



Glyncoed Primary School – BREEAM Flood Risk Assessment

DATE:	06 May 2020	CONFIDENTIALITY:	Restricted
SUBJECT:	Glyncoed Primary School - BREEAM FRA		
PROJECT:	70069501 - Glyncoed Primary School	AUTHOR:	Aidan Wilks Daly
CHECKED:	Doug Barker	APPROVED:	Doug Barker

INTRODUCTION

WSP was instructed by Blaenau Gwent County Borough Council to undertake a flood risk appraisal of the proposed new site for Glyncoed Primary School on Badminton Grove, Willowtown, Glyncoed, Blaenau Gwent, NP23 5NA, **Figure 1**. This appraisal is to support the development of the site and demonstrate how the proposals meet with the 'flood resilience' requirements identified under Pol 03 in BREEAM UK New Construction 2018 for accreditation of the development in relation to flood and surface water management.

This was achieved by:

- Reviewing publicly available information in relation to flood risk. Specifically, flood risk mapping data, including fluvial, tidal and surface water flood maps were obtained from Natural Resources Wales (NRW) webpage;
- Consulting NRW in relation to historical records of flooding at the site and surrounding area, and to request modelled flood levels for the watercourse (see Appendix A)
- Consulting Blaenau Gwent County Borough Council (BGCBC) and Welsh Water in relation to historical records of flooding at the site and surrounding area (see Appendices B & C respectively);
- Reviewing drawings of the current site layout and proposed development (see Appendix D)
- Assessing flood risk to the site from all sources;
- Assessment of the impact of climate change on the site, where the data is available from Natural Resources Wales; and
- Preparing a summary flood risk assessment report (this report) identifying compliance with the two credits available for 'flood resilience' under BREEAM Pol 03.

Limitations

This report is based on flood risk information available and current at the time of drafting. This report is based on the interpretation and assessment of data provided by third parties. WSP cannot be held responsible for the accuracy of the third-party data and the conclusions and findings of this report may change if the data is amended or updated after the date of consultation.

The conclusions of this report are based on the data gathered for the purposes of the report and are therefore limited in their accuracy in proportion to the validity of the dataset. The data gathered has been based on an agreed scope of works.

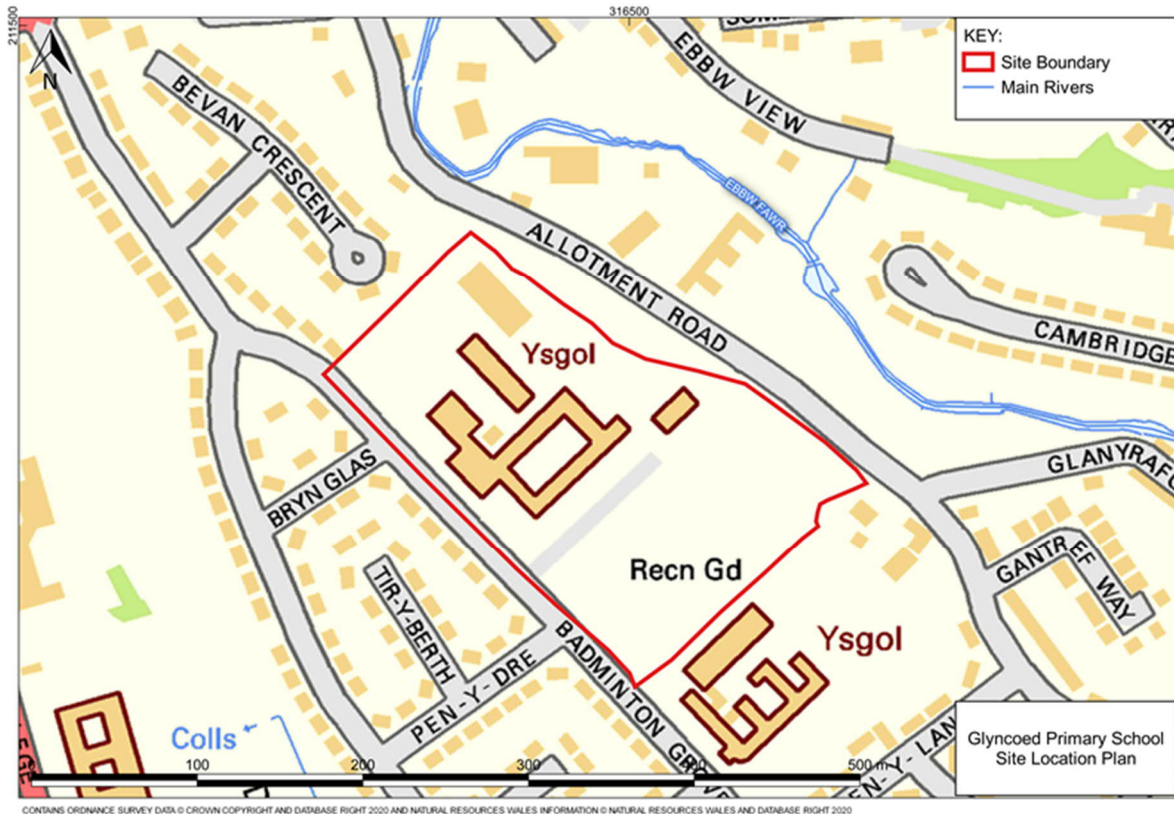


Figure 1: The Site – Glyncoed Primary School.

Proposed Development

The site currently comprises the footprint of the demolished Glyncoed comprehensive school, sports pitches and playing fields to the south of the site and Ebbw Vale Bowls club in the northwest of the site. There are also two access roads, one to the north of the site which provides access to the Bowls club and one to the south of the site adjacent to the sports pitches and playing fields.

The existing buildings of Glyncoed Primary School are situated to the south of the site boundary. The proposed development is for a new 360 place primary school and an adjacent 52-place ‘day nursery’ childcare facility, to be built on the footprint of the demolished comprehensive school.

The existing vehicle access from Badminton Grove will be retained / upgraded and will act to serve the existing Bowls club and staff car parking and service area for the new primary school. Similarly, the existing access from Badminton Grove which currently serves the community playing facilities will be used to serve the proposed childcare facility car parking (this access/road does not fall within the red line boundary). The proposed site layout is provided in Appendix D.

Site Topography

The topography of the site was assessed using NRW 1m DTM LiDAR data. As shown in **Figure 2** the site slopes from the northwest down towards the southeast and the Ebbw Fawr. The maximum elevation at the site is approximately 328mAOD, located in the northwest corner and the minimum elevation is approximately 318mAOD in the southeast corner of the site, adjacent to Allotment Road. The Ebbw Fawr watercourse is located approximately 50m from the northeast boundary of the Site, with the banks of the watercourse having an elevation of approximately 305mAOD.

