

# Ysgol Iolo Morganwg

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## Proposed Drainage Strategy

Prepared for:  
Kier on behalf of Vale of Glamorgan

Date:  
21 August 2025

Prepared by:  
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# Table of Contents

<b>Document control sheet</b> .....	<b>ii</b>
<b>1 Introduction</b> .....	<b>2</b>
<b>2 Existing Site</b> .....	<b>3</b>
2.1 Site Location and Description .....	3
2.2 Flood Risk.....	4
2.3 Existing Drainage Arrangements .....	4
2.3.1 Public Sewers .....	4
2.3.2 Surface Water (Private).....	6
2.3.3 Foul Water (Private).....	6
2.3.4 Highway Drainage.....	7
2.4 Existing Contributing Areas and Run-Off Rates .....	8
<b>3 Proposed Development</b> .....	<b>9</b>
3.1 Development Proposals .....	9
3.2 Foul Water Drainage .....	10
3.3 Surface Water Drainage.....	10
3.3.1 S1 - Surface Water Run-off Destination.....	10
3.3.2 S2 - Surface Water Run-off Hydraulic Control.....	14
3.3.3 S3 - Water Quality.....	17
3.3.4 S4 - Amenity .....	17
3.3.5 S5 - Biodiversity .....	17
3.3.6 S6 - Design of Drainage for Construction and Maintenance and Structural Integrity .....	18
<b>4 Statutory Approvals</b> .....	<b>19</b>
4.1 Water Authority .....	19
4.1.1 Pre-Planning Advice (PPA) .....	19
4.1.2 Section Agreements.....	19
4.2 SuDS Approval Body .....	19
<b>5 Conclusion</b> .....	<b>21</b>

## List of Tables

Table 1: Site Information.....	3
Table 2: Existing Greenfield Run-Off Rates by Return Period .....	8
Table 3: Surface Water runoff discharge hierarchy appraisal.....	11
Table 4: Interception Strategy Summary .....	14

## List of Figures

Figure 1: Site Location (ref Open Street Map) .....	3
Figure 2: Site location at greater scale (ref Open Street Map) .....	4
Figure 3: Extract of DCWW Asset Record Mapping.....	5
Figure 4: Image of TW Engineering Layout ref C/110-500 by Quad Consult .....	6
Figure 5: Extract of the GPR services survey for the site (Azimuth, 2025) .....	7
Figure 6: 3D Isometirc view of the proposed school .....	9
Figure 7: Landscape GA, HLM Architects, Aug 2025.....	9
Figure 8: TW land drain contributing area assessment.....	13

## List of Appendices

A.1 Appendix A – Runoff Calculations	
A.2 Appendix B – Soakaway test locations	
A.3 Appendix C – Proposed Drainage Strategy Layout	
A.4 Appendix D – DCWW PPA Response	
A.5 Appendix E – Initial SAB pre-application consultation notes	





# 1 Introduction

Stantec have been commissioned by Kier on behalf of the Vale of Glamorgan to provide civil engineering consultancy services for the proposed Welsh medium primary school of Ysgol Iolo off Dunraven Close, Cowbridge.

This report is required to support the SAB pre-application submission and planning process.

The objectives of the report are to;

- » Review the existing drainage arrangements on site for both surface and foul water;
- » Assess the feasibility of Sustainable Drainage Systems (SuDS) features within the development to control and discharge surface water runoff in line with the requirements of the statutory National Standards for Sustainable Drainage Systems;
- » Assess the options for the disposal of foul water from the development; and
- » Provide a preliminary design for surface water (SuDS) systems including indicative sizing of storage/attenuation features and conceptual plan suitable for inclusion in a pre-application submission to the local authority.
- » Capture the feedback from the SAB at pre-application stage and present a drainage strategy incorporating comments where applicable to support the planning application for the development.

The following tasks have been undertaken to complete this report;

- » A desktop investigation of the site's existing foul and surface water drainage arrangements;
- » Outlined anticipated solutions for foul sewage disposal, and the sustainable management of surface water runoff. This includes preliminary calculations, in order that the conceptual designs may be agreed with the relevant authorities;
- » Determined the area of impermeable surfaces added by the proposed development and estimated the equivalent Greenfield run-off rates for the site area;
- » Assessed the feasibility of using infiltration as a disposal method, based on available information for the ground and site conditions;
- » Estimated the size of storm water storage needed to manage run-off from the site post-development, using industry standard drainage design software (InfoDrainage);
- » Identified areas of the site for SuDS and provided general information on their maintenance requirements.

Several sources of information have been used to compile this drainage strategy. Whilst Stantec believe them to be trustworthy we are unable to guarantee the accuracy of the information that has been provided by others.

This report is based on information available at the time of preparation. Consequently, there is potential for further information to become available. These changes may lead to future alteration to the conclusions drawn in this report for which Stantec cannot be held responsible.



## 2 Existing Site

### 2.1 Site Location and Description

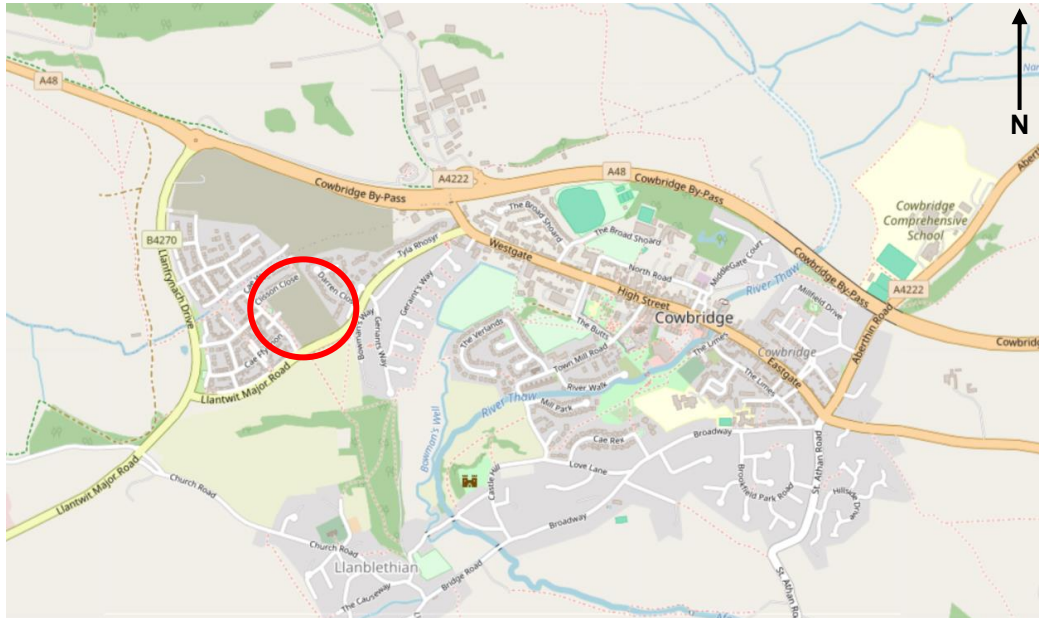


Figure 1: Site Location (ref Open Street Map)

The proposed site for Ysgol Iolo is located at the intersection between Dunraven Close and Llantwit Major Road, Cowbridge, CF71 7FN as shown in Figure 1. The surrounding area is a residential area comprising for the most part the newly constructed Claire Garden Village by developer Taylor Wimpey. Considering Figure 2, neighbouring the site is:

- » Residential dwellings to the east;
- » Llantwit Major Road to the south;
- » Dunraven Close with residences to the west; &
- » Residential dwellings to the north.

Table 1: Site Information

Address	Dunraven Close, Cowbridge, CF71 7FJ
Grid Reference	X- 298426, Y- 174661
What3Words	Unstated.mattress.victory
Datum (AOD)	59.0m



Figure 2: Site location at greater scale (ref Open Street Map)

## 2.2 Flood Risk

A detailed assessment of flood risk has been undertaken by Stantec, reference to be made to the separate Flood Consequence Assessment report, ref 333701534-STN-XX-XX-RP-WENV-0001-P01.

The report has identified that according to the current Natural Resources Wales (NRW) Flood Map for Planning, the site is located within Flood Zone 1 (low probability). The site is considered to be at a low risk of flooding from surface water and all other assessed sources.

## 2.3 Existing Drainage Arrangements

### 2.3.1 Public Sewers

Dwr Cymru Welsh Water (DCWW) asset records for the site show that there are no public sewers crossing the site area. Within the surrounding area, sewers are present which serve domestic discharge from residential properties. To the west and north, dedicated surface water and foul water sewers are shown which

have been installed to serve the Taylor Wimpey residential development. To the east a section of combined sewer can be seen which reflects the age of the properties it serves. An extract of the DCWW mapping which shows this is included in Figure 3.

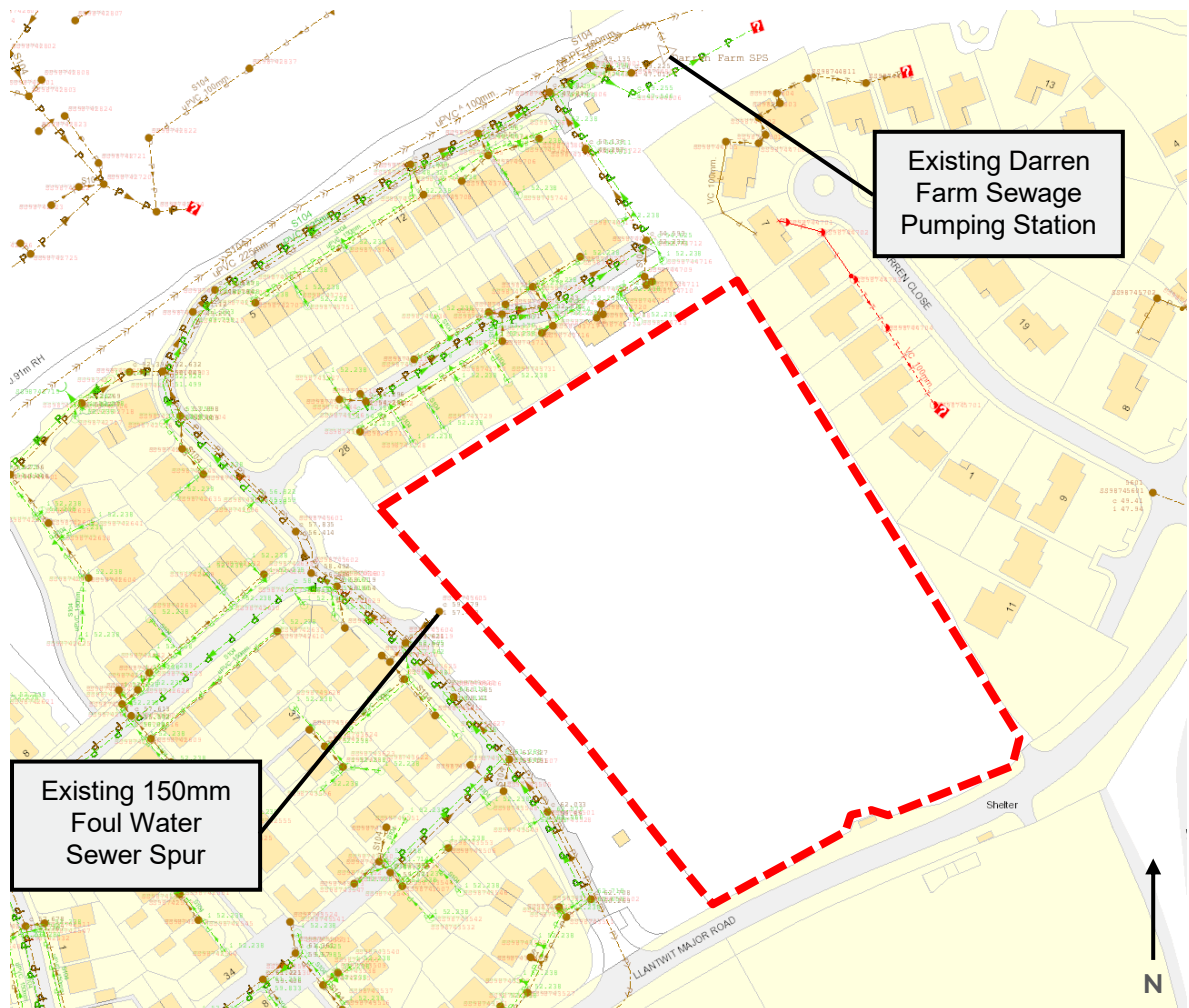


Figure 3: Extract of DCWW Asset Record Mapping

It has been identified that a 150mm dia foul water sewer spur has been provided to serve the proposed development. This situated to the western boundary within the main site vehicular entrance bellmouth. This spur connects to the main foul water sewers serving the neighbouring residential development which eventually conveys flows to the Darren Farm Sewage Pumping Station.

