

Pre-App Drainage Statement

Existing Drainage

Public Sewers

Dwr Cymru, Welsh Water (DCWW) Asset Records show that there are no public sewers within the proposed development boundary. However, the plans identify that there is a 150mm diameter combined sewer which runs north east and joins a 225mm diameter combined sewer within the highway of Blackwood Road.

There are also two culverted watercourses in the vicinity: one which runs along the north west boundary of the development site, starting the northwest corner and running towards Blackwood road, and other running north east along Penllywn Lane. Additional investigations are necessary to confirm the route, size and condition of these culverts.

The DCWW sewers are located at sufficient distance from the proposed works that any easements required will not interfere with the proposals.

Private Drainage

The proposed works are located within the former Pontllanfraith Comprehensive School site and records identify that there is both foul and surface water drainage that served the retained buildings.

A CCTV survey has been undertaken on the private drainage and confirms that there is a separate surface and foul water network.

The foul drain runs toward the south east corner of the site and is assumed to discharge into the combined sewer in Penllwyn Lane, however further investigations are required to confirm this.

Surveys and records suggest that the surface water drainage from the retained buildings is split into two systems serving different catchments on site and discharge separately to the existing culverted watercourses, subject to further confirmation.

Current investigations of the site of the proposed building / external works has not identified any existing foul or surface water drains.

Flood Zones

The development lies 350-400m away from the Sirhowy River, Natural Resource Wales' online DAM mapping and Flood Risk Assessment Wales Map shows the proposed site development boundary to be located within Flood Zone A / 1.

Proposed Surface Water Drainage

Current best practice and the Regulatory requirements direct that new surface water drainage should discharge in accordance with the drainage hierarchy of:

1. Infiltration to the ground
2. Discharge to a water course
3. Discharge into a surface water sewer
4. Discharge into a combined sewer.

Infiltration.

Soakaway testing at the site was undertaken as part of the Phase 1 and 2 (2018 and 2022) ground Investigation by Earth Science Partnership dated May 2022. These reports identified, variable ground conditions across the site and inconsistent infiltration test results. Based on these results it is considered that utilising infiltration as the primary means of disposal will not be feasible.

Discharge to Watercourse.

The nearest open watercourse is located circa 350m from site, therefore direct discharge into this watercourse is considered not feasible.

Investigations are being undertaken to identify location of the existing culverted watercourses and the feasibility of discharging directly into it. The CCTV survey of the drainage serving the existing school buildings, indicates that there is potentially at least one existing connection from the surface water drainage into the culverted watercourse which we would be looking at maintaining / utilising for the new development, subject to confirmation.

Discharge into surface water sewer

DCWW record plans identify no surface water sewers in the vicinity of the site.

Discharge into Combined Sewers.

As previously outlined the DCWW records identify combined sewers in both Penllwyn Lane and Blackwood Road. The CCTV survey indicates that some of the site potentially discharges into the combined sewer in Penllwyn Lane, however needs to be confirmed.

In the event that the retained buildings on the site discharge to the combined sewer, this existing connection will be retained, with flow limited to a reduced discharge rate.

Sustainable Drainage Systems

To comply with Planning and SAB requirements, surface water discharge from the sport hall on site will need to be restricted to greenfield runoff, to mitigate any offsite flood risk.

As such, the surface water will be attenuated on site for the 1 in 100 + 30% climate change event plus 10% urban creep.

A drainage strategy has been drawn up for the site and identifies that the surface water runoff will be captured at source into a series of SuDS features, including swales and permeable paving to comply with the SAB requirements.

The permeable paving within the north west car park is proposed to the culverted watercourse along the north west boundary of the site drain via a flow control manhole, restricted to greenfield rates.

It is proposed that the 3G MUGA is to be self-attenuating, with additional storage as required. The car parking bays around the site are to be constructed from permeable paving with the access roads to be an impermeable construction. This proposal will provide attenuation for both car parking and access roads.

The bus drop off is to be constructed with an impermeable surface with granular attenuation sub-base to provide attenuation. The island located within the centre of the bus drop off areas is proposed as a raingarden which will take runoff from the road.

These will drain to a flow control manhole located in the south via either a piped system or a swale. It is proposed to discharge at a greenfield rate of runoff into the culverted watercourse running along the southern boundary of the site.

The existing building and associated drainage is to remain largely unchanged, however a small area of proposed constructed will need to discharge into the same outfall in Penllwyn Road. It is proposed to reduce the discharge from the existing area up to 50%.

The SAB process require a number of factors to be considered within the development, these include:

- Green / Blue Roof
- Water Quality
- Rainwater re-use
- Biodiversity and Amenity

Green/Blue Roof:

The roof structure of the proposed building will be a dual pitched and is suited to being of lightweight construction. Adoption of a green/blue roof would thus be unsuitable as the increase in dead loading would significantly increase the tonnage of steel required.

Water Quality:

Water quality benefits will be achieved through the use of the SuDS Management Train.

Rainwater Re-Use:

The end use of the existing school building with existing water supply and proposed sports hall and outdoor areas does not suit the use of rainwater recycling on a large scale, particularly within the building itself. Thus rainwater re-use will be limited to that associated with landscaping maintenance.

Permeable Paving Systems:

These will be utilised across large areas of the proposed hardstanding, in particular the external car parking areas.

Biodiversity / Amenity

The proposed drainage strategy includes SuDS features that will add to the biodiversity and amenity of the site. These along with the inclusion of the wildflower planting in the embankment between the existing school building and proposed MUGA means that the development is in compliance with the SAB guidance.

Discharge Rate & Volume Control:

Equivalent greenfield values will be achieved through the use of the SuDS Management Train.

Attenuation and Flow Control:

Attenuation will be achieved across a series of SuDS features including permeable paving and swales and with flow control being achieved using a formal flow control device prior to outfall.

Foul Drainage

The new building will include toilet blocks, sinks and shower blocks which will be discharged into the combined sewer located in Penllwyn Lane.