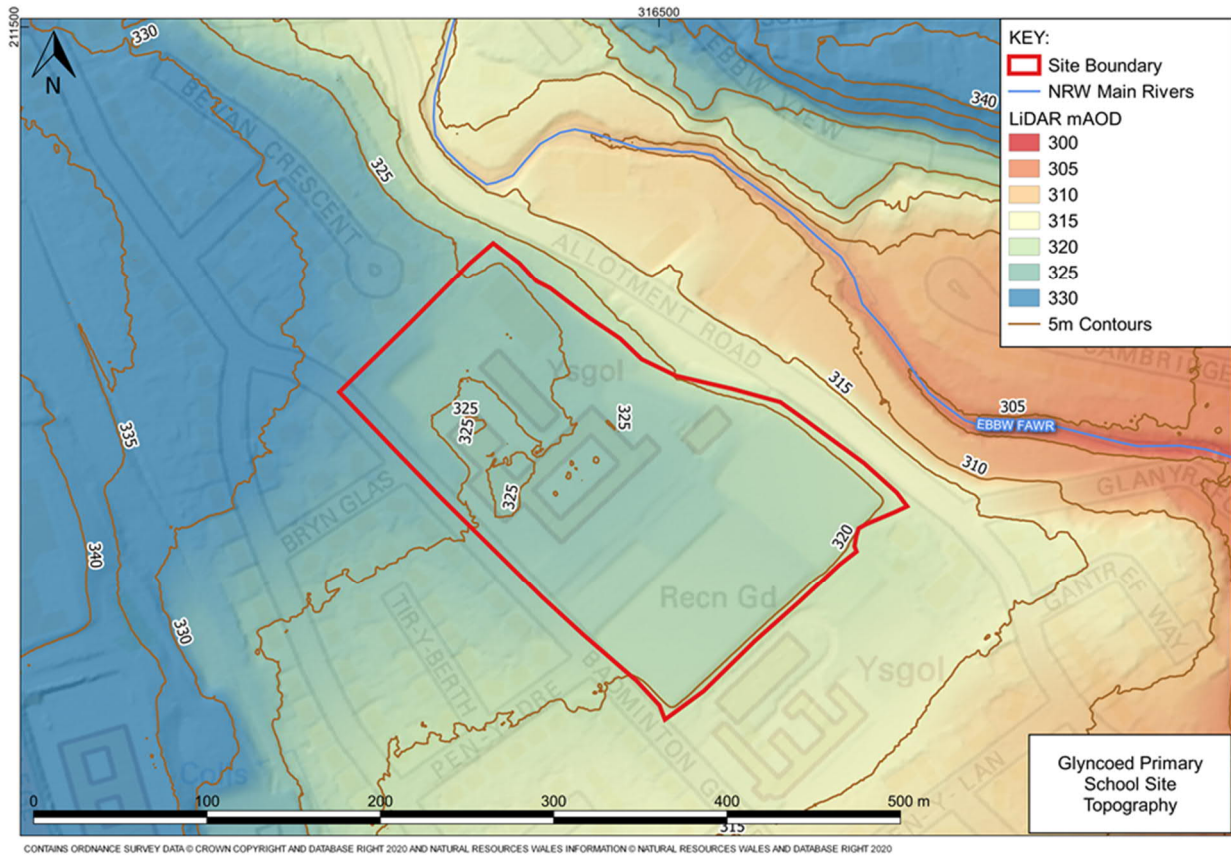


Figure 2: Site Topography

FLOOD RISK

Fluvial Flood Risk

CONTEXT

At its closest, the site is located approximately 50m southeast of the Ebbw Fawr / Ebbw River watercourse which flows from north to south as it passes the site. As the Ebbw Fawr flows past the site, it is categorized as a Main River.

HISTORICAL FLOOD RECORDS

Natural Resources Wales historic flood map shows no records of historic flooding at the site or in the surrounding area, as shown by **Figure 3**. In their consultation response NRW confirmed that they do not hold any records of flooding at the site (see Appendix A).

BGCBC were also consulted regarding historic flooding and in their consultation response they stated that they do not hold any records of flooding at the site (see Appendix B). The BGCBC Strategic Flood Consequences Assessment (SFCA)¹ does not detail any records of flooding near to the site.

¹ Blaenau Gwent County Borough Council (2010) Strategic Flood Consequences Assessment.

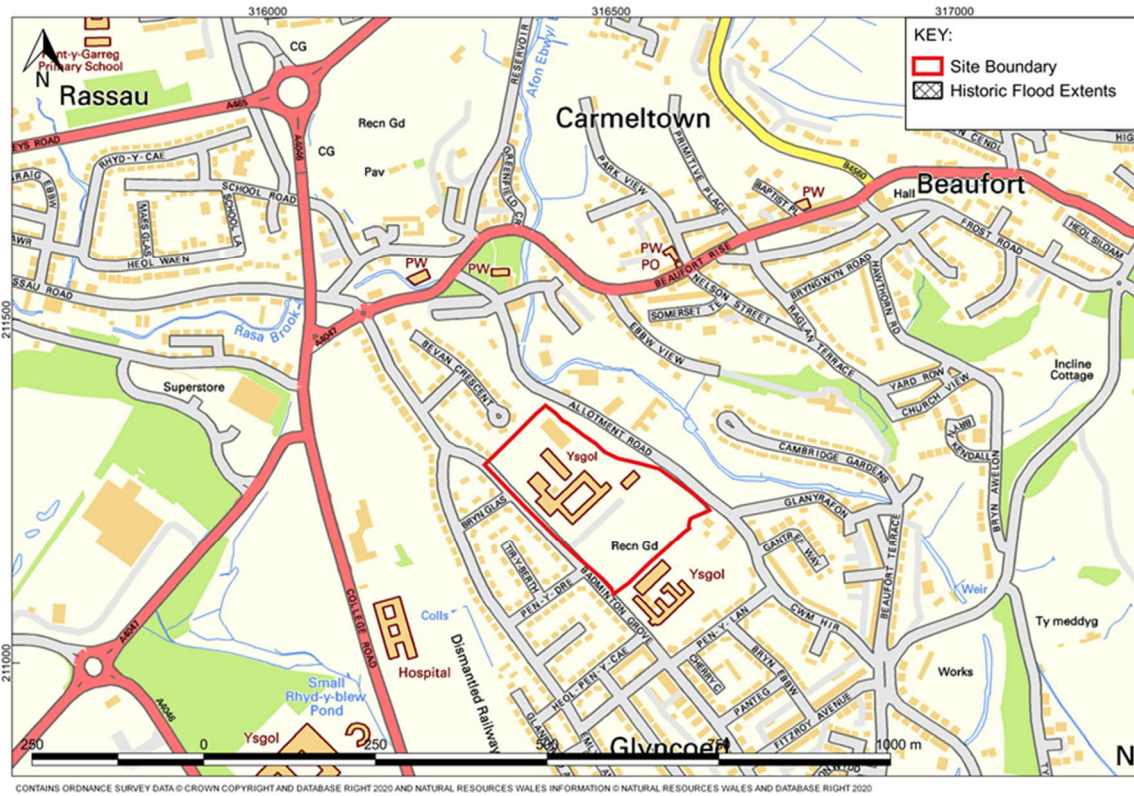


Figure 3: Natural Resource Wales Historic Flood Map

NATURAL RESOURCE WALES FLOOD MAPPING

NRW Long Term Flood Risk Map² shows the site to be located within Flood Zone 1, meaning an annual probability of fluvial flooding of less than 1 in 1,000 years (>0.1% Annual Exceedance Probability (AEP)) or a low risk of flooding as shown in **Figure 4**. The extents of Flood Zones 2 and 3 do not reach the site and at their closest point are approximately 100m away from the site.

The Flood Map for Planning does not account for the presence of any flood defences, however there are no formal flood defences in the area.

² Natural Resources Wales (2020) Long Term Flood Risk Mapping. Accessed online in April 2020: <https://naturalresources.wales/evidence-and-data/maps/long-term-flood-risk/?lang=en>