The DCWW asset mapping currently shows the status of the spur and associated foul drainage network through the residential development as a private network which is in the process of being transferred to DCWW via a Section 104 agreement. It is anticipated that this will complete and the foul spur for the school site will require a Section 106 agreement for the communication of flows to this connection point.

The surface water sewers are directed through the wider residential development to receiving attenuation infiltration features. It is understood that the infiltration features are in or the process of being adopted by Vale of Glamorgan Council. Taylor Wimpey have shared a copy of the engineering plan for the residential development which confirms the DCWW sewer mapping and the location of the surface water features mentioned. An image of which is included in Figure 4 highlighting the site location relative to the wider residential site infrastructure.



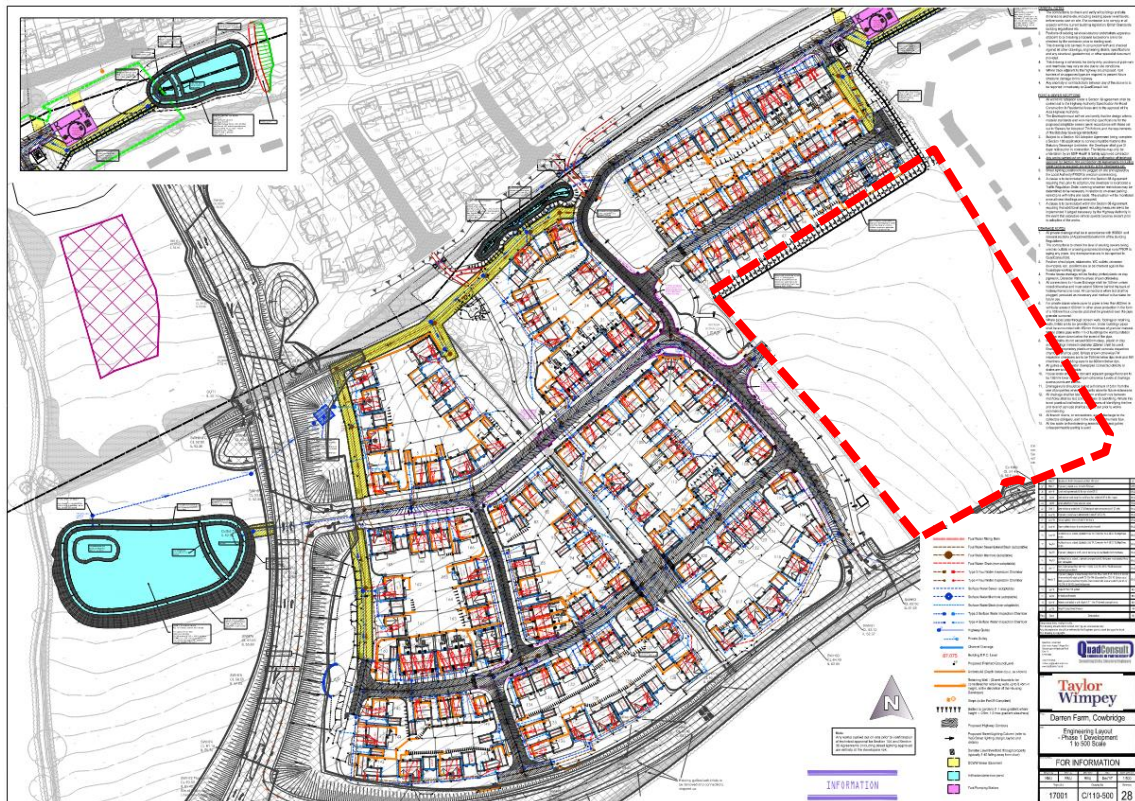


Figure 4: Image of TW Engineering Layout ref C/110-500 by Quad Consult

## 2.3.2 Surface Water (Private)

Prior to 2018 and the development of the site was Greenfield in nature. Post 2018 the site has been used by construction contractors as an access route, compound, car park and materials storage area to enable the construction of the wider residential development. From 2023, the site compound and associated works have been removed, and the site has been returned to disused and undeveloped land.

To protect the neighbouring residential properties to the north from any potential surface water overland flows from the site; a 600mm high bund has been formed with a 500m wide x 600mm deep land drain/interceptor drain filled with Type B 20/40mm single sized aggregate, wrapped in geotextile filter at the toe. This conveys overland flows off site via a 500mm deep ditch to the infiltration pond to the north east of the site.

There are no other dedicated surface water drainage systems identifiable within the site.

The surface water runoff from the wider residential development discharges via soakaways with the features recorded to have a design discharge rates of at  $1.86 \times 10^{-5}$  m/s,  $2.45 \times 10^{-5}$  m/s and  $4.73 \times 10^{-4}$  m/s. The nearest to the school site being  $1.86 \times 10^{-5}$  m/s.

It is noted that no allowance has been made within the wider residential for the school development site in terms of contributing area allowance to the dedicated surface water drainage network. Indeed, no surface water drainage spur has been provided at the site entrance like the foul drainage spur.

## 2.3.3 Foul Water (Private)

There are no dedicated foul water drainage systems within the site itself.

### 2.3.4 Highway Drainage

Within the bell mouth junction off Dunraven road to the site there are two road gullies identifiable within the topographical survey which are served by the dedicated residential surface water drainage network. These are understood to be subject to adoption by the Vale Highways team under a Section 38 agreement along with the road drainage collection features to the wider residential estate roads.

Llantwit Major Road to the south of the site is similarly served by traditional highway gullies. The GPR services survey for the site as shown in Figure 5, identifies the section that heads north east sway from the south east corner of the site.

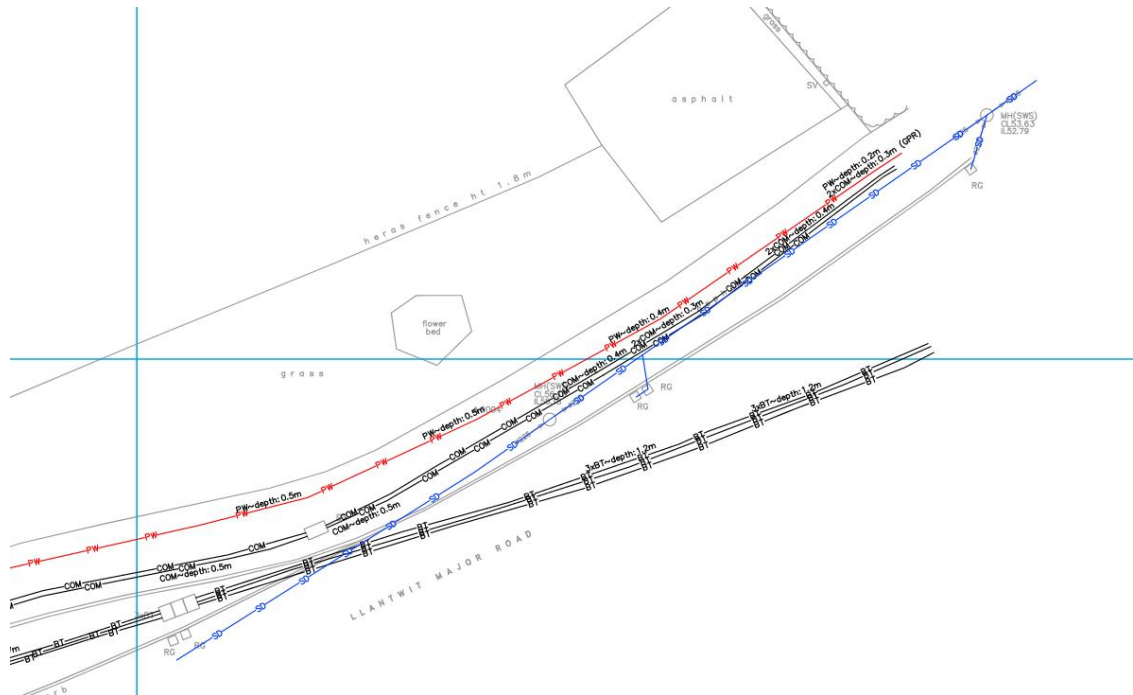


Figure 5: Extract of the GPR services survey for the site (Azimuth, 2025)

## 2.4 Existing Contributing Areas and Run-Off Rates

In accordance with the statutory Sustainable Drainage Systems Standards for Wales (SDSSW)– designing, constructing, operating and maintaining surface water drainage systems:

*G2.24 For previously developed sites, site runoff rates should be reduced to the greenfield rates wherever possible. Because the critical duration for the attenuation storage system for the proposed development will be much longer than the storm duration used for sizing pipework for the previously developed site, there is a risk that, by allowing previously developed runoff rates to occur (for a much longer duration) receiving watercourse damage and flood risk could be made considerably worse. Thus, betterment of at least 30% should be considered as a minimum requirement (this will need to be established and agreed with the drainage approving body) and strong consideration should still be given to controlling volumes of runoff to greenfield equivalents.*

The total site area is circa 1.976ha. The Greenfield run-off rates have been calculated and Table 2 summarises the runoff rates for each return period ( $Q_{BAR}$ , 2, 30 & 100). Calculations detailing the derivation of the values in the table using FEH are available in Appendix A.

**Table 2: Existing Greenfield Run-Off Rates by Return Period**

Return Period	Run-off Rate (L/s)
$Q_{BAR}$	» 4.9
2 yr	» 4.6
30 yr	» 8.7
100 yr	» 10.7

## 3 Proposed Development

### 3.1 Development Proposals

The development is proposed to comprise an up to 2FE Welsh medium primary school including nursery which will replace the existing Ysgol Iolo Morganwg school constructed between 1900- 1920 in the east of Cowbridge. It will consist of the main school building as shown in Figure 6, along with a sports pitch, Multi Use Games Area (MUGA), parking, amenity and play areas as part of the wider site shown by Figure 7.

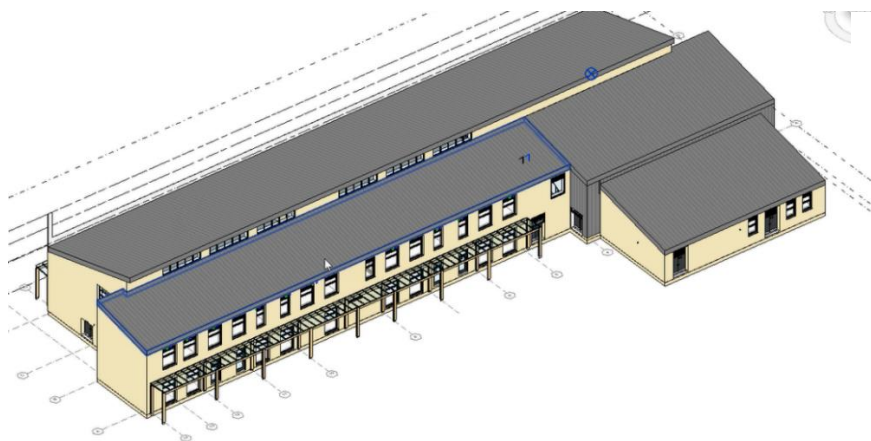


Figure 6: 3D Isometric view of the proposed school



Figure 7: Landscape GA, HLM Architects, Aug 2025



## **3.2 Foul Water Drainage**

A new foul water drainage system will be required to serve the proposed building providing connections to WCs, cleaners sinks, classroom sinks, floor gullies, the kitchen etc. Having reviewed the existing infrastructure, it is considered that the discharge of foul water from the site will be to the public foul water sewer situated within Dunraven Close via the existing public sewer spur.

It is considered that a gravity connection to the sewer from the proposed building can be achieved by a new foul drain whilst maintaining self-cleansing velocities. This has been achieved by positioning and aligning the school building on the site on its high side to the west. The spur provided has a limited invert level which would not be able to accommodate the lower northern and eastern parts of the site.

All works to the existing public foul sewer is subject to confirmation from DCWW as the asset owner. All on site sewerage systems will be designed and constructed to comply with building regulations requirements with any adopted elements in accordance with the latest edition of "Sewers for Adoption".

Based on the projected number of students the school is proposed to accommodate, the estimated peak foul flow rate is 3.0l/s. This will be subject to DCWW consent and approval via S106 Agreement.

All on site sewerage systems will be designed and constructed to comply with building regulations requirements with any adopted elements in accordance with the latest edition of "Sewers for Adoption" and any of the adopting authority's (DCWW) specific requirements.

## **3.3 Surface Water Drainage**

The aim of the surface water drainage strategy is to mimic the natural catchment processes as closely as possible and adopt the principles of water management schemes as stated in Section 2 of the Sustainable Drainage Systems Standards for Wales (SDSSW) document, 2018. Schedule 3 of the Flood and Water Management Act has been implemented by the Welsh Government which requires any development of more than 1 unit or where the construction area is greater than 100m<sup>2</sup> to comply with the SuDS Approving Bodies (SAB's) design guidance and ministers' standards which will require all sites to adopt SuDS in their design. The standards are listed below:

- » S1 – Surface Water Runoff Destination
- » S2 – Surface Water Runoff Hydraulic Control
- » S3 – Water Quality
- » S4 – Amenity
- » S5 – Biodiversity
- » S6 – Design of Drainage for Construction, Operation and Maintenance

The Standards listed will need to be met by the design to comply with the SDSSW. S1 is a hierarchy standard with standards S2-S6 being fixed.

