



Tensar Case Study Ref 217

Tensartech GreenSlope System Greater Bargoed Community Regeneration Scheme, Retail Development Plateau, UK, 2008



BENEFITS TO CLIENT

A highly environmentally sustainable and cost effective construction which allowed the re-use of colliery spoil as site won fill.

THE PROBLEM

The need to build a 22m high plateau out from the hillside with a 60-degree face angle as part of a community regeneration retail development project providing an additional 12000 square metres of development land in the heart of Bargoed.

THE SOLUTION

Tensartech GreenSlope utilising Tensar uniaxial geogrids and Tensar pre formed steel mesh facing. Colliery spoil was used throughout the construction as the reinforced fill.

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PROJECT DESCRIPTION

Post award, HGJV consulted with Tensar and proposed a more cost effective scheme which utilised the on site colliery spoil. Tensar International assisted using previous experience with neighbouring projects such as New Tredegar (see Tensar case study No 182) to offer real cost savings by re-using site won colliery spoil as the reinforced fill.

Design parameters were established for re-use of colliery spoil and Tensar were contracted to provide design assistance to the successful contractor's specialist sub-consultant and the client. Tensar designed the internal stability while the contractor's specialist sub-consultant was nominated to tie Tensar's design into the overall scheme including global stability checks of the whole retail plateau.

Tensar supplied the geogrids and slope facing materials and also provided a design and supply service for the approach ramp GreenSlope and associated abutment which forms the integral bank seat for the north west end of the new Bargoed Newydd Viaduct. A selection of face options from the Tensartech portfolio were selected to help the structures blend into the surroundings. For example underneath the bridge structure a steel faced stone clad option was used.



The completed design is amongst the highest tiered reinforced earth embankments to be constructed in the UK and the highest to make use of a recycled material (colliery spoil). Over 6,000m² of reinforced soil face was installed between 2007/08. As well as providing significant cost savings to the project, this first class example of sustainable engineering has resulted in major environmental benefits, with approximately 150,000t of quarried stone being replaced by what was previously classed as a waste material. There are also major benefits to both the local and the general environment with approximately 7,500 lorry movements removed from the local road network.

CONTRACT DETAILS

Contractor:
Hochtief Griffiths JV

Client:
**Caerphilly County
Borough Council**

Consultant:
Capita Symonds

Sub-Consultant:
Cass Hayward /Webbers

Funding Body: Welsh Assembly Government.



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
www.tensarinternational.com

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