

Highway Retaining Wall

Embankment Retention, Webwall, Dunsop Road, Clitheroe, UK



CASE STUDY

Project Description

Dunsop Road is part of the Queen's estate in East Lancashire. The road runs through the popular Forest of Bowland, an Area Of Outstanding Beauty (AONB). Climbing up the steep embankment above the River Hodder, Dunsop Road suffered extensive damage. This was due to heavy rainfall runoff from the meadows above which closed the road for several months. The embankment had suffered a translational slip cutting into the road edge which was then exacerbated by the runoff water and subsequent erosion.

The Challenge

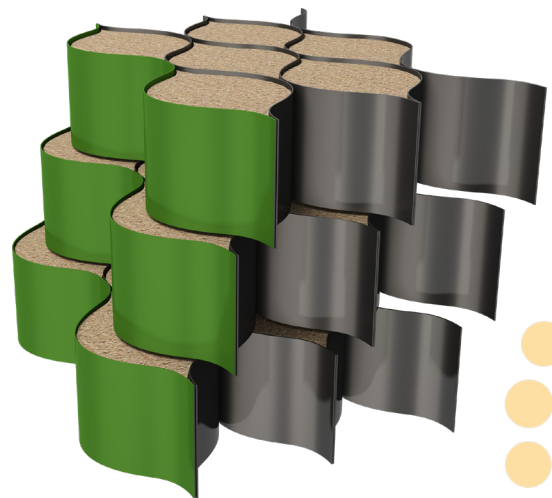
Due to the steep slopes and limited access it was vital that a solution was found which would be easy to install and would not require large amounts of heavy machinery. The ground was heavily saturated and any excavated fill would not be suitable for re-use. As the road is in an environmentally sensitive area there was a strong precedent to try to find a green and as natural finish as possible. With the continuing heavy rains it was not safe to attempt further works until conditions had improved and the road is a key spine road for visitors and the local residents. This put pressure on the speed of any proposed solution, as closing the road would cause long detours. A retaining solution was required which would not overload the steep embankment, create a green finish and be quick to install without heavy machinery.

The Solution

The fill had to be replaced with as light a fill as possible to reduce bearing pressure and to prevent further slips.

Project Information

Client	Lancashire County Council
Contractor	Lancashire County Engineering Services
Product	ABG Webwall GSW250
Quantity	135m ² of retained face
Benefits	<ul style="list-style-type: none">• Easy to install and fill by hand• Green vegetated natural finish• Rapid installation reduced programme time



ABG Webwall Retaining Wall

ABG LTD

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An expanded clay ceramic bead-like product with up to 85% less bulk density and 75% reduction in horizontal pressure on earth structures was selected. This had to be contained and compacted. **ABG Webwall** was chosen for the retaining wall to contain the fill, as it was easy to install and compact using light machinery. The cellular system is opened and pinned to the shape of the slope to blend with the rest of the embankment. Webwall front facing panels were over filled with local topsoil and seeded with indigenous seed mixes to provide a green finish blending in completely with its surroundings.

As the product is manufactured and supplied in panels which are then pinned into place and expanded the installation time is dramatically reduced in comparison with other methods. This minimised down time and contributed to the road reopening four days ahead of schedule.

The ABG Service

ABG provided full technical support, including design and installation supervision.



Webwall pinned into place in layers filled with the light-weight aggregate and compacted by hand. This created a stable reinforced retaining structure supporting the road with minimal load on the embankment.



Translatinal slip cutting into the road causing closure of the road through the Forest of Bowland



Finished green stabilised embankment

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