The proposed SuDS & drainage strategy layout can be found in Appendix C.

### **3.3.1 S1 - Surface Water Run-off Destination**

In determining a suitable methodology for disposal of surface water flows from this development, it is necessary to explore the technical options outlined under Standard S1 of the SDSSW 2018 document published by Welsh Government. This states that disposal should be made through the hierarchical approach which are, in order of



preference; surface water runoff collected for use, infiltration methods, discharge to surface water body, discharge to a surface water sewer, highway sewer or another drainage system and finally discharge to a combined sewer.

Table 3 presents the discharge hierarchy considering all the available information obtained in preparation of this report.

**Table 3: Surface Water runoff discharge hierarchy appraisal**

Level	Destination Option	Means	Considerations
1.	Collected for Re-use	Collection, temporary storage and reuse (e.g. rainwater harvesting)	<ul style="list-style-type: none"> <li>The school building could be suitable for the collection of water as this area will have some demand for grey water. However, generally disadvantages outweigh the advantages in school environments as there are potential H&amp;S risks associated with a system that is not well maintained (e.g. risk of standing water in pipes over holiday periods where the system is not in use).</li> <li>Other basic forms of rainwater harvesting have been considered for incorporation into the development in the form of rainwater butts that will collect water from rainwater downpipes and store it for irrigation of the soft landscaped areas and planting beds however the flow rates from the roof areas will be too high and demand for these flows will again be low as the planted landscape areas will be accepting surface water runoff from the impermeable areas as part of the design.</li> </ul>
2.	Infiltrates to Ground	Infiltration SuDS techniques (e.g. infiltration basin)	<p>A site investigation has been undertaken to inform the drainage strategy development. As such:</p> <p><b>Pre-SI results consideration:</b></p> <ul style="list-style-type: none"> <li>The surrounding housing development, within which the school land parcel falls, uses infiltration as the surface water discharge destination.</li> <li>The closest known infiltration rate to the site, which is situated at the site of the neighbouring developments infiltration basin, was 2.45x10<sup>-5</sup>m/s.</li> <li>A site specific site investigation has included soakaway testing to BRE365 with coverage on an approximate 25m grid – refer to Appendix b for coverage.</li> </ul> <p><b>Post-SI results consideration:</b></p> <ul style="list-style-type: none"> <li>Widespread failure of the soakaway tests which will not support a surface water drainage strategy wholly reliant on infiltration as a means of discharge.</li> <li>Despite the isolated successful test locations at A2-SA2 &amp; A4-SA3, this would mean changing the strategy to a targeted soakaway approach reliant on isolated parts of the site. On review however: <ul style="list-style-type: none"> <li>A4-SA3 is too close to the proposed building to use as a targeted soakaway location and we can't move the building due to the foul spur connection.</li> <li>A2-SA2 is in a better location however the rate is not supportive of a targeted singular soakaway to serve the whole site and the failure of the surrounding soakaways A2-SA4, A2-SA5, &amp; A3-SA1 would suggest this is localised. Consideration of the risk to properties beyond the boundary at a lower level and dissolution features in the limestone would rule out an infiltration strategy.</li> </ul> </li> </ul>

			<ul style="list-style-type: none"> <li>Unlined SuDS features are possible to support interception compliance and reduce offsite discharge volume where they do not pose a risk to the structure foundations to be confirmed by geotechnical/structural engineer.</li> </ul>
3.	Discharge to surface water body	Conveyance via SuDS techniques (e.g. swale) or piped outfall	<ul style="list-style-type: none"> <li>The nearest watercourse is the River Thaw that is located approximately 460m south east of the proposed site.</li> <li>It is deemed unsuitable as a surface water runoff destination as it is remote from the site.</li> </ul>
4.	Discharge to surface water sewer	Piped connection	<p><b>Public sewers/Highway drainage</b></p> <ul style="list-style-type: none"> <li>Within the bell mouth junction to the site there are road gullies served by the dedicated residential surface water drainage network as described in Section 2.3.</li> <li>The dedicated surface water sewer that serves them passes through the estate road west and discharges to a large detention basin situated to the west side of the site. This has a flow control device and restricts flows before discharging them to a cellular storage soakaway to the north east closer to the residences presumably to a location supportive of infiltration.</li> <li>There has been no allowance made for the school plot within the residential drainage network and therefore discharge to this sewer is not an acceptable approach.</li> <li>In addition, the invert level of the sewer within the bell mouth is 57.91m AOD whereas the school development plot levels drop below this meaning a gravity solution would not be available to serve the MUGAs, sport pitches, and lower areas of the site.</li> </ul> <p><b>Private Drainage</b></p> <ul style="list-style-type: none"> <li>Along the northern boundary of the site, Taylor Wimpey installed a cut off land drain to intercept overland flows from the school land which is situated above the residential properties to the north as described in Section 2.3.</li> <li>Considering the sites topography, the drainage identified serves up to approximately 40% of the school site in the current greenfield regime (See Figure 8).</li> </ul>



Figure 8: TW land drain contributing area assessment

- Conveyance of runoff is provided by a combined ditch and land drain north behind residential properties to an infiltration basin to the north east which is aligned with the valley line of the wider area.
- Considering the nature of the system, it is expected that no formal area allowance has been made in the Taylor Wimpey infiltration basin feature for it. Additionally, it is not a suitable point of discharge owing to the third party nature of the land and drainage system which is expected to be privately adopted and maintained.

#### Highway Drainage

- Just off the south eastern corner of the site is a surface water drainage system that has been picked up in part by the existing GPR services survey as described in Section 2.3.4.
- As this is not identified by DCWW as adopted public sewer, it is expected that this is dedicated highway drainage serving Llantwit Major Road.
- The drain is 840mm deep (IL 52.79m AOD), situated beneath the footway adjacent to the site and comprises a 225mm dia pipe which directs runoff northeast along the road.
- Considering its level, this drain could provide a suitable gravity discharge point for surface water runoff from the site.

5.	Discharge to combined water sewer	Piped connection	<ul style="list-style-type: none"> <li>• There are no combined sewers (public or private) within the vicinity of the site.</li> </ul>
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Considering the appraisal of the surface water runoff destination for the Ysgol Iolo development plot, it is proposed that a connection to the Llantwit Major Road be pursued. There are no suitable alternative and more sustainable means of surface water runoff discharge available for the site.

### 3.3.2 S2 - Surface Water Run-off Hydraulic Control

This standard requires surface water to be managed to prevent as far as possible any discharge from the development for rainfall events of less than 5mm and that the surface water runoff rate and volume for up to a 1 in 100-year return period should be managed to protect people, properties, and the receiving water body. Consideration is also required to the risk associated with runoff from events greater than a 1 in 100-year return period with mitigating proposals developed for the scheme.

#### 3.3.2.1 Interception of Run-off

Interception will need to be considered under the statutory standards. Interception aims to mimic greenfield runoff conditions by preventing runoff from the majority of all small rainfall events leaving the site. This can contribute to reducing pollution load to receiving surface water bodies. Meeting the interception criterion is not expected during particularly wet periods, when permeable surfaces and subsoils are saturated, so a suggested target is that 80% compliance should be achieved during the summer and 50% in winter. Reference should be made to Table G2.1 in the Statutory Standards for Sustainable Drainage Systems 2018 document published by Welsh Government for details of interception mechanisms and their assumed compliance with the standards.

Table 4 summarises the strategy for achieving interception compliance for the scheme outlining the source of runoff and the feature that will intercept it:

**Table 4: Interception Strategy Summary**

Area (source of runoff )	SuDS feature (for interception compliance)
Building (roofs)	Rain garden areas
Hard play/footways	Permeable paving
Road/ car park aisle	Rain gardens at edge/ permeable parking bays
Parking bays	Permeable paving
MUGA	Permeable pavement
MEP/Storage Area	Filter strips/rain gardens

The features have been sized in order to comply with the applicable standard and the aforementioned Table G2.1. In coordination with the landscape architect these have been integrated into the site layout considering levels, access, maintenance, etc. This can be seen by the proposed SuDS & drainage strategy layout included in Appendix B.

#### 3.3.2.2 Hydraulic Control and Storage

In order to meet the applicable standards, this report has adopted the simple approach outlined in the statutory standards of restricting all runoff from the new build element of the development site for all return periods up to and including the 1 in 100-year event to Greenfield rates.

Considering the sites topography and the land drainage by others described earlier in this report, up to approximately 40% of the school site is drained via the land drainage in the current Greenfield regime – refer to Figure 8 **Error! Reference source not found.** This in turn means under the existing drainage regime currently approximately 60% of the catchment directs runoff south towards Llantwit Major Road. As such the  $Q_{BAR}$  runoff rate from Table 2 has been pro-rata'd to reflect this. It is therefore proposed to discharge surface water runoff from the



development via gravity to the highway drainage within Llantwit Major Road at the proposed restricted maximum rate of 2.9l/s.

In accordance with statutory guidelines, the development of this site should not increase flood risk elsewhere and as such, all runoff from impermeable areas on site should be contained within the site boundary for up to and including a 1 in 100-year design period storm, plus 40% climate change with no allowance for urban creep made due to the nature of the development.

Surface water flows from the proposed development would need to be restricted via flow control chamber/s and flows attenuated within on-site attenuation provided, for surface water runoff for all rainfall events up to and including a 1 in 100-year event with 40% allowance for climate change. Given the proposed site usage and topography, storage in the form of below ground attenuation beneath the sports pitch is achievable for the site. Opportunities to use stone sub base within rain garden and permeable paved areas distributed through the site to provide attenuation nearer to source is also to be explored at the detailed design stage, in an attempt to minimise the requirement of a larger single storage feature at the lowest point of the site.

For the purposes of this report, storage has been modelled within InfoDrainage and the overall attenuated impermeable area for the development has been taken as 0.76ha. The maximum discharge is assumed at 2.9l/s for all rainfall events up to and including the 100-year return period with 40% allowance for climate change which in turn has resulted in an attenuation requirement of up to 880m<sup>3</sup>.

### **3.3.2.3 Exceedance Flows and Flood Pathways**

*"It is inevitable that as a result of extreme rainfall the capacities of sewers, covered watercourses and other drainage systems will be exceeded on occasion. Periods of exceedance occur when the rate of surface runoff exceeds the drainage system inlet capacity, when the pipe system becomes overloaded, or when the outfall becomes restricted due to flood levels in the receiving water. Underground conveyance cannot economically or sustainably be built large enough for the most extreme events and, as a result, there will be occasions when surface water runoff will exceed the design capacity of drains. When drainage exceedance capacity is exceeded the excess water (exceedance flow) is conveyed above ground, and will travel along streets and paths, between and through buildings and across open space. Indiscriminate flooding of property can occur when this flow of water is not controlled." (CIRIA C753).*

Flood-flow pathways would be designed to convey the overland flows from rainfall events above a 1 in 100 year return period to suitable areas of open space, such as watercourses, landscaped areas, car parking areas and other hard surfaced areas in order to protect properties against flooding. Consideration should also be given to exceedance pathways from storage areas in the event of extreme rainfall or failure with allowance made to convey flows away from properties both on and off the site.

In the event of an extreme rainfall beyond the designed storm events, or poor maintenance of the surface water drainage system, flooding will occur within low points of the site (ie the sports pitch), before re-entering the highway drainage network via overland flow and interception by other gullies serving Llanwit Major road.

### **3.3.2.4 Flood Risk to People**

*"People are at risk of suffering death or serious injury when flooding occurs. People are unable to stand in deep or fast flowing floodwater. Once they are unable to stand, there is a high risk of death or serious injury. Adults are unable to stand in still floodwater with a depth of about 1.5m or greater, although this is obviously affected by the height of a person. The depth of flowing floodwater where people are unable to stand is much less. For example, some people will be at risk when the water depth is only 0.5m, if the velocity*



*is 1m/s (about 2 mph). If the velocity increases to 2m/s (about 4 mph) some people will be unable to stand in a depth of water of only 0.3m. Most people will be unable to stand when the velocity is 2m/s and the depth is 0.6m." (Defra/ Environment Agency, FD2321/TR2).*

During the detailed design, a hydraulic model will be built to assist the design of the proposed surface water drainage networks. When an extreme storm event is simulated within the model, potential flooding locations will become evident and the flood flow pathways can be designed/defined based on the proposed layout and levels of the hard areas and landscaping. The depth and velocity of the overland flood water can be determined and then compared with '*Combinations of flood depth and velocity that cause danger to people*' in the Defra / EA Flood Risks to People publication. The velocity and depth as described above would then give a category of flood hazard and the corresponding risk to people. If the risk is deemed to be too high, then the design would require reassessment.





