



Bryntail Road Flood Alleviation Scheme

Flood Alleviation Scheme delivered to reduce the risk of ordinary watercourse and surface water flooding to 149 properties and a local School in the Rhydyfelin area.

Scheme Summary	
Strategic Flood Risk Area	Lower Taf
Location	Bryntail Road, Rhydyfelin
Properties benefiting	149 properties and a local school
Type of scheme	Overflow Network
Cost	£188,585
Contractor	Calibre
Status	Completed
Scheme Completion Date	March 2023
Funding Source	Welsh Government FCERM Small-scale Schemes RCT Core Capital grant



Image of Bryntail Road Flood Alleviation Scheme

Scheme Background

The flood risk in Bryntail Road, Rhydyfelin, is due to an unnamed ordinary watercourse and its culverted network. This infrastructure is prone to hydraulic flooding and blockage caused by eroded material from the upper catchment depositing in the inlet structure.

The risk of blockage flooding to the culvert inlet and ordinary watercourse channel is both a modelled and actual risk based on the Flood Risk Assessment Wales (FRAW) maps and recent flooding events (October 2021). The latter of which resulted in 18 residential properties becoming internally flooded because of a blockage within the inlet and channel area (debris and hay bale being washed down from upstream).

Rhydyfelin 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 Rhydyfelin is also noted as the 8th most at risk community for ordinary watercourse and surface water flooding in Wales according to the Communities at Risk Register (CaRR) which was developed to provide an objective means of identifying risk and prioritising flood risk management activities at a Wales-wide, community level.

Scheme Description

The flood alleviation scheme at Bryntail Road was aimed at **reducing the risk of hydraulic and blockage-related flooding** to the downstream ordinary watercourse culvert inlet adjacent to Masefield Way. The works at Bryntail Road involved the **implementation of a diversion of flow** from an existing channel towards an existing attenuation basin, which helps **alleviate the pressure** on both the Bryntail Road flood alleviation scheme and the Maesfield Way scheme.

The goal of the Bryntail Road scheme is **to alleviate the risk of debris blockage** before it reaches any of the culvert inlet areas and to **mitigate the risk of overland flows** resulting from debris blockages within the watercourse network. The works involved the **installation of a flow control structure to divert a proportion of the flows** from the existing unnamed ordinary watercourse channel towards an existing attenuation basin to the west of Bryntail Road. This flow diversion aims to **alleviate hydraulic pressure** on the lower section of the ordinary watercourse network and reduce the risk of flooding attributed to the high-risk downstream culvert inlet located at Maesfield Way.

Additionally, **a debris basin was installed** at Bryntail Road to **reduce the risk of debris** entering the downstream network and causing blockages. Supporting works **to upgrade the existing attenuation basin to accommodate additional flow and storage** were also undertaken as part of the scheme, further enhancing flood resilience in the area. To provide advanced warnings of potential blockages, **CCTV cameras and water level sensors were installed** at the overflow structure and attenuation pond to provide the Council's maintenance teams with **advance warning of potential blockages**.

Scheme Benefits



Reduced flood risk to **149 properties and a local school**



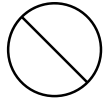
CCTV Monitoring of watercourse inlet and watercourse.



Early warning alarms installed to alert of any changes within watercourse.



Installation of water flow structure to control water flows in watercourse network during high flows.



Reduced risk of debris blockage within the watercourse network.



Reduced risk of hydraulic overload and **reduced risk of flooding** within watercourse network.