Pont Aran

Weir Removal in a Town Centre

Dam Removal Europe Sep 2017

Dam and Weir Removal in the Urban Environment
Team

- **Oly Lowe** - NRW Geomorphologist
- **John Davies** – NRW Project Manager
- **Ann Griffith** – NRW Flood Risk Management Team
- **Marianne Jones** – NRW Environmental Lead
- **Tommi Hughes and Phil Oliver** – NRW Fisheries/Biodiversity
- **Heulwen Baughn** – B&V Environmental lead and ECW
- **Will Shaw** – B&V Engineering Design lead
- **Alun Griffiths** (Contractor)
**Project**
Dolgellau Flood Alleviation Scheme

**Client**
Natural Resources Wales

**Location**
Gwynedd, Wales

**Expertise**
Flood Risk Management

**Opportunity**
Weir removal as part of flood risk management scheme

**Solution**
Removal of weir and bed-regrading
Discussions with local community groups
Archaeological record taking
Protection to bridge and wall foundations

**Outcome**
Reduced flood risk
Improved fish passage potential
Improved river connectivity
Cost-effective
Historic context
Flood Risk

Flooding from overtopping at Pont Yr Aran
Proposed Afon Wnion Defences
Residual Flooding from Afon Wnion (with Afon Wnion defence in place)
Flood Risk – raise walls?
Weir removal – effect on flood level
Benefits, risks, consultation

- Visual impact less than wall raising
- Less and shorter construction impact (short term risk to fish and sediment release)
- Local WFD and fish passage benefits
- Risk of changes in erosion and deposition - geomorphological input
- Risk to services and existing infrastructure
- Consultation with town council, local heritage group Snowdonia National Park Authority
- Works undertaken as permitted development in advance of main scheme
Archaeological record
Fish

- Consultation with local fisheries officers
- Monitoring sites (salmon, sea trout, eel)
- Timing and risk of disturbance (traffic light)
- Map of sensitive spawning locations
- Temporary works / construction mitigation
- Reinstating river bed features
Sediment control
Communication during (de)construction

- Engineering supervision 2-3 visits per week
- Client communication
- Environmental Clerk of Works
- Geomorphologist at key stages
- Communicate bed reinstatement to site foreman and surveyors
- Direct placement of larger stone and bed features
- Photos illustrating construction and reinstatement on following slides
River bed out of water

- Material management, stockpiling and re-use
- Japanese Knotweed
- Vehicle movements
Bridge invert design

- In-channel construction and flow management
- Asymmetric levels under arches
- Roughness / fish passage
- Retro-fit of low cost baffles in one arch
Flashy rivers!

- Change in level within 2 hours - just while finishing bed reinstatement on final day of works!
Photos from Black & Veatch

8 Oct 2014 – 9am

8 Oct 2014 – 3pm
Photos from Black & Veatch
Photos from Black & Veatch
Photos from Black & Veatch
Photos from Natural Resources Wales
Summary

Flood risk
Weir removal can have multiple benefits for flood risk & environment

Risks
Short term impacts and risks require management

Value
Weir removal can be cost effective compared to other options

Design
Need to consider proportionate erosion protection

Public
In urban areas expect public interest!

Communicate
Words, pictures, face to face
Thank you – any questions?

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