

Case Study

Tenax TT, HM3 & Rhyno®

Pont Briwet



Location:

Pont Briwet
Penrhyndeudraeth
Near Porthmadog
Wales

Project Description:

Temporary Causeway which would withstand being submerged by tidal activity during construction.



Technical Requirements:

- Maximum height 4m
- Length 200m
- Submerged by tidal activity
- Withstanding operation of heavy plant

Client

Gwynedd County Council

Consultant:

Hewson Consulting
Engineers

Contractor:

Hotchtief (UK)
Construction Ltd

Pont Briwet was built in 1860 and was a Grade II listed wooden structure. The structure carried a single track rail line and a single lane private toll road over the river Afon Dwyryd between Llandecwyn and Penrhyndeudraeth railway station.

With a 20mph speed for rail traffic and having a 2 tonne weight limit for highway traffic combined with narrow road and restricted levels of traffic made Pont Briwet the perfect candidate for replacement. In 2013 work commenced on the bridge to construct a new road and bridge.

In order to install the piled foundations for the new structure the designers, Hewson, determined that a causeway would be constructed from both sides of the shoreline into the estuary. The temporary causeway was constructed using locally sourced stone and Tenax geogrids for reinforcement allowing the operation of heavy plant.

Tenax TT Uniaxial geogrids were employed for slope stability and Tenax LBO HM geogrids were employed

for basal reinforcement of the working platform to support the pressures applied by the cranes and piling rigs. To alleviate the effects of erosion and washout of fines Rhyno® GW8129 was installed at the face of the slopes.

Geometry of causeway / working platform:

Max Height: 4.00m

Slope Angle: 26.5° / 45°

Base Width: 20m

Total Length: 200m

Design standards: Eurocode 7 & BS8006-2010

During the construction period the causeway was completely submerged by tidal activity on several occasions and being used for construction activity within hours of the tidal event.



Construction of the Causeway featuring original bridge



Crane operating on the platform



Piling Rig operating on the Causeway



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Harrowbrook Industrial Estate
Hinckley
LE10 3DU
Tel. 01455 617 139
sales@geosyn.co.uk
www.geosyn.co.uk

“Thanks to Geosynthetic, we were able to construct a working platform that allowed heavy civil activities to be undertaken within tidal conditions. One of the major benefits was even though the platforms were submerged on a regular basis little to no work was required to platforms after each tidal event. Without the working platform solution, the scheme deliverables would have been very difficult to achieve.”

Matthew Mosley - Site Agent



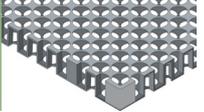
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Bentotex® GCL
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Cellweb® TRP
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Golpla Pregrown
Ready To Lay Paving System



Telegrid
Woven Polyester Geogrid



DuoDrain®
Composite Drainage Product



Interlock
Extruded HDPE Geogrids



Televev
High Strength
Woven Geotextile



Erosion Control
Comprehensive Range



Knotblock®
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Tenax
Soil Reinforcement Solutions



Ekotex®
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Landlok
Turf Reinforcement Mat



Total Traffic Exopave
Heavy Duty Paver



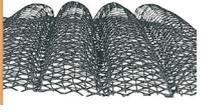
Fiberforce®
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Erosion Control



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Erosion Control Mat



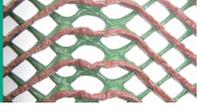
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