### **3.3.3 S3 - Water Quality**

This standard requires treatment of surface water runoff to prevent negative impacts on the receiving water quality and/or to protect downstream drainage systems including sewers. The only exception to this standard is where drainage connects directly to a combined sewer, where the quality requirements are limited to preventing the discharge of oil and sediments to the sewer system.

The development is proposed to discharge runoff to a highway drain and convey flows to a watercourse south of west village. The aim of the surface water management strategy with regards to water quality is to follow the guiding principles of the SDSSW and use simple, natural processes that promote biodiversity and long-term sustainability. As such, it employs a SuDS management train approach, providing drainage components in series.

The management trains to be used on the project will be assessed using the Simple Index Assessment (SIA) tool available publicly (<http://www.ukSuDS.com/drainage-calculation-tools/water-quality-assessment-for-SuDS-developments>) which is built around the principles for simple assessment outlined in CIRIA C753 to assess the levels of treatment provided by the proposals.

Planting within the SuDS features should form part of the water quality strategy. SuDS components like rain gardens, permeable paving, and filter strips provide water quality improvements by reducing sediment and contaminants from runoff either through settlement or biological breakdown of pollutants as part of their interceptor function, so only robust and tolerant species of planting should be specified. Once these species establish this will decrease the flow rate of water travelling through and filter pollutants and contaminants before entering the downstream network.

### **3.3.4 S4 - Amenity**

This standard requires that the design of the surface water management system should maximise amenity benefits.

The primary amenity focus of the SuDS scheme should be to improve the health and well-being of the students, staff and visitors. The scheme will be based on accessible natural forms that mimic natural landscapes found within the region and the vegetated rain garden planting areas are designed with locally contextual species that will encourage natural colonisation. Other key amenity benefits should include improving air quality around the development, increasing carbon sequestration, and improving water quality through removal of pollutants via the rain gardens and filter strips.

Notable work has been undertaken by the landscape architect in coordination with the civil engineer to integrate the proposed SuDS features throughout the scheme to create an engaging, attractive, and positive environment for the proposed educational use of the site.

### **3.3.5 S5 - Biodiversity**

This standard requires that the surface water management system should maximise biodiversity benefits. The SuDS scheme's biodiversity strategy will revolve around increasing the overall biodiversity of the site and ecological value. The inclusion of plant species that will enhance the general eco system and simultaneously act as a water filtration system to clean pollutants and contaminants will be used where possible.

The plant species selected should be both locally contextual and appropriate for the varied habitat zones including primary characteristics that shall ensure:

- » Good soil binding and filtration species
- » Minimised erosion
- » Improved filtration via dense root and stem species
- » Tolerance to seasonal variations including droughts and inundations
- » Good suspended solids retention





- » Pollutant tolerant
- » Emergent and pioneering species for natural ecological colonisation
- » The creation of diverse, self-sustaining, and resilient ecosystems for high species biodiversity
- » Support for local and regional habitat strategies

In general, the proposed rain garden areas and filter strips will be the focal habitat points for the site and will enhance the site over the current site layout by adding areas of water and damp and vegetated soils. Exposed areas of the rain gardens will attract certain species and trees will further enhance the varied ecosystem potential.

### **3.3.6 S6 - Design of Drainage for Construction and Maintenance and Structural Integrity**

*The surface water drainage system will be designed with the overriding ethos of simplicity in construction, use and maintenance. This then allows a very simple translation from the principles described within standard S6, namely that all elements of the surface water drainage system should be designed so that they can be constructed, as well as maintained and operated "...easily, safely, cost-effectively, in a timely manner, and with the aim of minimising the use of scarce resources and embedded carbon (energy)." (SDSSW).*

The proposed system will not be offered for adoption as it will serve the school site only, therefore the maintenance of the drainage will be managed and maintained by the school estate manager who will be responsible for all inspection and maintenance activities.

Information with regards to the construction methodology and requirements of the proposed system will be developed as part of the detailed design stage of the project, likewise the maintenance requirements and regime of the proposed system will be developed into the full maintenance strategy for the site during the next phase of design development. This will be developed in conjunction with the client, as it is not considered appropriate for these details to be developed by the design team in isolation from the end users. This will then need to be confirmed and submitted for approval to the SAB prior to construction commencing on site.



## 4 Statutory Approvals

### 4.1 Water Authority

#### 4.1.1 Pre-Planning Advice (PPA)

A pre planning advice application was submitted to DCWW and their response can be found in Appendix D. In summary:

- **Sewage Treatment** - The site drains to Cowbridge Wastewater Treatment Works. No problems are envisaged with the Wastewater Treatment Works for the treatment of domestic discharges from this site.
- **Wastewater** - At this time (as capacity can't be reserved), DCWW have no objection to the discharge of domestic foul flows which can be communicated to the public foul sewer. The suggestion location provided for the connection was not the spur within the site entrance bell mouth however it is anticipated that this was due to the S104 agreement having not completed at the time of writing and that this will be acceptable come the time of construction.
- **Surface water** – Referred to Schedule 3 and the need for SAB consultation. This is a standard response since SAB was introduced and expected. See Section 4.2 for further information.
- **Water supply** – An assessment of the capacity of the potable water supply network was not able to be assessed at this time as further information in relation to the anticipated potable water demands was required.
- **Easements** – Out of date sewer arrangements were described with easements that no longer apply since the JR Smart FW diversion. Following further consultation, DCWW confirmed the S185 diversion arrangements, applicable 3.0m easement and also a 6.9m easement to the water main.

#### 4.1.2 Section Agreements

Works associated with new connections or amendments to the existing public sewer network require water authority consent. As such:

- » Any connection to a public sewer is subject to confirmation of available downstream capacity and a Section 106 agreement with DCWW - the detail of which should also include any proposed changes to the existing chamber to accept new connections.
- » A Section 104 agreement may also typically be required to any drainage that serves more than one curtilage. For this scheme, it's considered that this will not be required as a spur in DCWW's ownership is already available for the site.

### 4.2 SuDS Approval Body

The proposed development is subject to the Schedule 3 requirements and therefore subject to SAB approval. The role of the SAB is also to adopt SuDS features and maintain them for the lifetime of the development; although in this case the SuDS features will not be adopted by the SAB as the development will fall within the single managed curtilage.

Early engagement with the SAB is recommended to ensure feedback is taken account of at an early stage to provide confidence that an agreeable surface water drainage strategy can be adequately accounted for in the spatial planning of any development.

An informal SAB Pre-Application discussion took place on 10/07/2025 with the purpose of introducing the proposed development, discussing the site constraints – in particular the findings of the recent infiltration testing as part of the



site investigation and agree early principles around surface water discharge destination and rate requirements. Minutes of this discussion can be found in Appendix E.

The consultation meeting allowed the design team to present a re-appraisal of the discharge hierarchy as presented in Section 3.3.1 of this report, considering the widespread failure of infiltration testing across the site, which had previously been assumed to be the most likely discharge arrangement considering the use of this method by the wider residential development. The SAB acknowledged the findings and agreed in principle that the sites most sustainable discharge destination was the Llantwit Major Road highway drain to be restricted to a Greenfield rate of 60%  $Q_{BAR}$ .

Further SAB Pre-Application consultation was suggested as an appropriate course of action in order to check on the interception compliance of the scheme and its updated strategy following agreement in principle of the runoff destination.



## **5 Conclusion**

It is considered that the proposed SuDS and drainage layout has been well considered based on a detailed appraisal of the existing drainage arrangements and site constraints/conditions. As part of the proposals a scheme of SuDS is proposed which will provide interception, water quality, flow reduction, amenity and biodiversity benefits in line with best practice and the applicable national standards. A gravity based foul drainage solution is also proposed. As such, it is considered that the proposed means of drainage for the proposed development do not constitute a barrier to planning permission.



# Appendices

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## **A.1 Appendix A – Runoff Calculations**



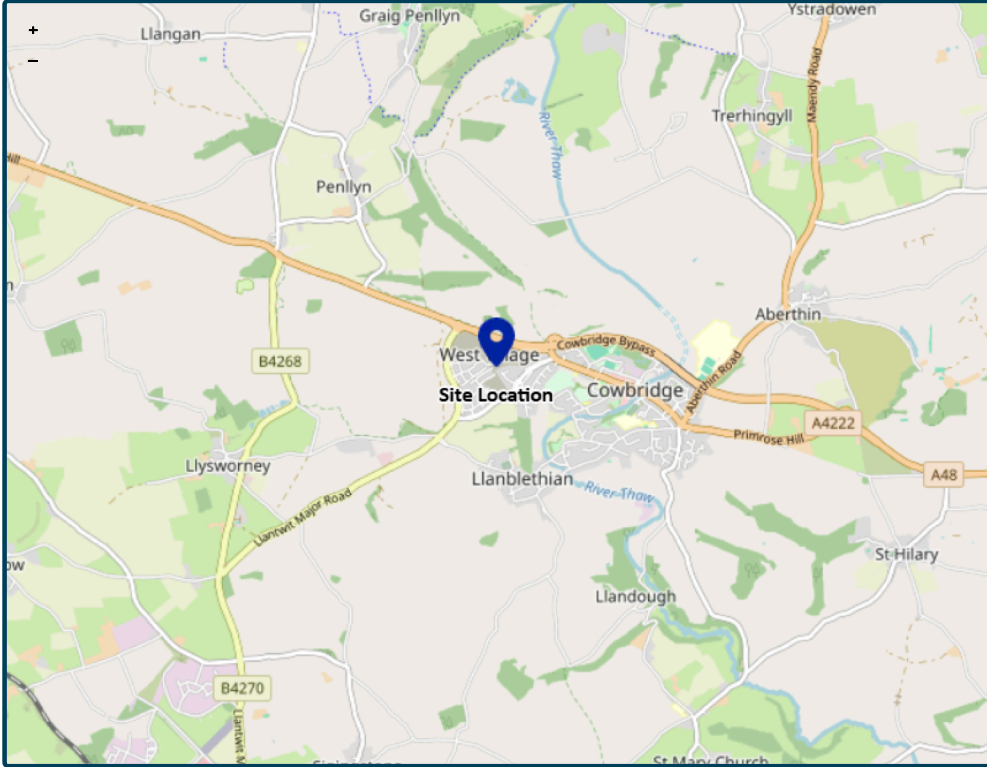
This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance “Rainfall runoff management for developments”, SC030219 (2013), the SuDS Manual C753 (CIRIA, 2015) and the non-statutory standards for SuDS (Defra, 2015). This information on greenfield runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

Project details

Date	<div>09/07/2025</div>
Calculated by	<div>IMH</div>
Reference	<div>Ysgol lolo</div>
Model version	<div>2.0.1</div>

Location

Site name	<div>Ysgol lolo</div>
Site location	<div>Bont-faen</div>



© OpenStreetMap (https://www.openstreetmap.org/copyright) contributors.

