



Dyffryn Conwy Flood Alleviation Scheme

Upgrading flood defences to protect the local community

Severe flooding in the Conwy Valley (Dyffryn Conwy) in February 2004 and January 2005 caused damage to residential and commercial properties in both Llanrwst and Trefriw. Following these flood events, Environment Agency Wales (EAW) initiated a flood alleviation scheme to address flooding issues in these communities.



The Conwy Flood Alleviation Scheme was jointly funded by the Environment Agency Wales and The Welsh Assembly Government. The River Conwy flows through the valley and discharges into the Irish Sea and is tidally influenced up to the village of Trefriw. The valley has experienced seven floods in the last 12 years with the three worst events occurring in 2004, 2005 and during the scheme in November 2009.

The scheme included the construction of demountable flood defences, concrete defence walls, earth embankments, lowering of existing flood defences, road realignment and associated works. The scheme was carried out in a single phase but was split into four geographical sections. The main earth works at Trefriw included:

- The construction of the flood bank
- Cut and fill operation to lower and re-profile 1400m of existing flood banks
- The construction of livestock retreat pads in the newly created flood plain
- The landscaping of a terraced playground
- The infilling and creation of wetland habitat from the borrow pit
- The creation of a football pitch
- The construction of a road over the Trefriw flood bank

Client

Environment Agency

Principal Contractor

Team Van Oord

Duration

64 weeks

Value

£3.5m

Scope

Upgrade and construction of new flood defences





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Construction in Llanrwst took place in a conservation area and adjacent to a scheduled ancient monument and listed river wall. All construction activities took place on the busy A470 near the centre of the town. The flood defences constructed included Bauer demountable barriers, RC flood walls clad with natural stone and a demountable system specifically designed for this project. The scheme was affected by a number of environmental constraints including:

- The Gwydir Forest Mines Site of Special Scientific Interest (SSSI) and Special Area of Conservation (SAC)
- The Pont Fawr Bridge in Llanrwst scheduled ancient monument (SAM)
- The river walls in Llanrwst designated as listed structures
- Numerous archaeological finds in both Llanrwst and Trefriw
- Tree Preservation Orders (TPO) within the site boundary
- Footpaths, Public Rights of Way and highways within the site boundary
- Invasive plants, Japanese Knotweed and Himalayan Balsam

The scheme was successfully delivered within budget and to the original scope of the programme despite a major flood in November 2009.

Safe

The scope of the project presented a number of challenging environments including working amongst the public on A470 high street near the centre of the town, managing construction works within farming areas and renewing local facilities which were relocated following the installation of the flood banks. Working closely with local authorities, businesses and action groups we were able to minimise disruption whilst ensuring everyone's safety and protecting the local environment.

Innovative

We used pre-grown North American Green P550 shear stress turf to cover the spill way. An erosion protection mat is pre-seeded with a mix of robust grass seeds; once the grass has matured it is cut into strips and delivered to site ready for installation. During the works we experienced the 2nd biggest flood in the history of the area and there was no damage to the spillway.

Honest & Collaborative

We worked closely with the Environment Agency and local stakeholders to minimise disruption to local services whilst ensuring we provided comprehensive flood protection.

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