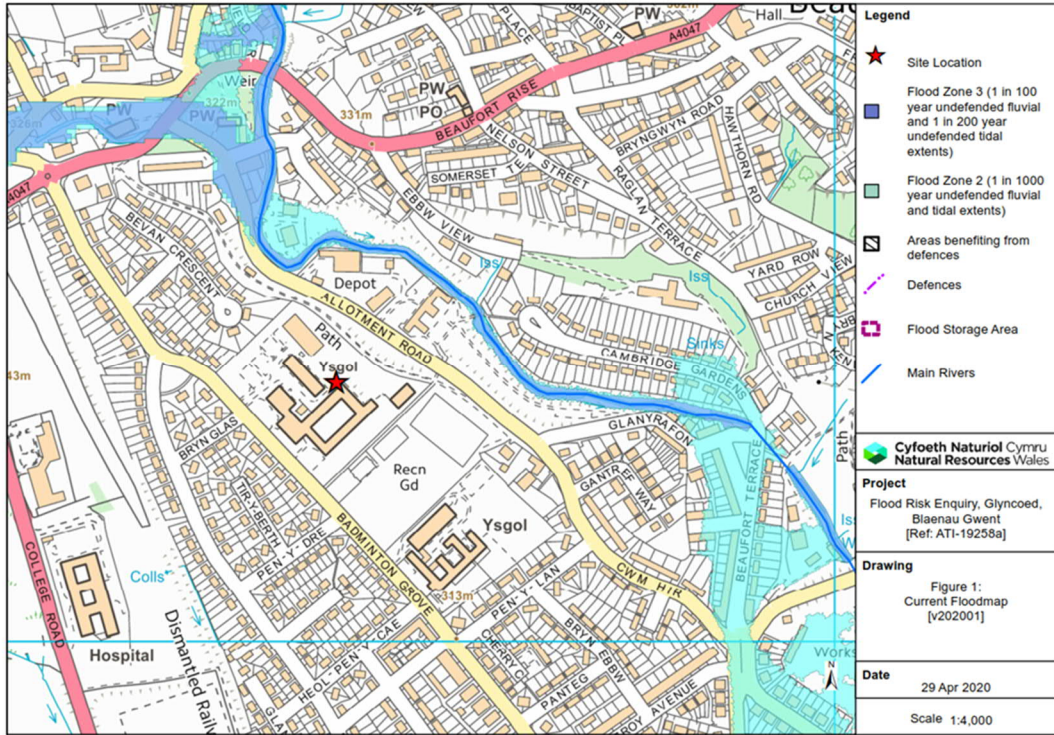


Figure 4: Natural Resource Wales' Flood Map for Planning

MODELLED FLOOD LEVELS

WSP consulted NRW submitting a Product 4 data request for modelled flood levels along the Ebbw Fawr, with peak modelled water levels from their Ebbw Integrated Catchment Model provided. The locations of the modelled flood nodes provided by NRW are shown in **Figure 5**.

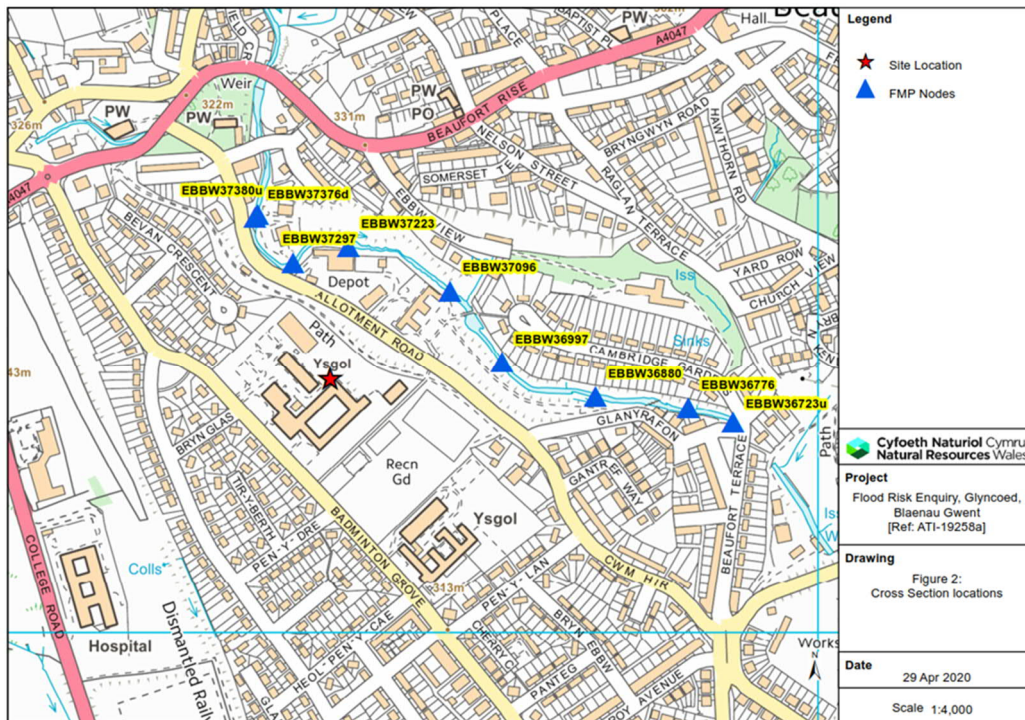


Figure 5: Natural Resource Wales' Flood Model Nodes

Table 1: Natural Resources Wales' Modelled Flood Levels

Peak modelled flood levels (mAOD)							
Model Node	1 In 30	1 in 50	1 in 75	1 in 100	1 in 100 CC25	1 in 200	1 in 1000
EBBW37380u	314.62	314.67	314.71	314.74	315.57	315.12	315.95
EBBW37376d	314.66	314.72	314.77	314.80	314.97	314.90	315.49
EBBW37297	312.20	312.23	312.26	312.28	312.38	312.34	312.57
EBBW37223	310.63	310.68	310.71	310.74	310.85	310.82	311.07
EBBW37096	307.93	307.97	308.01	308.03	308.16	308.12	308.38
EBBW36997	305.92	305.97	306.02	306.05	306.13	306.10	306.38
EBBW36880	304.06	304.11	304.15	304.19	304.44	304.34	304.91
EBBW36776	302.78	302.88	303.00	303.16	303.90	303.61	304.69
EBBW36723u	302.57	302.75	302.95	303.13	303.89	303.59	304.77

The closest flood nodes to the site are EBBW37297 and EBBW37096. The maximum 1 in 100-year modelled flood levels at these nodes are 312.23mAOD and 308.03mAOD respectively. The maximum 1 in 1000-year modelled flood level at EBBW37297 is 312.57mAOD and it is 308.38mAOD at EBBW37096. These modelled flood levels compare with a minimum on site elevation of 318.05mAOD in the southeast of the site, resulting in a difference of between +5.77m and +10.02m for the 1 in 1000-year event, and a difference of between +5.48 and +9.67m in the 100-year event. The site is significantly above the peak modelled flood levels in the present day.

In their product 4 consultation response NRW also provided modelled climate change flood levels. The site is located within the Severn River Basin District, so based on Welsh Government Guidance³, a change factor / central estimate of 25% increase in peak river flows is expected by the 2080s. Peak flood levels for the 1 in 100-year event plus a 25% allowance for climate change are estimated to be 312.38 mAOD at node EBBW37297 and 308.16mAOD at node EBBW37096, resulting in a difference of between +5.67m and +9.89m. The site is significantly above the modelled climate change flood levels. Therefore, the risk of fluvial flooding is considered to be **low** for the lifetime of the development taking account of the impacts of climate change.

Tidal Flood Risk

Given the sites elevation of between approximately 318mAOD to 328mAOD, the site is not at risk of tidal flooding either in the present day or when the impacts of climate change are taken into account.

Surface Water Flood Risk

An assessment of the surface water flood risk to the site has been conducted by reviewing the information available from the NRW Surface Water Map (**Figure 6**). This mapping categorises the risk of surface water flooding with the following risk bands:

- High risk – greater than 1 in 30 annual probability of flooding (>3.3% AEP);
- Medium risk – between 1 in 30 and 1 in 100 annual probability of flooding (1-3.3% AEP);
- Low risk – between 1 in 100 and 1 in 1,000 annual probability of flooding (0.1-1% AEP); and
- Very low risk – less than 1 in 1,000 annual probability of flooding (<0.1% AEP).

³ Welsh Government (2018) Climate Change Allowances. Accessed online in April 2020: <https://gov.wales/sites/default/files/publications/2018-11/flood-consequence-assessments.pdf>

