



Case

STUDY

TENAX TT, HM3 & RHYNO®

Pont Briwet

Temporary Causeway



MARKET SECTOR:

Commercial



LOCATION:

Pont Briwet, Penrhyndeudraeth
Near Porthmadog, Wales



CONSULTANT:

Hewson Consulting Engineers



CONTRACTOR:

Hotchtief (UK) Construction Ltd

The

BACKGROUND

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 Dwyrdd between Llandecwyn and Penrhyndeudraeth railway station.

Our Client's

REQUIREMENTS

A sustainable solution for tree root protection.

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.



Our Value Engineered **SOLUTION**

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: 26.50 / 450
- 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.

“Thanks to Geosynthetics, 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

