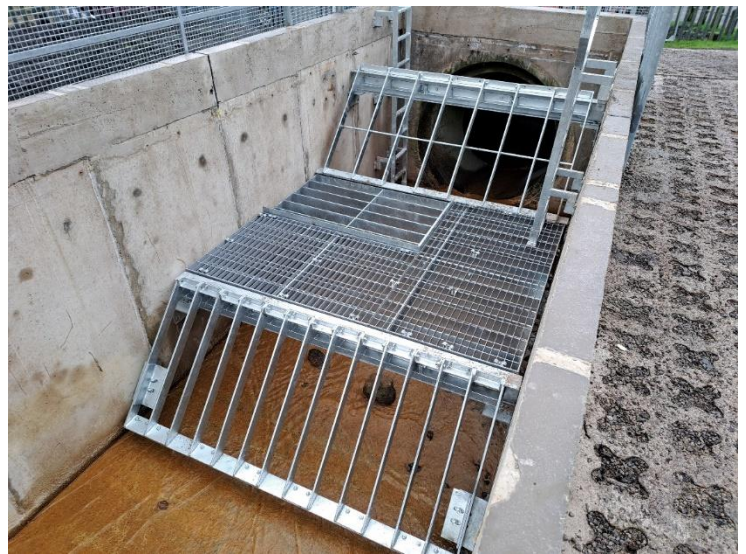




Llwynycelyn Industrial Estate Flood Alleviation Scheme

Flood Alleviation Scheme delivered to reduce the risk of ordinary watercourse and surface water flooding to 9 properties and the highway in the Porth area.

Scheme Summary	
Strategic Flood Risk Area	Lower Rhondda Fach
Location	Llwynycelyn Industrial Estate, Porth
Properties benefiting	9 businesses
Type of scheme	Culvert Inlet Improvement
Cost	£150,000
Contractor	Peter Simmons Construction
Status	Completed
Scheme Completion Date	February 2024
Funding Source	Welsh Government Resilient Road Fund



Before (left) and After (right) images of Llwynycelyn Industrial Estate Inlet improvement after scheme completion.

Scheme Background

The Llwynceilyn area in Porth is noted as an area of high surface water and ordinary watercourse flood risk based on Natural Resources Wales's Flood Risk Assessment Wales (FRAW) maps. The community of Porth is also noted as the 35th most at risk community for ordinary watercourse and surface water flooding in Wales according to the Communities at Risk Register (CaRR).

The risk of flooding to the Llwynceilyn Industrial Estate area is primarily associated with the Nant Llwynceilyn ordinary watercourse which is the primary watercourse that drains the hillside to the north of Llwynceilyn. The watercourse is heavily culverted beneath Llwynceilyn, with flooding largely attributed to culvert inlets and bank breaches.

During Storm Dennis in February 2020, a culvert inlet associated to the Nant Llwynceilyn ordinary watercourse contributed to the internal flooding of 4 commercial properties within Llwynceilyn Industrial Estate and led to flooding along the B4278 (Llwynceilyn Road). Further incidences of property flooding associated to the culvert inlet during heavy rainfall highlighted the susceptibility of the culvert inlet to become overwhelmed both hydraulically and due to debris accumulation.

Scheme Description

To address the repeat flooding issues to the culvert inlet at Llwynceilyn Industrial Estate, the Council carried out **culvert inlet improvements** to **increase the capacity** of the culverted ordinary watercourse network whilst also improving the ease of maintenance to **reduce the risk of debris blockages**.

The scheme involved the installation of a **new inlet headwall** and **debris control measures** within the watercourse to **improve hydraulic capacity** and **reduce the likelihood of debris** entering the culvert system and causing blockages. The scheme also re-established the upstream watercourse channel to **reduce potential scouring** of the banks and to improve capacity.

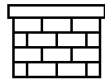
Improved access to the drainage infrastructure was also facilitated as part of the scheme for maintenance purposes.

As part of the project CCTV telemetry was also installed to monitor the watercourse and culvert inlet to provide the Council's maintenance teams with **advanced warnings of potential blockages**.

Scheme Benefits



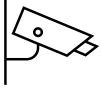
Reduced flood risk to **9 businesses and the local highway**



Improved headwall at watercourse inlet to reduce the **risk of erosion** at pipe inlet.



Improved scour protection in watercourse to **reduce risk of erosion** within the watercourse.



CCTV monitoring of watercourse inlet and **early warning systems** installed to monitor water levels.



Reduced risk from **Debris blockage** within watercourse and at inlet



Improved maintenance access for repairs and cleansing work for maintenance crews