



**Tensar Case Study** Ref 223

# **Tensartech Greenslope System, A1(m) Wing Walls, Bowburn, Durham, UK, 2008**



## **BENEFITS TO CLIENT**

A highly attractive vegetated appearance, using rapid and sustainable construction.

## **THE PROBLEM**

Wing walls for a new highway bridge up to 8m high required an aesthetic natural finish and a steep face angle. The original design carried out had the use of Polymer grids wrapped around sand bags to form the 65 degree face angle.

## **THE SOLUTION**

Tensartech GreenSlope earth retaining system, saving up to 20% in site time over the tender wrap-around face geogrid system faced systems.

Tensar Case Study

## PROJECT DESCRIPTION

The new A668 road, which opened in October 2008 provides a strategic link between the A1(M) and the A19 avoiding Bowburn. It crosses over the existing road leading to the hamlet of Old Quarrington to the east of Bowburn.

Design Engineers were keen on using a vegetated slope solution for the new bridge wing walls for aesthetic reasons particularly as the walls are high and are prominent. Reinforced concrete would have been inappropriate as well as more expensive. Durham County Council prepared a reinforced earth design using vegetated wing walls sloping at 65° to the horizontal. Tensar International was involved in checking the design calculations.

Having previously evaluated wrap-around systems, Balfour Beatty Regional Civil Engineering had found that they were relatively labour intensive and that the vegetated surface can take several weeks to achieve a satisfactory finish. As a result, the project engineers were keen to expand on their earlier experience with Tensar *tech* earth retaining systems and asked Tensar International to propose an alternative facing system.



The Bowburn project used locally sourced crushed concrete fill to create slopes up to eight metres high reinforced with layers of Tensar uniaxial geogrid. The geogrids were rapidly fastened with a polymer bodkin joint to the steel mesh facing units which were lined with a composite biodegradable mat and topsoil layer.

## CONTRACT DETAILS

**Contractor:**  
Balfour Beatty Regional Civil Engineering

**Client:**  
Durham County Council



Marketing Department  
Tensar International Limited  
Cunningham Court  
Shadsworth Business Park  
Blackburn BB1 2QX  
United Kingdom  
Telephone: +44 (0) 1254 262431  
Facsimile: +44 (0) 1254 266867  
Email: [info@tensar.co.uk](mailto:info@tensar.co.uk)  
[www.tensarinternational.com](http://www.tensarinternational.com)

**Tensar** is a registered trade mark