



## Pentre Road Flood Alleviation Scheme

Flood Alleviation Scheme delivered to reduce the risk of ordinary watercourse and surface water flooding to 227 properties in the Pentre area.

Scheme Summary	
Strategic Flood Risk Area	Upper Rhondda Fawr
Location	Pentre Road, Pentre
Properties benefiting	217 residential properties and 10 non-residential properties
Type of scheme	Culvert Inlet Upgrade
Cost	£353,000
Contractor	Hammonds Construction
Status	Completed
Scheme Completion Date	January 2021
Funding Source	Welsh Government Emergency Grant



*Before (left) and After (right) images of the Pentre Road Flood Alleviation Scheme inlet*

## Scheme Background

Pentre 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 and is also noted as the most at-risk community for ordinary watercourse and surface water flooding in Wales according to the Communities at Risk Register (CaRR)

Pentre was impacted by flooding on five separate occasions during 2020. The most significant of these events is associated to Storm Dennis which occurred between the 15th and 16<sup>th</sup> of February 2020. The impact of this event at Pentre resulted in internal flooding to 159 residential properties, 10 commercial properties and extensive flooding to the highway, primarily as a result of the culvert inlet to the north of the village overtopping after becoming overwhelmed with debris from the upper catchment. The inlet was severely damaged during Storm Dennis, as shown in the before image.

## Scheme Description

The flood alleviation scheme at Pentre Road targeted the culvert inlet associated to the Nant y Pentre ordinary watercourse in the north of the village which became severely damaged following Storm Dennis. The scheme was aimed at **enhancing the capacity** of the culverted infrastructure to **better manage the flow of water** from the Nant y Pentre ordinary watercourse, **mitigate potential overland flow** issues and **improve debris control** to **reduce the risk of blockage**.

The culvert inlet improvement works comprised of upgrade works to the damaged inlet and headwall, the construction of a dedicated overflow structure and overland flow control route designed to **manage exceedance flows** from the culvert inlet, **redefining the upstream channel** and the **installation of an enlarged debris catcher to reduce the risk of blockage** to the culvert inlet and network, thus reducing the risk of flooding to the downstream community of Pentre.

Telemetry devices, including a **CCTV camera**, **rain gauge** and **water level sensors** were also installed at the Pentre Road culvert inlet to provide the Council's maintenance teams with **advanced warnings of potential blockages**.

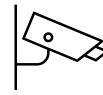
## Scheme Benefits



Reduce flood risk to **217 properties.**



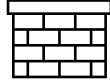
Improved the **long-term resilience** of the culvert and the downstream community.



**Installation of CCTV** to monitor watercourse inlet.



**Early warning alarm system** installed for Council maintenance purposes.



**Increased the standard of protection** of the culvert inlet.



Reduced the risk of **debris entering the culvert network** and causing **blockages.**