Site easting	<div>298430</div>
Site northing	<div>174658</div>

Site details

Total site area (ha)	<div>1.976</div>	ha
----------------------	------------------	----

Greenfield runoff

Method

Method	<div>FEH statistical</div>
--------	----------------------------

FEH statistical

	<div>My value</div>		<div>Map value</div>
SAAR (mm)	<div>1098</div>	mm	<div>1098</div>
BFIHOST	<div>0.802</div>		
QMed-QBar conversion	<div>1.075</div>		<div>1.075</div>
QMed (l/s)	<div>4.56</div>	l/s	
QBar (FEH statistical) (l/s)	<div>4.9</div>	l/s	

Growth curve factors

	<div>My value</div>		<div>Map value</div>
Hydrological region	<div>9</div>		<div>9</div>
1 year growth factor	<div>0.88</div>		
2 year growth factor	<div>0.93</div>		
10 year growth factor	<div>1.42</div>		
30 year growth factor	<div>1.78</div>		
100 year growth factor	<div>2.18</div>		
200 year growth factor	<div>2.46</div>		

# Results

Method	FEH statistical	
Flow rate 1 year (l/s)	4.3	l/s
Flow rate 2 year (l/s)	4.6	l/s
Flow rate 10 years (l/s)	7	l/s
Flow rate 30 years (l/s)	8.7	l/s
Flow rate 100 years (l/s)	10.7	l/s
Flow rate 200 years (l/s)	12.1	l/s

## Disclaimer

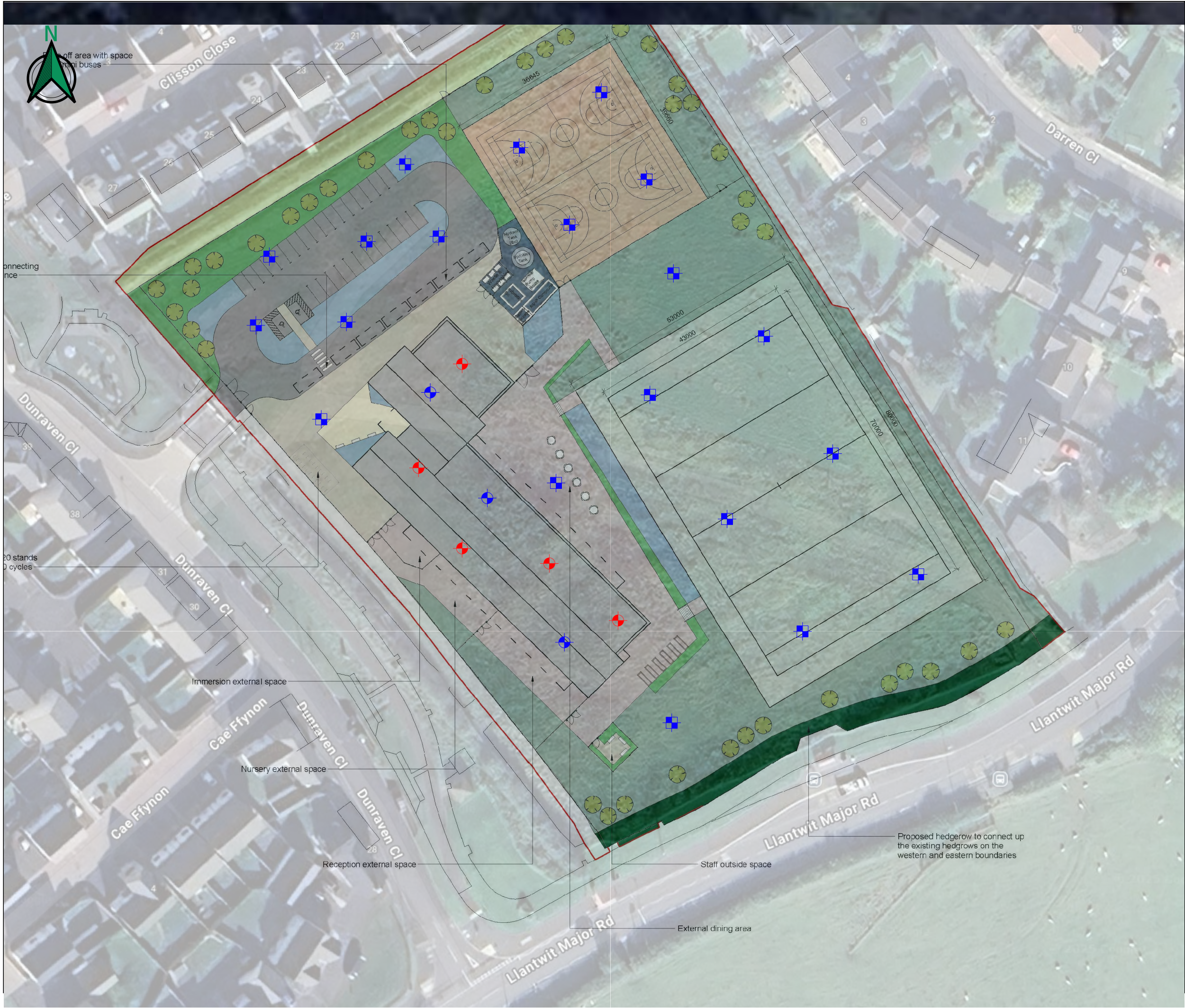
This report was produced using the Greenfield runoff rate estimation tool (2.0.1) developed by HR Wallingford and available at uksuds.com (<https://www.uksuds.com/>). The use of this tool is subject to the UK SuDS terms and conditions and licence agreement, which can both be found at uksuds.com/terms-conditions (<https://www.uksuds.com/terms-conditions>). The outputs from this tool have been used to estimate Greenfield runoff rates. The use of these results is the responsibility of the users of this tool. No liability will be accepted by HR Wallingford, the Environment Agency, Centre for Ecology and Hydrology, Wallingford Hydrosolutions or any other organisation for the use of these data in the design or operational characteristics of any drainage scheme.






## **A.2 Appendix B – Soakaway test locations**







Legend

-  RBH
-  WS Loc
-  TP Loc

PROJECT:  
  
Ysgol Iolo Morganwg Primary School,  
Cowbridge

DRAWING 01:  
  
Proposed Exploratory Hole Locations

TFW Group Ltd  
5 Deryn Court, Wharfedale Road, Cardiff,  
CF23 7HA  
Tel: 029 2073 5354  
Email: [Hello@tfwgroup.co.uk](mailto:Hello@tfwgroup.co.uk)





## Legend

- Site Boundary
- Rotary Borehole Locations
- Deep Soakaway Locations
- Soakaway Locations
- Window Sample Locations

Google Satellite

## PROJECT:

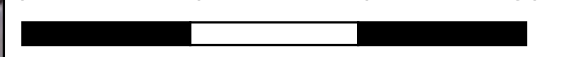
TF-24-648-CA Ysgol Iolo  
Morganwg Primary School

## DRAWING 01:

Exploratory Hole Location  
Plan

TFW Group Ltd  
5 Deryn Court, Wharfedale Road,  
Cardiff, CF23 7HA  
Tel: 029 2073 5354  
Email: Hello@tfwgroup.co.uk

0 20 40 60 m





## **A.3 Appendix C – Proposed Drainage Strategy Layout**







## NOTES:

- DRAWING TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT PROJECT DRAWINGS
- DOUBLE SEALED AND LOCKABLE COVERS TO BE SUPPLIED WHERE SPECIFIED ON MANHOLE SCHEDULE.
- ALL PRIVATE DRAINAGE TO COMPLY WITH CURRENT BUILDING REGULATIONS, BS EN-752 DRAIN AND SEWER SYSTEMS OUTSIDE BUILDINGS AND OTHER RELEVANT BRITISH STANDARDS AND CODES OF PRACTICES.
- ALL SEWERS TO BE LAID SOFFIT TO SOFFIT UNLESS OTHERWISE SHOWN.
- IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE EXISTING SERVICES ON SITE ACCURATELY.
- THE CONTRACTOR IS TO VERIFY THE LINE, LEVEL AND DIAMETER OF EXISTING SEWERS BEFORE COMMENCING DRAINAGE WORKS.
- ALL LEVELS ARE TO OS DATUM UNLESS OTHERWISE STATED.
- COMPLIANCE WITH HEALTH & SAFETY MATTERS ON ANY TRENCH/MANHOLE IS OBLIGATORY AND A PERMIT TO ENTER A CONFINED SPACE IS REQUIRED WHEN CONNECTING SITE DRAINAGE TO THE EXISTING PUBLIC SEWERAGE SYSTEM. A PERMIT TO ENTER A CONFINED SPACE WILL BE OBTAINED FROM THE SEWERAGE UNDERTAKER PRIOR TO THE WORKS COMMENCING ON ANY PUBLIC SEWERAGE SYSTEM.
- WHERE SEWERS ARE TO BE CONSTRUCTED INSIDE THE RESTRICT TREE ZONE A SUITABLE TRESS PROTECTION BARRIER IS TO BE INSTALLED TO THE LANDSCAPE ARCHITECTS SPECIFICATION.
- ALL SVP, SS AND RWP POSITIONS SHOWN ARE APPROXIMATE ONLY. FOR SETTING OUT OF SC'S AND RWP'S REFER TO ARCHITECTS DETAILED CONSTRUCTION DRAWINGS AND/OR M&E ABOVE GROUND DRAINAGE DESIGN. ANY DISCREPANCIES TO BE REPORTED TO THE ENGINEER PRIOR TO CONSTRUCTION.
- ALL PRIVATE SWS CHAMBERS & MANHOLES TO HAVE A 300mm CATCHPIT. INVERT LEVEL OF CATCHPIT EXCLUDED FROM DRAWING.
- ALL PRIVATE SWS DRAINS TO BE Ø150mm PLASTIC PIPEWORK LAID AT A MINIMUM FALL OF 1 in 100 UNLESS OTHERWISE SHOWN.
- ALL LINEAR DRAIN OUTLETS TO BE Ø100mm AT MINIMUM FALL OF 1 in 100 TO MAXIMUM FALL OF 1 in 10.
- ALL PRIVATE FWS DRAINS TO BE Ø100mm PLASTIC PIPEWORK LAID AT A MINIMUM SLOPE OF 1 in 40 UPSTREAM OF FIRST W.C. CONNECTION ON A RUN. AFTER CONNECTION OF 1st W.C. TO BE LAID AT MINIMUM SLOPE OF 1 in 80.
- PIPEWORK TO HAVE BED AND SURROUND AS FOLLOWS:
  - UNDERNEATH PRIVATE DRIVEWAYS, PARKING AREAS WITH RESTRICTIONS TO PREVENT ACCESS BY VEHICLES IN EXCESS OF 7.5T AND PATHWAYS ADJACENT TO VEHICLE ACCESS TO BE;
    - COVER TO TOP OF PIPE > 0.9m - TYPE S or TYPE T (PLASTIC)
    - COVER TO TOP OF PIPE < 0.9m - TYPE Z (CONCRETE SURROUND)
  - UNDERNEATH DOMESTIC GARDENS AND PATHWAYS WITH NO POSSIBILITY OF VEHICLE ACCESS TO BE;
    - COVER TO TOP OF PIPE > 0.35m - TYPE S or TYPE T (PLASTIC)
    - COVER TO TOP OF PIPE < 0.35m - TYPE Z (CONCRETE SURROUND)
- ALL DRAINAGE OUTFALLS AND CONNECTIONS TO EXISTING FEATURES/SYSTEMS SHALL BE CHECKED & SURVEYED AND THE RESULTS PASSED TO THE OVERSEEING AUTHORITY / CLIENT IN

KEY PLAN

1:2500

SHEET 1

## PROPOSED KEY

- SURFACE WATER DRAIN
- SURFACE WATER PERFORATED DRAIN
- SURFACE WATER LINEAR DRAIN
- SURFACE WATER MANHOLE
- SURFACE WATER INSPECTION CHAMBER
- SURFACE WATER FLOW CONTROL CHAMBER
- SURFACE WATER VEGETATED HEADWALL
- RAIN TAINA FILTER CHAMBER - RTNA05002
- INDICATIVE RAINWATER DOWNPIPE
- SURFACE WATER RODDING EYE
- SURFACE WATER BACK-DROP
- LINEAR DRAIN - DOWNPIPE CONNECTOR
- KERB OUTLET
- RAIN GARDEN
- PERMEABLE PAVING
- MUGA PERMEABLE SURFACING
- POROUS SURFACING - WET POUR
- POROUS SURFACING - PERMEABLE ASPHALT
- CELLULAR STORAGE TANK
- FOUL WATER DRAIN
- FOUL WATER MANHOLE
- FOUL WATER INSPECTION CHAMBER
- FOUL WATER GULLY
- FOUL WATER YARD GULLY
- FOUL WATER SOIL CONNECTION / SHOWER GULLY
- DRAIN SLEEVED THROUGH CONCRETE STRIP FOUNDATION

## EXISTING KEY

- FOUL WATER SEWER
- FOUL WATER MANHOLE
- SURFACE WATER GRAVEL TRENCH WITH UNDER DRAIN
- SURFACE WATER MANHOLE - HIGHWAYS
- SURFACE WATER DRAIN

## REVISIONS

P02	Issued for PAC	21/08/25	SP	CD   CD
P01	Stage 3 Issue	15/08/25	SP	CD   CD
Rev.	Revision Notes	Date	Drawn By	Checked   Approved



Third Floor, Wharfton Place  
13 Wharfton Street  
Cardiff  
CF10 1GS  
t: +44(0)2920 023665  
e: cardiff@hydropack.com

## CLIENT

KIER ON BEHALF OF  
THE VALE OF GLAMORGAN COUNCIL

## PROJECT

YSGOL IOLO

## TITLE

DRAINAGE LAYOUT  
SHEET 1 OF 2

HYDROCK PROJECT NO.

C-38443

SCALE @ A1

1:250

STATUS DESCRIPTION

SUITABLE FOR INFORMATION

STATUS

S2

DRAWING NO.