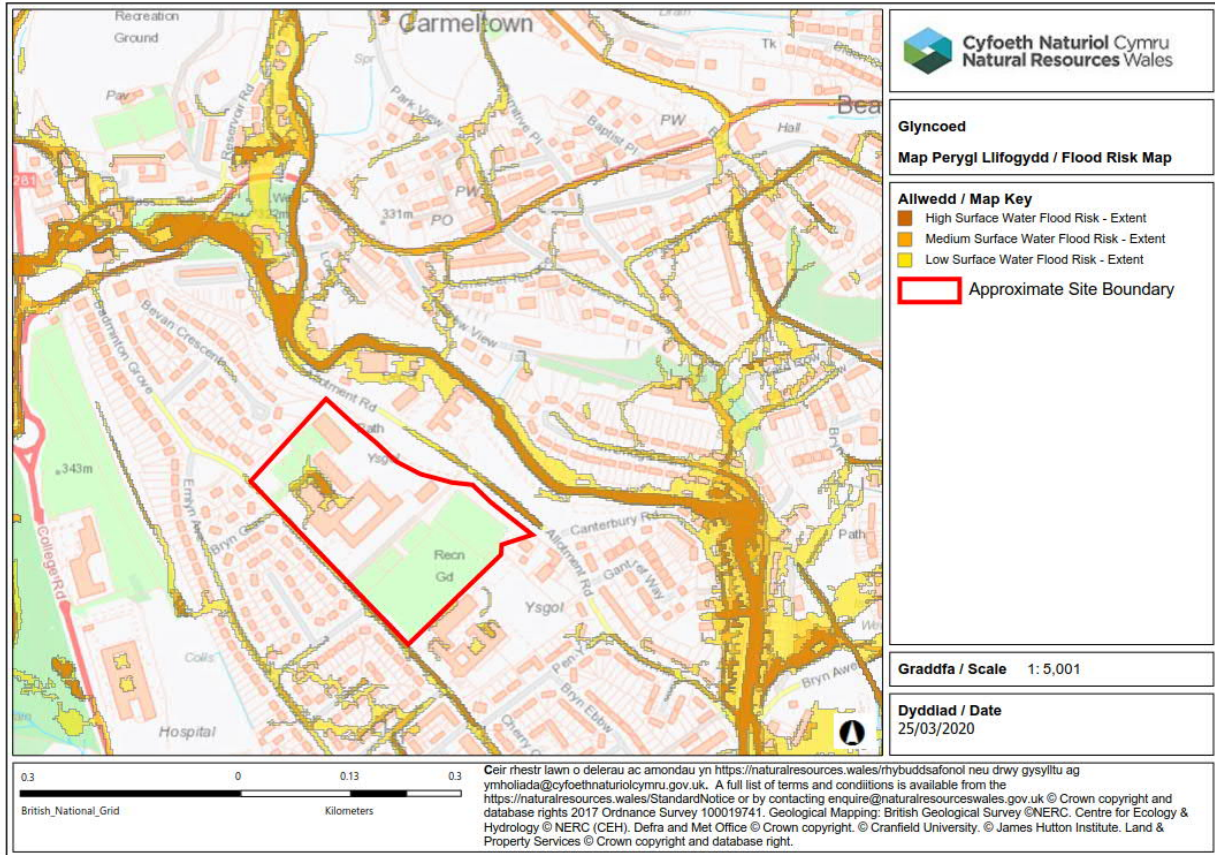


Figure 6: Natural Resource Wales' Flood Risk Map for Surface Water

As shown in **Figure 6**, most of the site is largely unaffected by surface water flooding, i.e. at very low risk, meaning a less than 1 in 1000 annual probability of flooding.

In the northwest of the site, there is an area shown to be at high risk of surface water flooding, with this area experiencing an annual probability of flooding of greater than 1 in 30 years. Flood depths for this area are expected to be between 0.15m and 0.3m for high risk (1 in 30 year) and medium risk (1 in 100 year) events. During the low risk (1 in 1000 year) event, surface water flood depths of between 0.3m and 0.9m could accumulate in this area.

This area shown to be at high-risk lies within the footprint of the demolished Glyncoed comprehensive school, in a localised depression between the location of two former school buildings. At this location there is a low point of 324.7mAOD compared to elevations at the edge of the former school buildings of 325.0mAOD. Given that these buildings have been demolished, the risk in this location is expected to be eliminated when the site is reprofiled prior to development.

The suitability of the surface water drainage strategy in reference to BREEAM credits will be assessed separately to this report.

Based on the above, with the implementation of reprofiling and the surface water drainage strategy as part of the development, the risk of surface water flooding to the development is assessed to be **Low**.

Ground Water Flood Risk

The British Geological Survey (BGS)⁴ shows the bedrock underlying the site to be from the South Wales Middle Coal Measures Formation, which comprises of Mudstone, Siltstone and Sandstone. Superficial deposits at the site are shown to comprise of Till, Devensian - Diamicton. Soils at the site are slowly permeable wet very acidic upland soils with a peaty surface.

The BGS hydrogeology 652K map shows the site to be on a moderately productive aquifer where groundwater flow is virtually all through fractures and other discontinuities. In their consultation response BGCBC stated that there is a high or perched water table to the west of the (see Appendix B). The closest publicly available borehole record to the site is borehole log SO11SE138, which lies approximately 300m northwest of the site, at borehole SO11SE138 groundwater was struck at 11mbgl. It is not possible to confirm the presence of a high or perched water table based on the borehole records that are publicly available.

The BGCBC Strategic Flood Consequences Assessment (SFCA) does not identify any significant groundwater issues in the Borough.

Based on the absence of any historic groundwater flood incidents within the BGCBC SFCA, the risk of groundwater flooding at the site is assessed to be **Low**.

Reservoir Flood Risk

There are two main reservoirs to the north of Glyncoed, these are, Carno Reservoir (on the Ebbw River) and Garnlydan reservoir (on the River Clydach). The locations of these reservoirs in relation to the site are shown in **Figure 7**.

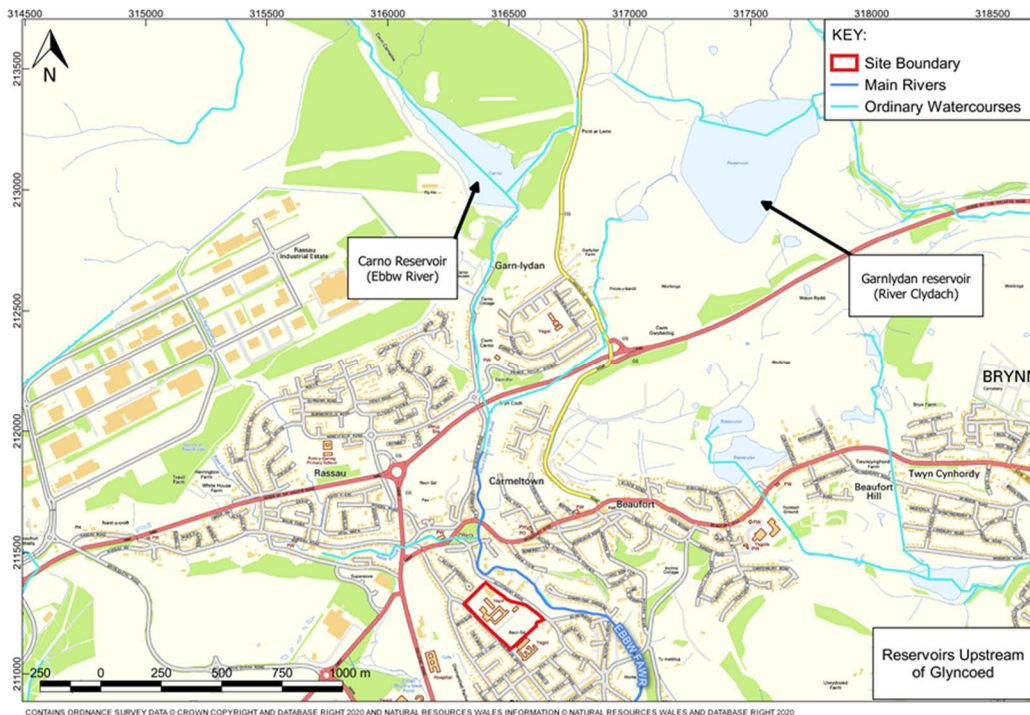


Figure 7: Reservoir Location Map

⁴ NERC (2020) British Geological Survey – Geology of Britain Viewer. Accessed online, April 2020: <http://mapapps.bgs.ac.uk/geologyofbritain/home.html?>

Figure 8 shows the NRW flood risk map for reservoirs, which shows the site to be outside of the maximum extent of flooding should a nearby reservoir breach. Therefore, the risk of reservoir flooding to the site is assessed to be **Low**.

