendons that were tied to a half buried wooden post. After installation, the slope was filled with topsoil and hydro seeded to encourage vegetation.

The challenge in this project was the limited access to the crest of the slope, as the owners at the back of the slope had prohibited access through their property to reach the site. Due to the steep slope face, the use of machinery was not possible. To address this problem, the initial design had to be modified from using a traditional anchoring system to a deadman trench. Decreased tendon spacing was required to handle the weight of the topsoil which helped overcome the limited access to the crest of the slope without compromising the strength of the Geoweb system.

The completion of this project presented the client with the desired outcome of a natural-looking grass slope. The client was pleased with the cost-savings that Geoweb provided and was reassured by the slope's stability and protection from erosion.



1,208m<sup>2</sup> of  
**Geoweb**  
installed



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