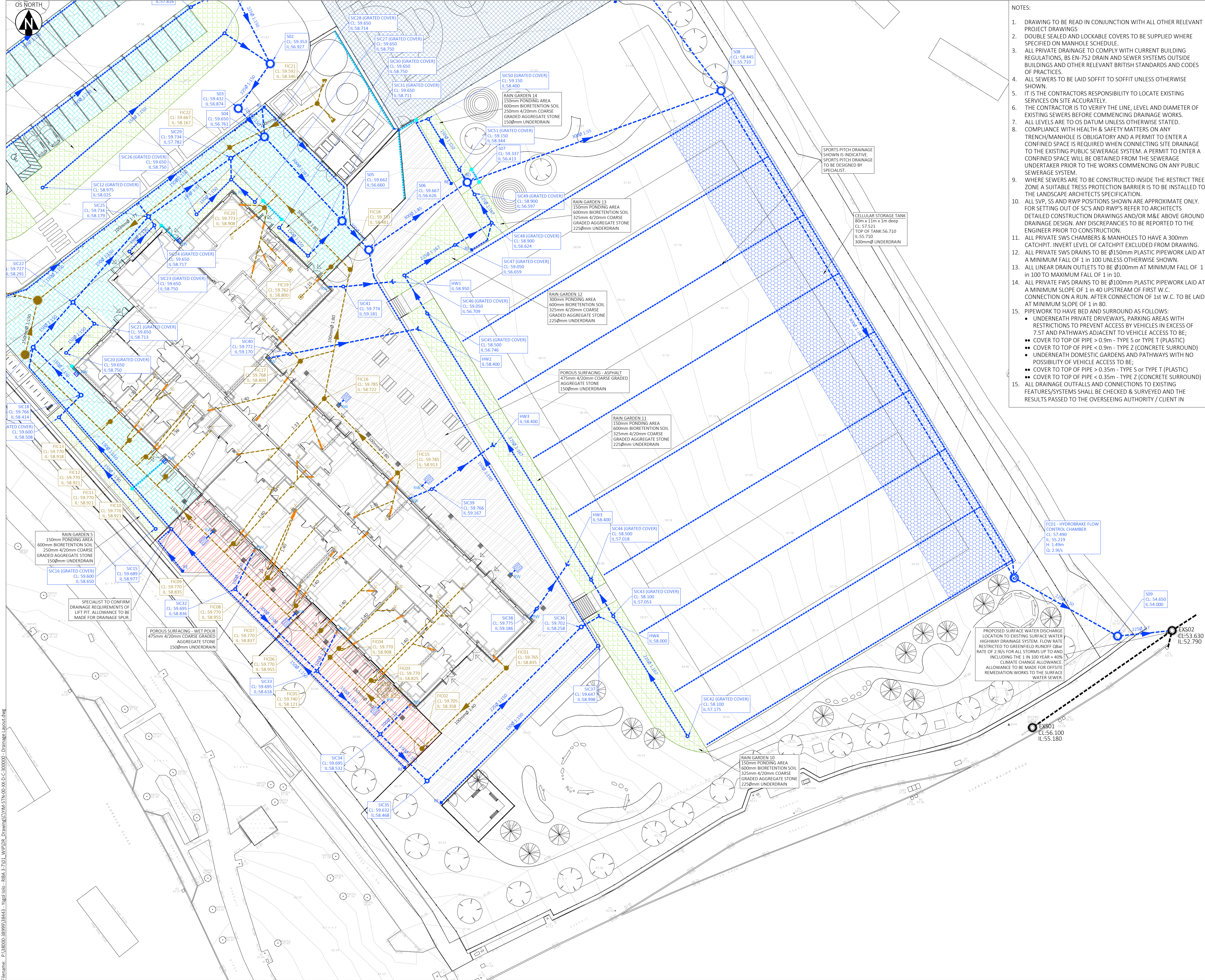
YIM-STN-00-XX-D-C-300000

REVISION

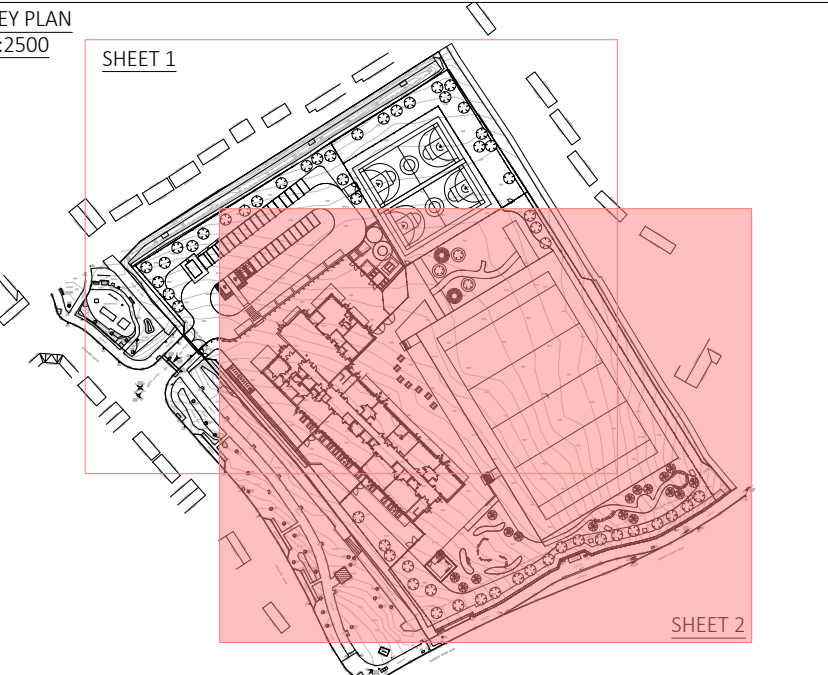
P02



Filename: P:\38000-38899\38443 - Ysgol Iolo - BBA 3-701 WUP\DR Drawing\COMMON-STN-00-XX-D-C-300100 - Drainage Layout.dwg



- NOTES:
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      - COVER TO TOP OF PIPE < 0.35m - TYPE Z (CONCRETE SURROUND)
  - ALL DRAINAGE OUTFALLS AND CONNECTIONS TO EXISTING FEATURES/SYSTEMS SHALL BE CHECKED & SURVEYED AND THE RESULTS PASSED TO THE OVERSEEING AUTHORITY / CLIENT IN



- PROPOSED KEY
- SURFACE WATER DRAIN
  - SURFACE WATER PERFORATED DRAIN
  - SURFACE WATER LINEAR DRAIN
  - SURFACE WATER MANHOLE
  - SURFACE WATER INSPECTION CHAMBER
  - SURFACE WATER FLOW CONTROL CHAMBER
  - SURFACE WATER VEGETATED HEADWALL
  - RAIN GARDEN
  - PERMEABLE PAVING
  - MUGA PERMEABLE SURFACING
  - POROUS SURFACING - WET POUR
  - POROUS SURFACING - PERMEABLE ASPHALT
  - CELLULAR STORAGE TANK
  - FOUL WATER DRAIN
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  - FOUL WATER YARD GULLY
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  - DRAIN SLEEVED THROUGH CONCRETE STRIP FOUNDATION
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  - FOUL WATER MANHOLE
  - SURFACE WATER GRAVEL TRENCH WITH UNDER DRAIN
  - SURFACE WATER MANHOLE - HIGHWAYS
  - SURFACE WATER DRAIN

REVISIONS				
P02	Issued for PAC	21/08/25	SP	CD   CD
P01	Stage 3 Issue	15/08/25	SP	CD   CD
Rev.	Revision Notes	Date	Drawn By	Checked   Approved



CLIENT  
KIER ON BEHALF OF  
THE VALE OF GLAMORGAN COUNCIL

PROJECT  
YSGOL IOLO

TITLE  
DRAINAGE LAYOUT  
SHEET 2 OF 2

HYDROCK PROJECT NO. C-38443		SCALE @ A1 1:250	
STATUS DESCRIPTION SUITABLE FOR INFORMATION		STATUS S2	
DRAWING NO. YIM-STN-00-XX-D-C-300100		REVISION P02	



## **A.4 Appendix D – DCWW PPA Response**



# Planning and new development

What you should do, and how we can help







Whether you're a homeowner with plans to extend your home, a builder working on a new house or a developer working on a new housing site, you need to involve us in the planning process. Even if you are just thinking about building, getting us involved early can help your project run smoothly and address any water and drainage matters as early as possible in the development process.

### How can we help?

As water and waste services are at the forefront of public health and protection of the environment, we play a key part in the town and country planning process.

If you're planning on building new houses, our team of dedicated planning officers can give you advice and guidance at all stages of the process, including pre-application, planning application and discharge of condition.

When it comes to your new development, by getting us involved in the planning stages, we can:

- Assess whether the current local water and sewerage networks have capacity to service your new site (and if they can't, then identify whether the network can be reinforced to support your new site)
- Mitigate any potential negative impact that the new development could have on the performance of our infrastructure, the service we provide to customers, and the wider environment
- Identify where new development and growth is planned so that we can target investment in our existing infrastructure within these areas
- Provide advice on making new water and waste connections to our networks once your development is complete and ready to be occupied
- Identify any existing water or waste pipes in or near to the site, so we can advise on their location and let you know your options for protecting and/or diverting our assets for the lifetime of the development





## Step 1: Use our pre-planning service

### What is our pre-planning service?

We encourage all developers to engage with us as early as possible to ensure any water and drainage matters that might arise during the planning process are identified and addressed early on. In order to facilitate this, you can engage with us via our dedicated pre-planning service, which will provide:

- An assessment of the impact of your proposed development and whether our local water and waste networks can support it
- Confirmation of whether off-site water mains and/or sewers will need to be provided, and
- Water main and sewer plans indicating the location of our assets crossing the site or located in close proximity. *Please note that these are for general guidance only and all assets need to be accurately located on site before any excavation works begin.*

### How can I access it?

You can submit a 'pre-planning advice' application online via our website. To make sure that we can provide you with the most comprehensive advice, you should include the following information:

- Site location plan
- Details of the proposed development
- Proposed points of communication to our local network of sewers and/or water mains (if known)
- Relevant planning history relating to the site e.g. any previous permissions granted or status within the council's development plan

You can see how much this service will cost on our website, and we'll aim to get back to you with a written **response within 21 days** of your application. The advice provided will be valid for 12 months and help inform our response when consulted on your planning application by the local planning authority (LPA).

### For larger developments in Wales:

- You have to undertake pre-application consultation as set out in Schedule 4 of the Town & Country Planning (Development Management Procedure) (Wales) (Amendment) Order 2016 for any developments that:
  - Include 10 dwellings or larger
  - Have 1000sqm or larger non-residential floor space or
  - Have a site area that's 1 hectare or larger
- This means you need to consult with us and we will **respond within 28 days**.
- While there's no charge for this service, as it's a statutory requirement, we do recommend that you apply for our pre-planning service in advance of this consultation, as it will help to identify any potential issues that need to be addressed in advance of your planning application.





## Step 2: Once you have our pre-planning advice



### Locate our assets

Before you build, it's important to identify if any of our pipes, water mains or sewers are underneath the ground in or adjacent to your development site. Under section 159 of the Water Industry Act 1991, we have the rights of access to inspect, maintain, adjust, repair or alter any asset or apparatus at all times.

#### If your land does contain assets

If your land does indeed contain some of our assets, then this will have an impact on the layout and general arrangement of the new development site. We strongly recommend that you contact us to discuss accurately locating our assets to ensure that they are protected during and after construction. Please contact our Plan and Protect team via [planandprotect@dwrcymru.com](mailto:planandprotect@dwrcymru.com) or 08009172652 to discuss further.

#### If you want to divert or remove the assets contained in your land

If you decide the asset located within or adjacent to your site can't be incorporated within the layout of the new development, or our rights of access to the asset may be hindered by your proposal, you can ask us to alter, divert or remove it in accordance with section 185 of the Water Industry Act 1991. You can find the application forms on our website.

### How will you manage surface water?

As with all new development sites, you'll need to think about how to deal with surface water runoff from any new buildings and hard standings. Legislation in both England and Wales now actively encourages the use of sustainable urban drainage systems (SUDS). This approach manages surface water runoff by imitating natural drainage systems and retaining water on or near the site.

There are such a variety of SUDS techniques including green roofs, rainwater harvesting and permeable pavements that any development should be able to include a SUDS scheme. There would need to be good justification not to incorporate a SUDS scheme on your site.

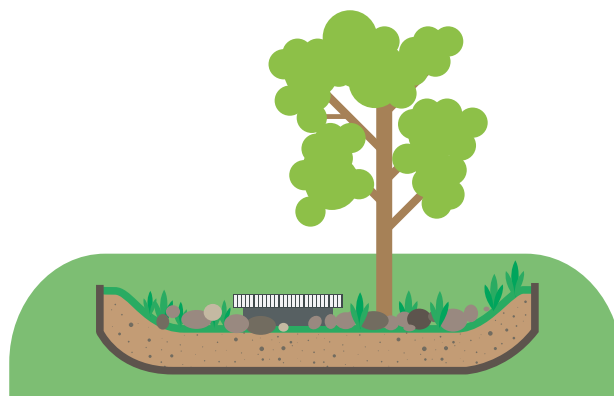
### SUDS in Wales

All new development of more than one building or a construction area of 100m<sup>2</sup> or more will require consent from the sustainable drainage system (SUDS) approval body (also known as a SAB) for any new SUDS features, as required by Schedule 3 of the Flood and Water Management Act 2010. SABs are delivered by local authorities across Wales.

