

Further information:

Edenvale Young Associates

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Project Description number:

EVY0350

Project Type

Flood Risk/Consequence
Assessment

Flood Forecasting

Detailed Design

Calibration & Optimisation

Flood Map Challenges

Scour & Geomorphology

Water Framework Directive

Environmental Impact
Assessment

Training

Key Words:

Scour Protection Design
Development of tidal / surge
boundary conditions
Hydrology (FEH)
Geomorphological Monitoring
Flood Risk Management

Client and other Organisations:

Gwynedd Consultancy
Network Rail
Hochtief Construction
Hewson Consulting Engineers
Beazley Sharp
Nick Stilwell Associates

Pont Briwet, Geomorphological Modelling & Monitoring

Edenvale Young Associates were commissioned to provide a strategy for monitoring geomorphological change upstream and downstream of the Pont Briwet located in North Wales during the construction and of the replacement structure.



Illustration 1: Pont Briwet (Existing Structure)

Project Details

Edenvale Young in conjunction with other contractors were appointed in 2013 to undertake the design of the Pont Briwet bridge in North Wales.

The bridge is located in an SAC within a highly dynamic estuarine environment

In order to address concerns associated with the impact of the temporary works Edenvale Young developed a geomorphological monitoring strategy which included pre-construction survey (LiDAR & bathymetric), geomorphological modelling (TUFLOW FV), time lapse photography, topographic

survey monitoring and aerial photography.

Preliminary modelling indicated that a scour hole would develop on the downstream side of the bridge and that there were recessionary pressures on the northern bank which would impact on the salt marshes.

These conclusions were confirmed during the construction of the works as part of the monitoring strategy. The collection of monitoring data also allowed calibration of the TUFLOW FV model and a range of scenarios were tested to assess the impact of installing a temporary and cofferdams within the estuary.