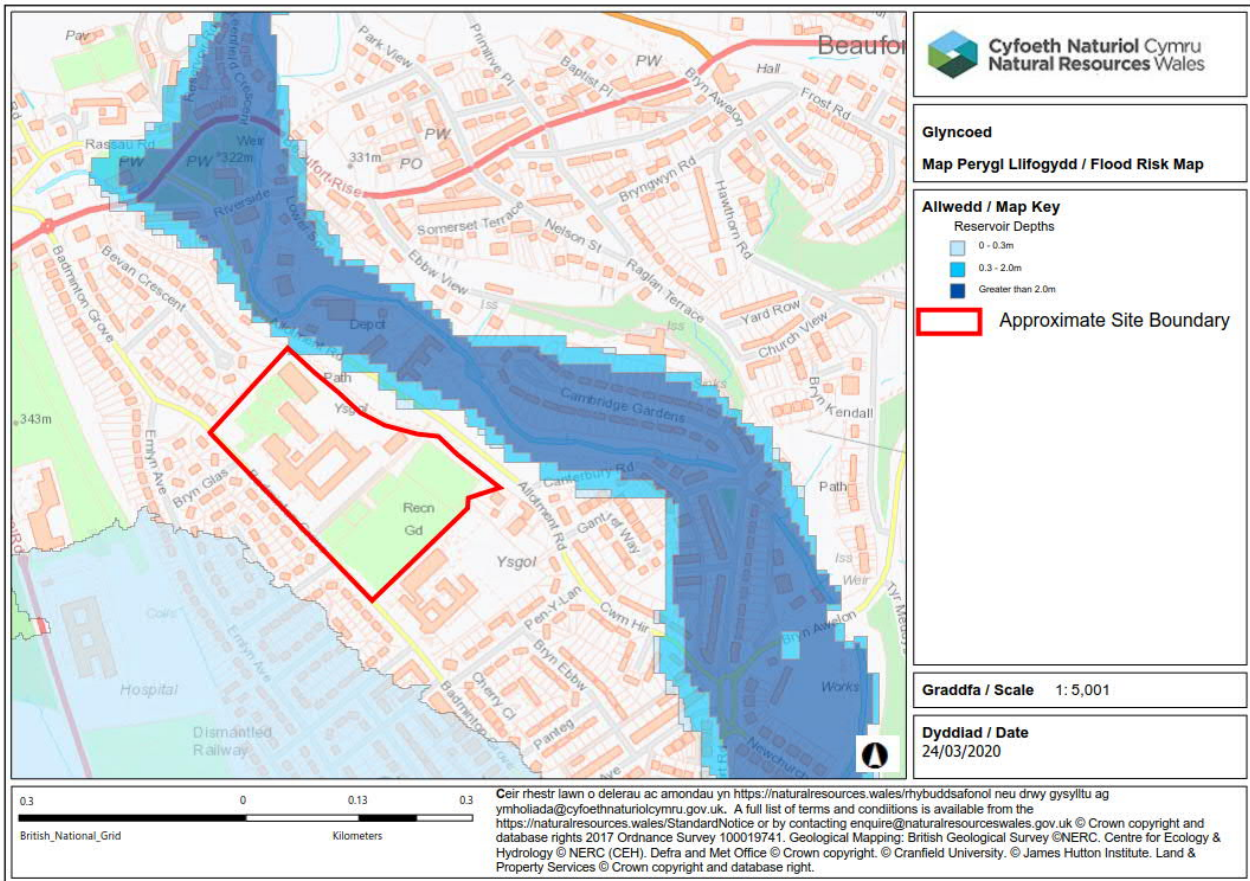


Figure 8: Natural Resources Wales' Reservoir Flood Risk Map

Sewer Flood Risk

Welsh Water and BGCBC were consulted (see Appendices B & C) but did not hold any records of historic sewer flooding at the site.

The SFCA for Blaenau Gwent1 does not detail any records of sewer flooding in proximity to the site.

There are no known records of sewer flooding at the site based on the currently available information.

Therefore, the risk of sewer flooding is assessed to be **Low**.

Flood Risk Summary

The risk of flooding at the site is assessed as follows:

- **Fluvial** – based on the location of the site in Flood Zone 1 and a comparison of the modelled flood levels from NRW and at site levels from NRW LiDAR, the risk of fluvial flooding to the site is assessed to be **Low** in the present day and taking into account the potential impacts of climate change.
- **Surface Water** – The mapping shows that the majority of the site is at very low risk of surface water flooding. With the implementation of ground reprofiling to prepare the land for development and the implementation of a surface water drainage strategy, the risk of surface water flooding to the development is assessed to be **Low**.

- **Groundwater** – Based on the geology and absence of any historic groundwater flooding in proximity to the site, the risk of groundwater flooding is deemed to be **Low**.
- **Reservoir** – The site is outside of the maximum flood extent of reservoir flooding, therefore, the risk of reservoir flooding to the site is assessed to be **Low**.
- **Sewer** – **Low** based on the available information from the SFCA and response from Welsh Water.

From our assessment overall, the risk of flooding to the site is deemed to be **Low**.

BREEAM CREDITS UNDER POL 03

BREEAM Credits available under Pol 03 relate to flood and surface water management. This assessment specifically relates to the two credits available in this section for ‘flood resilience’. Credits for surface water runoff under Pol 03 have been assessed as part of the Sites drainage strategy. These requirements for the ‘flood resilience’ credits are detailed in **Table 2** below. The aim of the BREEAM Credit Pol 03 is:

“To avoid, reduce and delay the discharge of rainfall to public sewers and watercourses, thereby minimising the risk and impact of localised flooding on-site and off-site, watercourse pollution and other environmental damage.”

Two credits are available for Pol 03 in relation to ‘flood resilience’ as set out below.

- **Two credits** – low flood risk:
- *Where A site-specific flood risk assessment (FRA) confirms the development is in a flood zone that is defined as having a low annual probability of flooding. The FRA takes all current and future sources of flooding into consideration (see sources of flooding table).*
- One credit can be achieved in an area of medium/high flood risk.

Table 2: BREEAM Credit Pol 03 – Sources of Flooding

Sources of flooding	<p>The FRA must detail the risk of flooding from the following sources:</p> <ol style="list-style-type: none"> 1. Fluvial (rivers) 2. Tidal 3. Surface water: sheet run-off from adjacent land (urban or rural) 4. Groundwater: most common in low-lying areas underlain by permeable rock (aquifers) 5. Sewers: combined, foul or surface water sewers 6. Reservoirs, canals and other artificial sources.
<p>The content of the FRA should be based on historic trends and account for predicted changes to the climate which may impact on the flood risk to the site in future</p>	

The flood risk summary report identified that the risk of flooding is low and therefore achieves **2 credits** under BREEAM Pol 03 in relation to ‘flood resilience’.



CONCLUSIONS

This flood risk appraisal has found that the risk of flooding to the site is low from all sources. With respect to surface water there is currently some areas of high flood risk, but this will be mitigated through land reprofiling needed as part of this development and reduce this to a low risk., Based on the findings in this flood risk statement, under the 'Flood Resilience' category from Pol 03 of the BREEAM credit system, the Glyncoed primary school site on Badminton Grove, in Glyncoed, should be awarded **2 credits**. The site is shown to be in Flood Zone 1 and will remain at low risk of fluvial flooding in the future.



Appendix A Natural Resources Wales Consultation Response

Wilks-Daly, Aidan

From: Data Distribution <datadistribution@cyfoethnaturiolcymru.gov.uk>
Sent: 30 April 2020 16:12
To: Wilks-Daly, Aidan
Subject: ATI 19258A - Flood Risk Enquiry: Glyncoed, Blaenau Gwent
Attachments: FCA_FRA Standard_Notice V3 2018.pdf; 20200429_ATI-19258a Flood Risk Enquiry at Glyncoed, Blaenau Gwent.pdf

Hi Aidan

Product 4 data attached. This is provided under the terms of the attached FCA Standard Notice.

As previously advised this includes climate change.

Apologies for the delay.

Regards

Kathy Banner

Cymorth Technegol Cyswllt Cyfoeth/Customer Hub Technical Support
Cwsmeriaid, Cyfathrebu a Gwybodaeth/Customer, Communications and Information Directorate
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Croesewir gohebiaeth yn Gymraeg a byddwn yn ymateb yn Gymraeg, heb i hynny arwain at oedi.

Correspondence in Welsh is welcomed, and we will respond in Welsh without it leading to a delay.



From: Data Distribution <datadistribution@cyfoethnaturiolcymru.gov.uk>
Sent: 15 April 2020 08:23
To: Wilks-Daly, Aidan <Aidan.Wilks-Daly@wsp.com>
Subject: ATI 19258A - Flood Risk Enquiry: Glyncoed, Blaenau Gwent

Hi Aidan

Further to your query regarding available data, I have been advised that we can provide a 1D Product 4 which would relate to the site, or alternatively you can have Products 5, 6 or 7.

