

GEOWEB®

STEEP SLOPE STABILIZATION

River Embankment



DONSIDE DEVELOPMENT

Aberdeen, Scotland

3D Confinement System Provides Vegetated Cover over Steep Soil-Nailed Slope Near the River Don.

Project Background

Albion Drilling Group Ltd was employed by project contractor Safedem to stabilize and encapsulate an existing embankment situated along the River Don in Aberdeen Scotland. Albion was first tasked with stabilizing the steep embankment with soil nails, followed by installing a 600mm (24 in) thick encapsulation layer consisting of both Class 6G Stone and top soil. The encapsulation layers were held in place through the use of rock fall netting. A system to cover the encapsulated topsoil/aggregate layer presented a challenge.



CONSTRUCTION

Infilling GEOWEB sections with topsoil

Value-Engineered Slope Cover System

UK geosynthetics supplier, Greenfix UK, was provided the original site drawings for review. Greenfix offered a value-engineered solution that changed the original design of two layers of a thinner cross-section, geotextile-based confinement system to one layer of 300mm (12 in) deep Presto HDPE GEOWEB material secured by high-strength tendons and ATRA® tendon clip load transfer devices.

3D HDPE GEOWEB Solution

The GEOWEB® 3D confinement system was ultimately chosen to provide a soil retention cover over the layers—with the goal of creating a visually-appealing and stable vegetated embankment at this high-profile location.

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GEOWEB /ATRA Tendon Clip Slope Anchorage System

*2X stronger pull-through
strength than other load
transfer devices.*

ATRA Tendon Clips are load transfer devices that transfer slope gravity forces from the GEOWEB cell wall to the tendon. They then connect and lock securely through the GEOWEB cell wall I slots allowing for preassembly at the top of slope.

Preassembly minimized work-
er time on the steep slope and
reduced the risk of accidents.

Take Advantage of Our
Free Project Evaluation



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Slope Details

Angle: 1.2H:1V | Length: 9.75 m (32 ft) | Vertical Height: 6.25 m (20.5 ft)



Installation of the GEOWEB Tensioned Cover System

Greenfix UK's technical team proposed a suitable stake anchorage pattern for the GEOWEB system to supplement the tendon/ATRA tendon clip anchorage. Greenfix also provided site support to Albion Drilling to ensure that the installation proceeded smoothly.

The total amount of GEOWEB material used on site totaled 4000m² (40,000 sf). Site work was completed in late Spring—by Summer a stable green slope was established.



Scenic Boardwalk Traversing the Completed Vegetated Slope

Project information and material supplied by GREENFIX UK