In accordance with this and the Welsh Government 'Statutory standards for sustainable drainage systems', you need to explore and fully exhaust all surface water drainage options, using discharge to a combined sewer only as a last resort.

### SUDS in England

Even if your new development is based in England, it's important to keep Part H of the 'Building Regulations 2000' in mind. On this basis, all new developments in England will also be expected to consider surface water management techniques and demonstrate all technical options have been explored and exhausted, in liaison with the land drainage authority and/or the Environment Agency. You need to consider the management of highway or land drainage runoff as these flows won't be allowed to discharge directly or indirectly into the public sewerage system.



## Step 3: The planning application process

Once you've used our pre-planning service and identified any potential issues before building, it's time to incorporate our advice into your proposals to your local planning authority (LPA).

As part of the planning application consultation process we will provide similar advice to that provided in our pre-application **response within 21 days**. It's important to note that while we share our expert opinion during this process, the ultimate decision to grant planning permission is the LPA's.

### What are the options if we can't currently support your development?

#### Network hydraulic modelling/WwTW feasibility studies

As our aim is to support economic development and growth, we do not want to resist new development where possible. However, we must take the capacity of our existing assets, the service we are providing to existing customers and the environment into account. In areas where there are capacity constraints either on our networks or at the wastewater treatment works (WwTW), we may well already have proposals in place to deliver reinforcement works and to create capacity for new developments.

That being said, you may want to develop your site in advance of us undertaking these works. If this is the case, to ensure there's no detriment to our existing customers, you may be required to implement solutions identified by an assessment of either the network or WwTW. It's important to note that you won't be expected to resolve any existing operational issues.

Where further assessments are recommended, you will need to allow sufficient time in your development programme for these studies to be carried out and any reinforcement works to be delivered, as in some circumstances we won't permit a communication to our networks until these works are completed. The delivery of the works will need to align with occupation rather than construction.

Where possible, we will control the delivery of any solutions as part of the planning process. Dependent on the progress of the assessment, we may be in a position to recommend appropriate planning conditions so that the outcomes of the assessment can be delivered as part of any planning permission.

This approach allows us to support the progression of the site through the planning process, however in the absence of a completed assessment and known solutions we may need to work with you and the LPA until the assessment is completed and the outcomes are known.

## Step 4: Connecting to our network

If you've had the green light from us and planning permission has been granted for your development, then it's time to start thinking about the different ways you'll need to connect to our network.

On our website you can find detailed guidance around applying for new water connections, new water mains, new public sewers and new sewer connections.

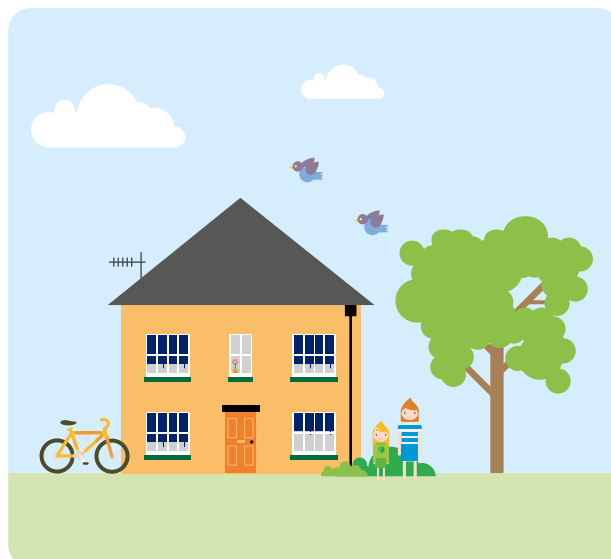
### Contact us

If you've still got any questions or queries, then feel free to contact us:

**Email:** [developer.services@dwrcymru.com](mailto:developer.services@dwrcymru.com)

**Visit:** [www.dwrcymru.com](http://www.dwrcymru.com)

**Tel:** 0800 917 2652





## Contact Us:

If you've got any questions or queries,  
then feel free to contact us:

### Call

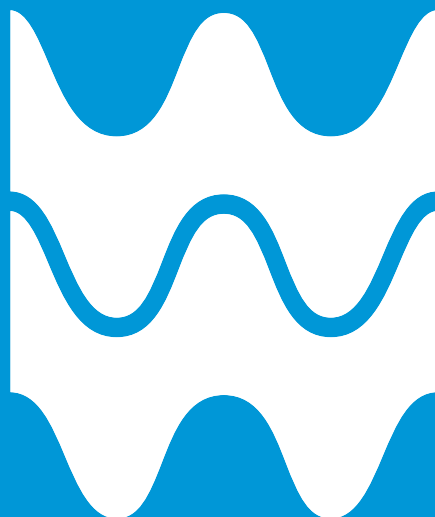
0800 917 2652

### Email

[developer.services@dwrcymru.com](mailto:developer.services@dwrcymru.com)

### Visit

[www.dwrcymru.com](http://www.dwrcymru.com)



@dwrcymru



/dwrcymruwelshwater



PPA0009547 Public Sewer Record



LEGEND(Representative of most common features)

Waste networks:		
Foul chamber	Surface water chamber	Outfall
Combined chamber	Combined sewer overflow	Storm Overflow
Special purpose chamber	Treatment works	Rising main
Pumping station	Private sewer	Private sewer subject to Sect. 104 adoption agreement
NB: Sewer symbol colour indicates the type.	Private Sewer Transfer	Lateral Drain
RED - Combined	Inspection Chamber	
GREEN - Surface Water		
BROWN - Foul		
Purple - Former S24 sewers (for indicative purposes only)		

Notes:

Whilst every reasonable effort has been taken to correctly record the pipe material of DCWW assets, there is a possibility that in some cases pipe material (other than Asbestos Cement or Pitch Fibre) may be found to be asbestos cement (AC) or Pitch Fibre (PF). It is therefore advisable that the possible presence of AC or PF pipes be anticipated and considered as part of any risk assessment prior to excavation

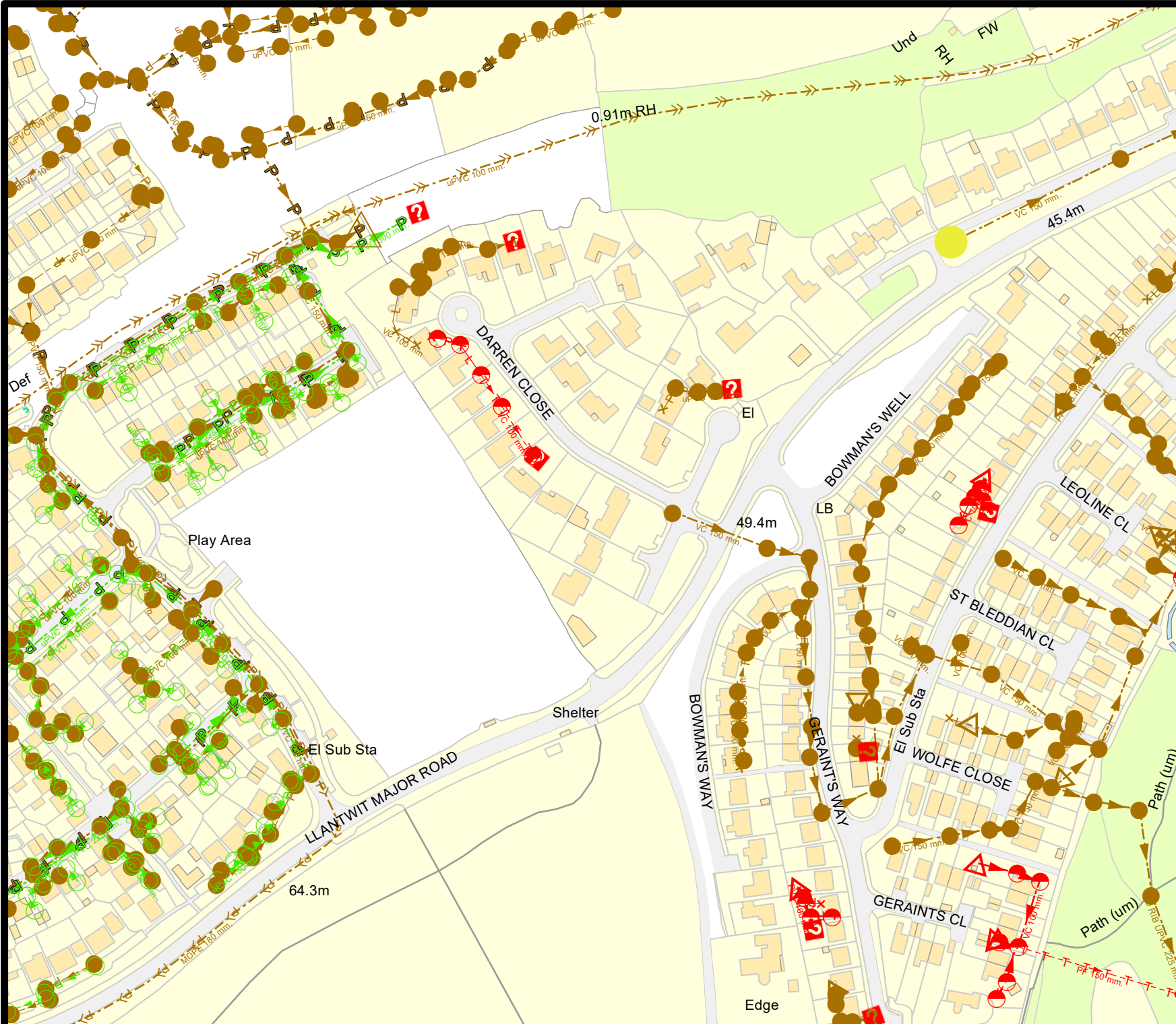
Dŵr Cymru Cylinddydd (the Company) gives this information as to the position of its underground apparatus by way of general guidance only and on the understanding that it is based on the best information available and no warranty as to its correctness is relied upon in the event of excavations or other works made in the vicinity of the company's apparatus. The user of this information is advised to carry out any excavations made on site. The information which is supplied by the Company is done so in accordance with statutory requirements of sections 195 and 199 of the Water Industry Act 1991 which allows open the best information available and, in particular, but without prejudice to the generality of the foregoing, it should be noted that the records that are available to the Company may not disclose the existence of a water main, service pipe, sewer, lateral drain or other apparatus and any associated apparatus, but before September 1990, or if they do, the particular details including the position underground may not be accurate. It must be understood that the furnishing of this information is solely without prejudice to the provisions of the New Roads and Street Works Act 1991 and the Company's right to be compensated for any damage to its apparatus.

Service pipes are not generally shown but their presence should be anticipated.

EXACT LOCATIONS OF ALL APPARATUS  
TO BE DETERMINED ON SITE.

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Map scale: 1:2467  
Printed by: Jeremy Hackman  
Printed on: 30 Jul 2025





Dŵr Cymru  
Welsh Water

PPA0009547 Water Main Plan



#### LEGEND

##### Clean network:

- Sluice valve
- Pressure reducing valve
- Meter
- Bulk meter
- Hydrant
- Cap end
- Air valve

- Stop tap
- Water Treatment Works
- Water Pumping Station
- Existing main
- Non-operational main
- Raw Water

NB: Water main symbol colour indicates the type.  
LIGHT BLUE - Trunk  
DARK BLUE - Distribution  
YELLOW - Raw Water

#### Notes:

Whilst every reasonable effort has been taken to correctly record the pipe material of DCWW assets, there is a possibility that in some cases pipe material (other than Asbestos Cement or Pitch Fibre) may be found to be asbestos cement (AC) or Pitch Fibre (PF). It is therefore advisable that the possible presence of AC or PF pipes be anticipated and considered as part of any risk assessment prior to excavation.

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**EXACT LOCATIONS OF ALL APPARATUS  
TO BE DETERMINED ON SITE.**

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Map Ref: 298460,174645  
Map scale: 1:2467  
Printed by: Jeremy Hackman  
Printed on: 30 Jul 2025



Mr Meurig Hughes  
Stantec

[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

**Date: 30/07/2025**  
**Our Ref: PPA0009547**

Dear Mr Hughes,

**Grid Ref: 298432 174656**  
**Site Address: Clisson Close, Cowbridge**  
**Development: Ysgol Iolo**

I refer to your pre-planning enquiry received relating to the above site, seeking our views on the capacity of our network of assets and infrastructure to accommodate your proposed development. Having reviewed the details submitted I can provide the following comments which should be taken into account within any future planning application for the development.

### **APPRAISAL**

Firstly, we note that the proposal relates to Ysgol Iolo, comprising a maximum student/staff capacity of 536, at Clisson Close, Llanblethian, Cowbridge and acknowledge that the site forms part of a mixed use allocation for housing (MG2(20)) and education (MG6(4)) within the Local Development Plan (LDP). Accordingly, we offer the following comments as part of our appraisal of this development.