Please refer to the attached FCA Product Description Table which also indicates any applicable costs.

Provision of Product 4 is subject to a charge of £50.00 + VAT @ 20% - which is payable in advance.

(VAT registration number: GB 145 1537 25)

Total Charge = £60.00

If you wish to pay by credit or debit card please contact me on 03000 653568 and I will be pleased to take these details over the phone.

Regards

Kathy Banner

Cymorth Technegol Cyswllt Cyfoeth/Customer Hub Technical Support
Cwsmeriaid, Cyfathrebu a Gwybodaeth/Customer, Communications and Information Directorate
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Correspondence in Welsh is welcomed, and we will respond in Welsh without it leading to a delay.



From: Wilks-Daly, Aidan <Aidan.Wilks-Daly@wsp.com>
Sent: 14 April 2020 12:20

To: Data Distribution <datadistribution@cyfoethnaturiolcymru.gov.uk>
Subject: RE: ATI 19258A - Flood Risk Enquiry: Glyncoed, Blaenau Gwent

Hi Kathy,

Whilst we understand that the site is located in Flood Zone 1 and outside of your modelled flood extents, at its closest the Afon Ebwy River is just 50m northeast of the site.

Given the close proximity of the river to our site Would you be able to provide us modelled flood levels from the closest point to the Afon Ebwy River, specifically modelled climate change flood levels?

We understand that the present day fluvial flood risk to the site is low however we wish to assess the future flood risk to the site given the likely impacts of climate change.

Kind Regards,

Aidan

Aidan Wilks Daly Msc BSc (Hons) GradCIWEM
Graduate Hydrologist



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From: Data Distribution <datadistribution@cyfoethnaturiolcymru.gov.uk>

Sent: 14 April 2020 12:06

To: Wilks-Daly, Aidan <Aidan.Wilks-Daly@wsp.com>

Subject: ATI 19258A - Flood Risk Enquiry: Glyncoed, Blaenau Gwent

Hi Aidan

Unfortunately your site of interest falls outside of our modelled flood outlines, so we are unable to provide any data.

Regards

Kathy Banner

Cymorth Technegol Cyswllt Cyfoeth/Customer Hub Technical Support
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Correspondence in Welsh is welcomed, and we will respond in Welsh without it leading to a delay.



From: Wilks-Daly, Aidan <Aidan.Wilks-Daly@wsp.com>

Sent: 24 March 2020 08:49

To: Data Distribution <datadistribution@cyfoethnaturiolcymru.gov.uk>

Cc: Barker, Doug <Doug.Barker@wsp.com>

Subject: Flood Risk Enquiry: Glyncoed, Blaenau Gwent

Dear Sir/Madam,

Allotment Road, Willowtown, Glyncoed, Blaenau Gwent, Wales, NP23 5NT (316453, 211282) – Flood Risk Enquiry

We are reviewing the flood risk for the above site in Glyncoed (see attached site location plan).

The Development Advice Map shows the site to be located in Zone A and the long term flood risk map shows the site to be located in Flood Zone 1.

To support our flood risk investigation it would be helpful if you can provide us with a copy of the following available if it is available:

- Product 4 data for the site to provide modelled flood levels within or adjacent to the site (we note that at its closest the Afon Ebwy River is just 50m northeast of the site) ;
- The details of any historic flood incidents at the site or in the immediate vicinity of the site;
- The details of any flood defences or assets within the site or within the immediate vicinity of the site; and
- Any other relevant information in relation to flood risk or drainage of the identified site.

We would welcome any additional comments you may have with respect to the site.

Kind Regards,

Aidan

Aidan Wilks Daly Msc BSc (Hons) GradCIWEM

Graduate Hydrologist



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ATI – 19258a Flood Risk Enquiry: Glyncoed, Blaenau Gwent

E: 316453 N: 211282

1.0 Current Flood Map

Figure 1 shows the current Flood Map (version 202001) at this location. The Flood Map represents a combination of the undefended fluvial and tidal flood extents derived from a combination of detailed local modelled and nationally generalised modelled data.

More information on the Flood Map can be obtained from the Natural Resources Wales website <http://www.naturalresources.wales/floodriskmap>

2.0 Local Flood Risk Mapping Study

Ebbw ICM Mapping Study

The results summarised below are taken from the Ebbw Integrated Catchment Model, 'ICM', (v1.0) developed by Wallingford HydroSolutions in 2018 (*ref 1*).

The study uses a 1D/2D linked Flood Modeller Pro-TuFLOW hydraulic model to assess flooding from the River Ebbw from its upper catchment in Beaufort to its confluence with the River Usk near Duffryn, Newport. The model also incorporates a small length of the River Sirhowy from Ynysddu to its confluence from the River Ebbw. The Ebbw ICM builds on and replaces existing NRW models in these areas.

Hydrological estimates have been developed using a combination of FEH statistical and ReFH2 methods and maintain critical storm durations throughout the catchment. Modelled flow estimates throughout the catchment have been calibrated to gauged data at Aberbeeg, Wattsville and Rhiwderin gauging stations.

Climate change values are based on updated Welsh Government Guidance*:

<http://gov.wales/topics/planning/policy/policyclarificationletters/2016/cl-03-16-climate-change-allowances-for-planning-purposes/?lang=en>

The Ebbw ICM results are the outcome of a large modelling study reconciling flood hydrology estimates with modelled level extents. Where subsequent hydraulic modelling is required modelling should be based on the Ebbw ICM model as it is a combined model comprising hydrology and hydraulics.

*Note:

Climate Change factor 25% will be termed Q100CCc (Climate Change central estimate)

Climate Change factor 70% will be termed Q100CCu (Climate Change upper estimate)

1D Model Results

Tables 1-2 show the defended modelled water levels (mAOD) and flows (m³/s) for the model node points in the site vicinity. **Figure 2** shows the location of these Flood Modeller Pro (FMP) node points in relation to the site of interest.

Table 1: Defended Design Levels

Cross-Section	Peak Water Levels (mAOD)						
	1 in 30	1 in 50	1 in 75	1 in 100	1 in 100 CCc	1 in 200	1 in 1000
EBBW37380u	314.62	314.67	314.71	314.74	315.57	315.12	315.95
EBBW37376d	314.66	314.72	314.77	314.80	314.97	314.90	315.49
EBBW37297	312.20	312.23	312.26	312.28	312.38	312.34	312.57
EBBW37223	310.63	310.68	310.71	310.74	310.85	310.82	311.07
EBBW37096	307.93	307.97	308.01	308.03	308.16	308.12	308.38
EBBW36997	305.92	305.97	306.02	306.05	306.13	306.10	306.38
EBBW36880	304.06	304.11	304.15	304.19	304.44	304.34	304.91
EBBW36776	302.78	302.88	303.00	303.16	303.90	303.61	304.69
EBBW36723u	302.57	302.75	302.95	303.13	303.89	303.59	304.77

Table 2: Defended Design Flows

Cross-Section	Peak Water Flows (m ³ /s)						
	1 in 30	1 in 50	1 in 75	1 in 100	1 in 100 CCc	1 in 200	1 in 1000
EBBW37380u	10.9	12.0	12.9	13.6	16.8	15.8	17.3
EBBW37376d	10.9	12.0	12.9	13.6	16.8	15.8	17.3
EBBW37297	13.8	15.2	16.3	17.2	21.5	19.9	30.9
EBBW37223	13.8	15.2	16.3	17.2	21.5	19.9	31.1
EBBW37096	13.8	15.2	16.3	17.2	21.5	19.9	31.1
EBBW36997	13.8	15.2	16.3	17.2	21.5	19.9	31.0
EBBW36880	21.7	23.8	25.6	27.0	33.8	31.1	47.7
EBBW36776	21.7	23.8	25.6	27.0	33.8	31.1	48.0
EBBW36723u	21.7	23.8	25.6	27.0	33.7	31.1	40.5

3.0 Additional Information

We have no historic flooding information for this location.

The local authority may be able to provide information on issues such as localised flooding from sewers, drains and culverts.

4.0 References

1. River Ebbw Integrated Catchment Model, Wallingford HydroSolutions Limited (2018)

Notes

Undefended scenarios are provided as being a possible worst case scenario in the event of defence failure. They are used as the basis of the Flood Map.

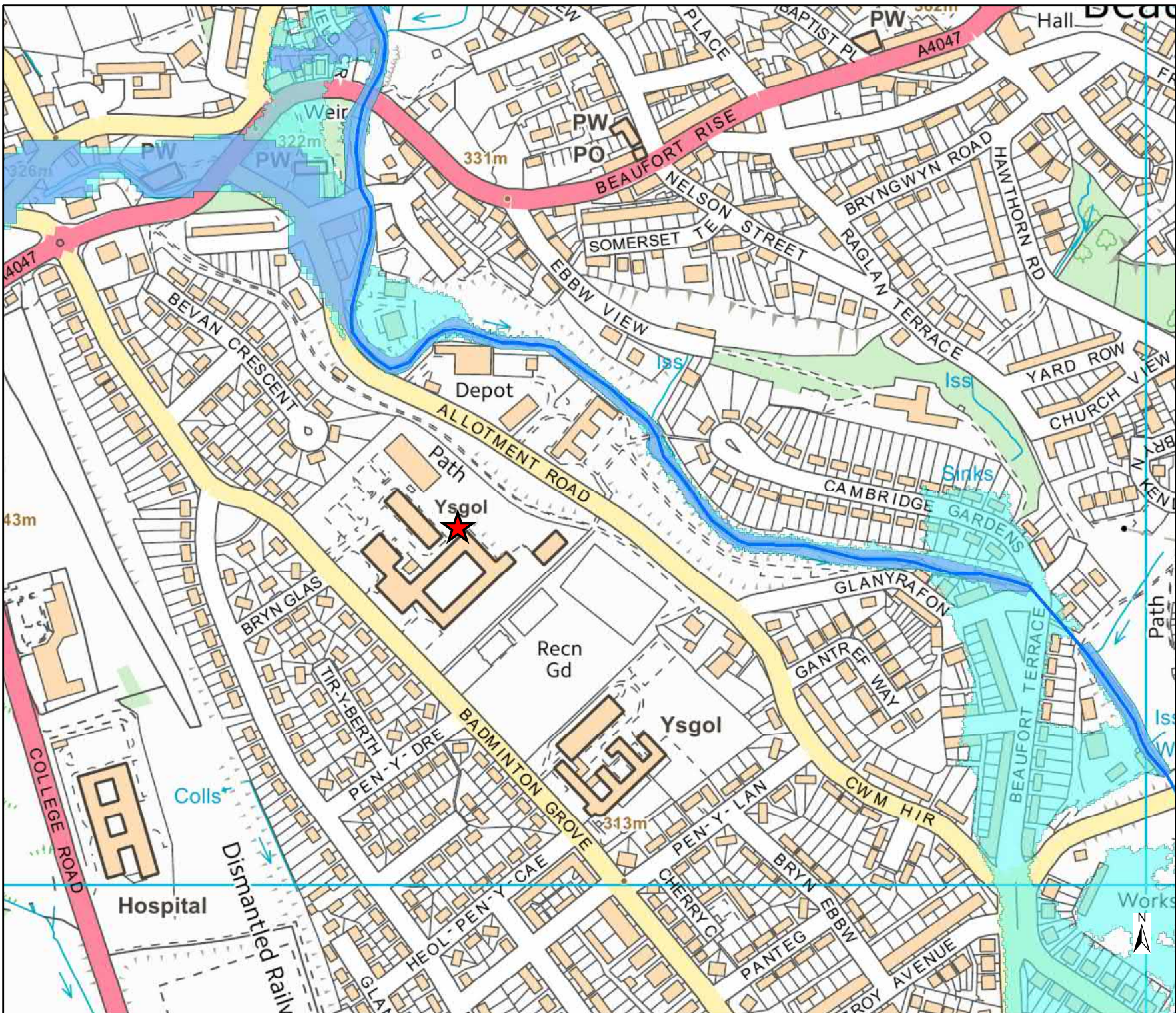
The scope of the model is the mapping of flood risk, it is not intended for detailed design. The model should be considered as the starting point for more detailed modelling, commensurate with the consequences of flooding at the site of interest.

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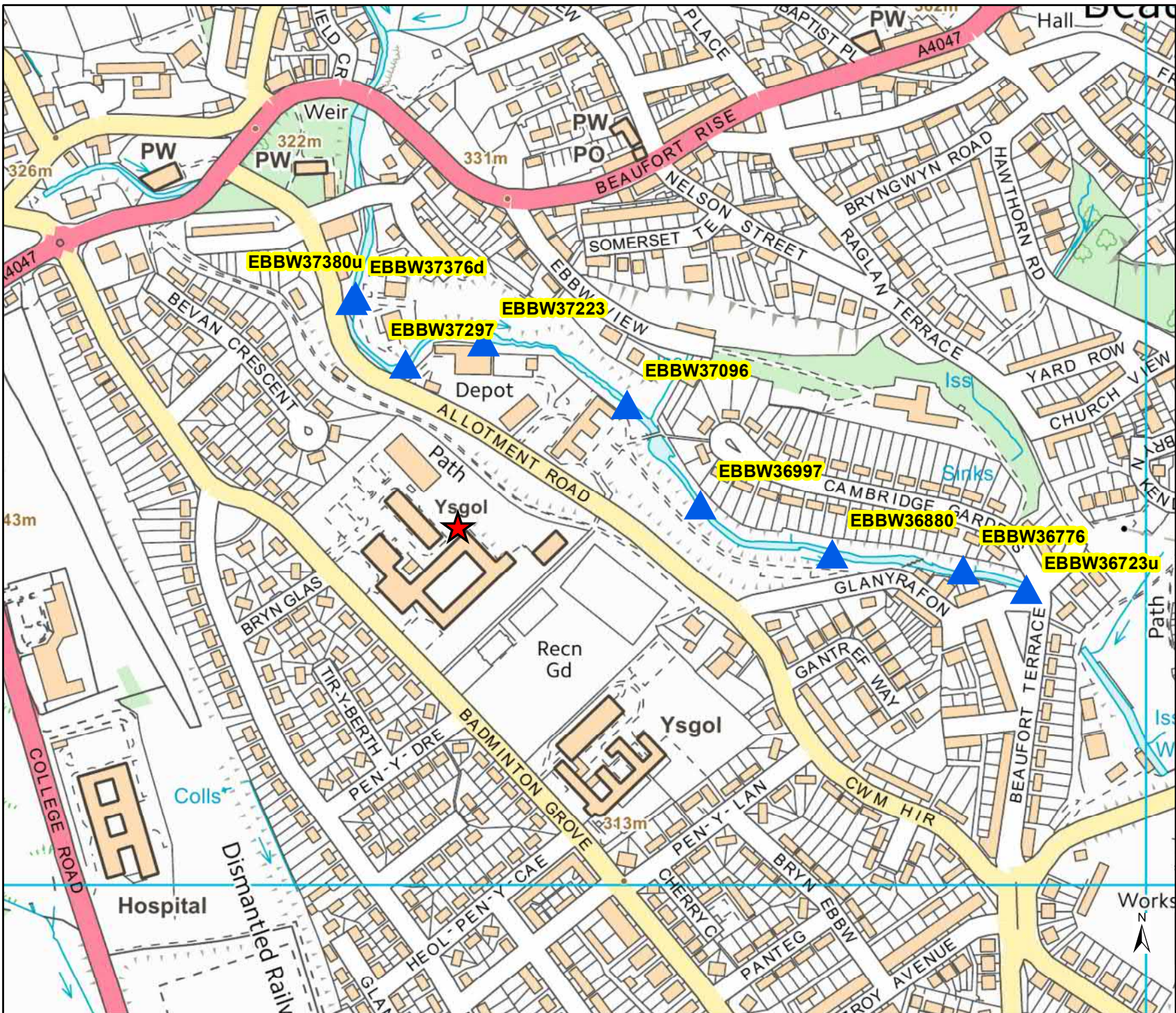
If the data is used in support of an FCA, please include the reference number.