### **PUBLIC SEWERAGE NETWORK**

The proposed development site is located in the immediate vicinity of a mixed sewerage system comprising combined, foul and surface water public sewers, which drains to Cowbridge Wastewater Treatment Works (WwTW).

You are also advised that some public sewers and lateral drains may not be recorded on our maps of public sewers because they were originally privately owned and were transferred into public ownership by nature of the Water Industry (Schemes for Adoption of Private Sewers) Regulations 2011. The presence of such assets may affect the proposal. In order to assist you may contact Dwr Cymru Welsh Water on 0800 085 3968 to establish the location and status of the apparatus in and around your site.

Please be mindful that under the Water Industry Act 1991 Dwr Cymru Welsh Water has rights of access to its apparatus at all times.

## **SURFACE WATER DRAINAGE**

As of 7th January 2019, this proposed development is subject to Schedule 3 of the Flood and Water Management Act 2010. The development therefore requires approval of Sustainable Drainage Systems (SuDS) features, in accordance with the 'Statutory standards for sustainable drainage systems – designing, constructing, operating and maintaining surface water drainage systems'. As highlighted in these standards, the developer is required to explore and fully exhaust all surface water drainage options in accordance with a hierarchy preferring infiltration (PL2) and, where infiltration is not possible, disposal to a surface water body (PL3), in liaison with the Lead Local Flood Authority and/or Natural Resources Wales, or surface water sewer or highway drain (PL4) in liaison with the riparian owner and/or Local Highways Authority.

Please note, DCWW is a statutory consultee to the SAB application process and will provide comments to any SuDS proposals by response to SAB consultation. Please refer to further detailed advice relating to surface water management included in our attached Advice & Guidance note and our Developer Services website at <https://developers.dwrcymru.com/en/help-advice/regulation-to-be-aware-of/sustainable-drainage-systems>.

In this instance we acknowledge the pre-planning enquiry form indicates proposals to dispose surface water flows into a soakaway. It is therefore recommended that the developer consult with the regulatory body for this system as well as the Vale of Glamorgan County Council, as the determining SuDS Approval Body (SAB), in relation to their proposals for SuDS features.

## **FOUL WATER DRAINAGE – SEWERAGE NETWORK**

We have considered the impact of foul flows generated by the proposed development and concluded that flows can be accommodated within the public sewerage system. We advise that the flows should be connected to the foul sewer at or downstream of manhole SS98747801 located in Tyla Rhosyr to the east. Should a planning application be submitted for this development we will seek to control these points of communication via appropriate planning conditions and therefore recommend that any drainage layout or strategy submitted as part of your application takes this into account. However, should you wish for an alternative connection point to be considered please provide further information to us in the form of a drainage strategy, preferably in advance of a planning application being submitted.



Welsh Water is owned by Glas Cymru – a 'not-for-profit' company.  
Mae Dŵr Cymru yn eiddo i Glas Cymru – cwmni 'nid-er-elw'.

We welcome correspondence in  
Welsh and English

Dŵr Cymru Cyf, a limited company registered in  
Wales no 2366777. Registered office: Pentwyn Road,  
Nelson, Treharris, Mid Glamorgan CF46 6LY

Rydym yn croesawu gohebiaeth yn y  
Gymraeg neu yn Saesneg

Dŵr Cymru Cyf, cwmni cyfyngedig wedi'i gofrestru yng  
Nghymru rhif 2366777. Swyddfa gofrestredig: Heol Pentwyn  
Nelson, Treharris, Morgannwg Ganol CF46 6LY.

You may need to apply to Dwr Cymru Welsh Water for any connection to the public sewer under Section 106 of the Water Industry Act 1991. However, if the connection to the public sewer network is either via a lateral drain (i.e. a drain which extends beyond the connecting property boundary) or via a new sewer (i.e. serves more than one property), it is now a mandatory requirement to first enter into a Section 104 Adoption Agreement (Water Industry Act 1991). The design of the sewers and lateral drains must also conform to the Welsh Ministers Standards for Foul Sewers and Lateral Drains, and conform with the publication "Sewers for Adoption"- 7th Edition. Further information can be obtained via the Developer Services pages of [www.dwrcymru.com](http://www.dwrcymru.com).

If the development will give rise to a new discharge (or alter an existing discharge) of trade effluent, directly or indirectly to the public sewerage system, then a Discharge Consent under Section 118 of the Water Industry Act 1991 is required from Dwr Cymru / Welsh Water. Please note that the issuing of a Discharge Consent is independent of the planning process and a consent may be refused although planning permission is granted.

### **FOUL WATER DRAINAGE – SEWAGE TREATMENT**

No problems are envisaged with the Wastewater Treatment Works for the treatment of domestic discharges from this site.

### **POTABLE WATER SUPPLY**

With respect to our e-mail request for further information, and in the absence of the developers' anticipated potable water demands, we have been unable to undertake an assessment of the capacity of the potable water supply network to accommodate this proposed development. We welcome further information on the anticipated demand as part of any forthcoming planning application submission.

I trust the above information is helpful and will assist you in forming water and drainage strategies that should accompany any future planning application. I also attach copies of our water and sewer extract plans for the area, and a copy of our Planning Guidance Note which provides further information on our approach to the planning process, making connections to our systems and ensuring any existing public assets or infrastructure located within new development sites are protected.

Please note that our response is based on the information provided in your enquiry and should the information change we reserve the right to make a new representation. Should you have any queries or wish to discuss any aspect of our response please do not hesitate to contact our dedicated team of planning officers, either on 0800 917 2652 or via email at [developer.services@dwrcymru.com](mailto:developer.services@dwrcymru.com)

Please quote our reference number in all communications and correspondence.



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Nghymru rhif 2366777. Swyddfa gofrestredig: Heol Pentwyn  
Nelson, Treharris, Morgannwg Ganol CF46 6LY.

Yours faithfully,

**Matthew Lord**  
**Planning Liaison Manager**  
**Developer Services**

***Please Note that demands upon the water and sewerage systems change continually; consequently the information given above should be regarded as reliable for a maximum period of 12 months from the date of this letter.***



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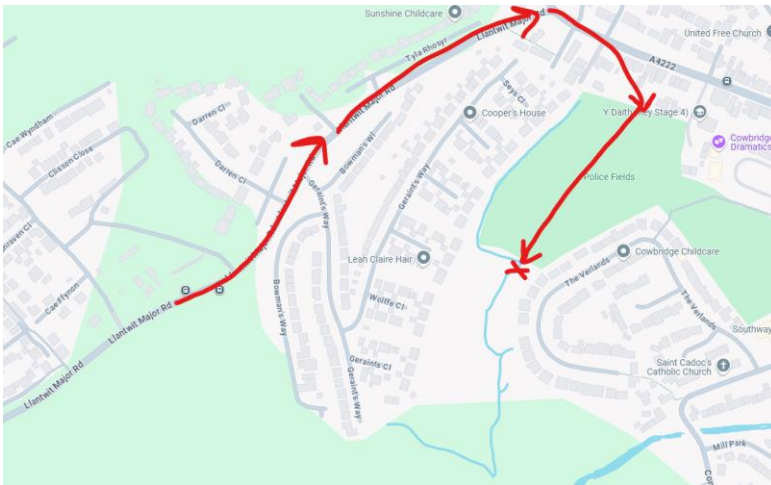
## **A.5 Appendix E – Initial SAB pre-application consultation notes**



## Initial SAB pre-application consultation

Project/File: Ysgol Iolo  
 Date/Time: 10 July 2025 / 10:00  
 Location: Microsoft Teams  
 Attendees: Gareth Thelwell-Davies – Vale SAB  
 Kelly Williams - Vale  
 Conna Ryan – AECOM  
 Adam Norman – Kier  
 Darren March - Kier  
 Kaoru Miyahara - HLM  
 Chris Dolecki – Stantec  
 Meurig Hughes – Stantec

Item:	Action:
<b>Objectives:</b> <ul style="list-style-type: none"> <li>To introduce GT to the scheme</li> <li>Provide an update on the scheme development to date</li> <li>Run through the context of the wider TW residential site and SW drainage strategy</li> <li>Discuss the re-appraisal of the discharge hierarchy following soakaway testing undertaken on site</li> <li>Agree the surface water runoff discharge destination &amp; rates in line with the SuDS standards (S1 &amp; S2) in principle</li> <li>Establish the SABs understanding of the wider drainage network</li> <li>Present the external layout and interception compliance strategy</li> </ul>	CD
<b>Existing site</b> <ul style="list-style-type: none"> <li>Parcel within Clare Garden Village – TW development</li> <li>Topo – falls north &amp; east</li> <li>Split sub catchment</li> <li>Surrounded by existing residential properties at lower level (north &amp; east)</li> <li>Llantwit Major Road to south side which falls E</li> <li>Foul spur by TW has led to building location and placement to get a gravity connection. Lower areas of site below this level</li> </ul>	
<b>TW residential site context</b> <ul style="list-style-type: none"> <li>GT was aware of the wider TW scheme but it pre-dated SAB approval</li> <li>CD presented information provided by TW to inform strategy:</li> <li>Based on targeted infiltration</li> <li>No allowances for school plot made – spur/contributing impermeable area</li> </ul>	

Item:	Action:
<ul style="list-style-type: none"> <li>Land drainage with bund present to northern boundary – agreed with GT to be left in-situ as additional mitigation measure</li> </ul>	
<p><b>Infiltration Testing</b></p> <ul style="list-style-type: none"> <li>CD previously shared infiltration results with GT</li> <li>Testing done on approx. 25m grid</li> <li>2 no. tests showed positive result</li> <li>1 no. test too close to building for use</li> <li>1 no. test possible use but concerns owing to targeted strategy and groundwater flows to lower property</li> <li>Agreed with GT that a SW discharge strategy for the site could not rely on infiltration as its sole means of reliable discharge</li> <li>Permeably lined/ unlined features possible to aide volume loss sitewide</li> </ul>	
<p><b>Discharge Hierarchy Re-appraisal</b></p> <ul style="list-style-type: none"> <li>No watercourse available</li> <li>Agreed with GT that this leads to SW sewer connection – in this case, Llantwit Major Road highway drain</li> <li>GT does not hold much information on the sewer but confirmed from asset mapping file that it discharges to watercourse south of west village:</li> </ul>  <ul style="list-style-type: none"> <li>CCTV to be undertaken locally to site to check on condition near point of connection</li> </ul>	CD & Kier
<p><b>Rate restriction</b></p> <ul style="list-style-type: none"> <li>GF Qbar rate for whole site was presented as 4.9l/s</li> <li>GT requested this be reduced to 60% to reflect actual existing drained area falling towards the proposed destination</li> <li>STN to rerun calcs and provide Kier with revised attenuation volume on this basis</li> </ul>	MH
<p><b>SuDS strategy &amp; Interception</b></p> <ul style="list-style-type: none"> <li>CD presented SuDS provision and strategy for site now infiltration was not viable</li> <li>Roofs -&gt; local rain gardens at ground/ at edge of hard play</li> </ul>	



Item:	Action:
<ul style="list-style-type: none"> <li>MUGA/Hard play/ paved areas &amp; canopies -&gt; permeable paving (asphalt/blocks/wet pour)</li> <li>MEP/Store areas -&gt; rain garden</li> <li>Drop off/pick up aisles -&gt; Perm paved parking bays</li> <li>GT sees this as main risk considering sizing of features for the areas they are serving</li> <li>CD suggested updated calcs, and drawing are sent to GT for review as standalone activity subject to SAB fee for appropriate hourly rate (to be agreed)</li> <li>No formal pre-application to be made considering the outcome of this meeting and programme to planning but consultation on interception compliance as standalone to be completed as above</li> </ul>	STN/Kier
<b>Summary</b> <ul style="list-style-type: none"> <li>The SAB accept the re-appraisal of the SW discharge hierarchy presented and confirmed an active discharge point to the Llantwit Major Road highway drain is agreeable on the basis that the rate is restricted to 60% GFR for the whole site.</li> <li>Some investigatory works of the highway drain are to be completed and STN are to re-consult the SAB on the interception compliance ahead of the planning application</li> </ul>	

The foregoing is considered to be a true and accurate record of all items discussed. If any discrepancies or inconsistencies are noted, please contact the writer immediately.

Regards,

**Stantec Hydrock Limited**

**Christopher Dolecki**, MEng (Hons) CEng MICE  
Associate | Civil Engineering

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Stantec is a global leader in sustainable engineering, architecture, and environmental consulting. The diverse perspectives of our partners and interested parties drive us to think beyond what's previously been done on critical issues like climate change, digital transformation, and future-proofing our cities and infrastructure. We innovate at the intersection of community, creativity, and client relationships to advance communities everywhere, so that together we can redefine what's possible.

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