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Flood Risk Analysis
29/04/2020



Legend	
	Site Location
	Flood Zone 3 (1 in 100 year undefended fluvial and 1 in 200 year undefended tidal extents)
	Flood Zone 2 (1 in 1000 year undefended fluvial and tidal extents)
	Areas benefiting from defences
	Defences
	Flood Storage Area
	Main Rivers
Project Flood Risk Enquiry, Glyncod, Blaenau Gwent [Ref: ATI-19258a]	
Drawing Figure 1: Current Floodmap [v202001]	
Date 29 Apr 2020	
Scale 1:4,000	



Legend

- ★ Site Location
- ▲ FMP Nodes

Cyfoeth Naturiol Cymru
Natural Resources Wales

Project
 Flood Risk Enquiry, Glyncod,
 Blaenau Gwent
 [Ref: ATI-19258a]

Drawing
 Figure 2:
 Cross Section locations

Date
 29 Apr 2020

Scale 1:4,000

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Appendix B Blaenau Gwent County Borough Council Consultation Response

Wilks-Daly, Aidan

From: Wayne.Jervis@blaenau-gwent.gov.uk
Sent: 01 April 2020 10:02
To: Wilks-Daly, Aidan
Subject: RE: Flood Risk Enquiry - Glyn Coed (Blaenau Gwent)

Aidan

For some reason I'm not getting any emails through my PC since early yesterday afternoon, However they seem to come through on my phone which is not ideal to reply on. So I have answered your latest question in reply to my previous email:

It is just an observation I have made during my years working in the area, that there seems to be a clay layer that is close to the surface between where Emlyn Avenue and Badminton Grove converge, down as far as at least Heol Pen-y-Cae. This seems to be only to the west of Allotment Road.

I recall having problems with the soft clay subgrade some years ago when I was tasked with constructing a car park at the rear of Glyncoed infants school.

Let me know if you require any further clarification.

Regards

W. Jervis,
Municipal Offices
Civic Centre
Ebbw Vale
NP23 6XB
Tel 01495 311556

Wilks-Daly, Aidan

From: Wilks-Daly, Aidan
Sent: 31 March 2020 15:21
To: 'Wayne.Jervis@blaenau-gwent.gov.uk'
Subject: RE: Flood Risk Enquiry - Glyn Coed (Blaenau Gwent)

Hi Wayne,

Thanks for getting back to me.

Regarding your comments about a high or perched water table, is this on the other side of the Ebbw River or across the whole area?

Best Regards,

Aidan

Aidan Wilks Daly Msc BSc (Hons) GradCIWEM

Graduate Hydrologist



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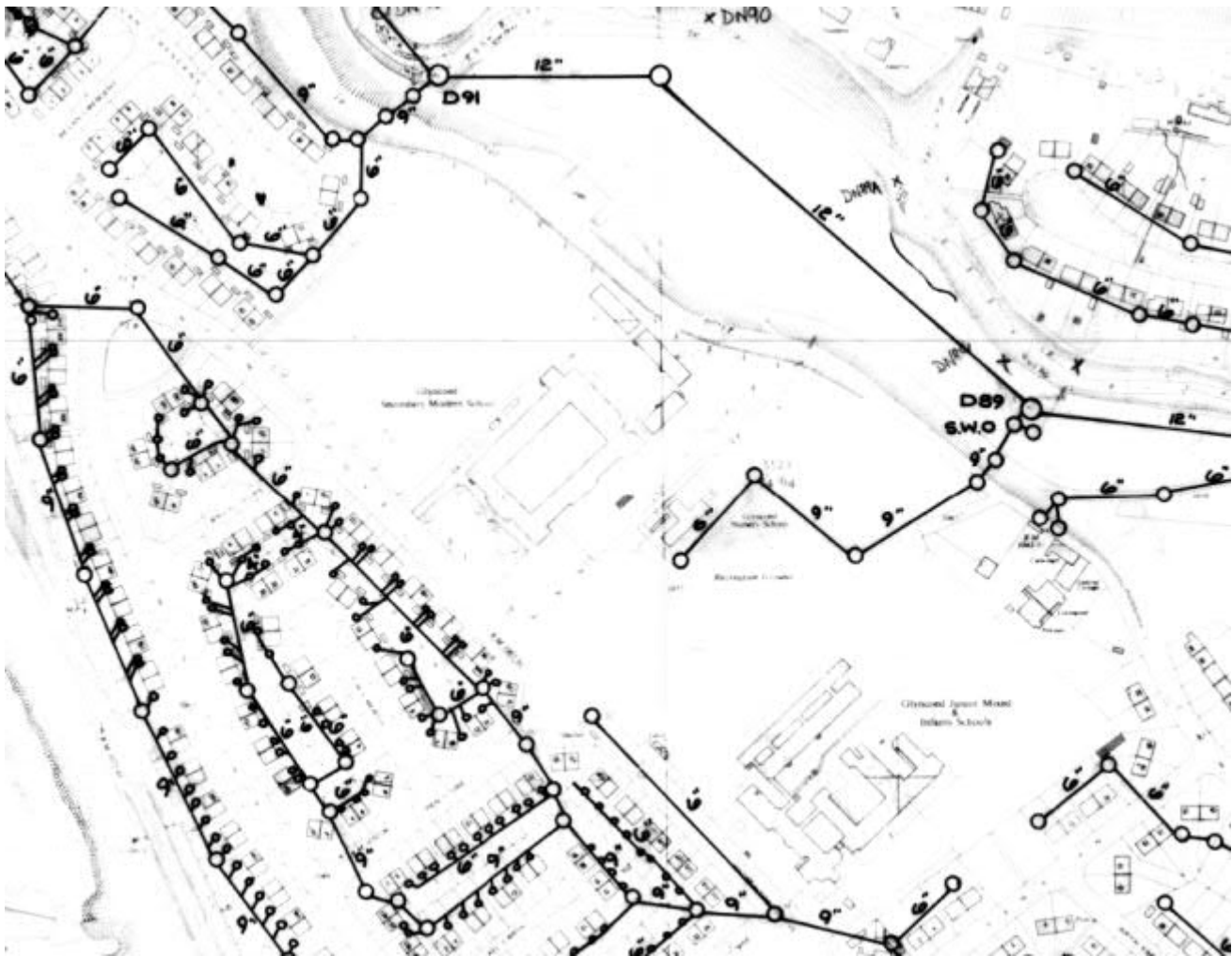
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From: Wayne.Jervis@blaenau-gwent.gov.uk <Wayne.Jervis@blaenau-gwent.gov.uk>
Sent: 31 March 2020 15:01
To: Wilks-Daly, Aidan <Aidan.Wilks-Daly@wsp.com>
Subject: RE: Flood Risk Enquiry - Glyn Coed (Blaenau Gwent)

Aidan
RE: Flood Risk Enquiry - Glyn Coed (Blaenau Gwent)

I am not aware of any flooding associated with this site, the only flooding I have knowledge of is in the nearby Cambridge Gardens, which is approximately 260m away and on ground which is approximately 15m lower. This was caused by a blocked culvert on the other side of the river Ebbw.
Please see the snippet from our drainage plan of the site below, I am sorry we do not yet have digitised plans of the area.
We do not have any specific policies with respect to risk that applies to this area in particular. Nor do we have any other specific flood defences.
I am aware that there is a high or perched water table to the west of the site. This sometimes becomes apparent with boggy gardens and issues with damp in some properties.

I hope this helps



Regards

W. Jervis,
Municipal Offices
Civic Centre
Ebbw Vale
NP23 6XB
Tel 01495 311556

From: Wilks-Daly, Aidan [<mailto:Aidan.Wilks-Daly@wsp.com>]
Sent: 24 March 2020 08:57
To: Wayne Jervis - Environment
Cc: Barker, Doug
Subject: Flood Risk Enquiry - Glyn Coed (Blaenau Gwent)

Hi Wayne,

I hope you are well.

We are reviewing the flood risk for another site in Blaenau Gwent, the Glyn Coed Primary School (see attached site location plan) and we wish to consult with you as the Lead Local Flood Authority (LLFA).

Allotment Road, Willowtown, Glyncoed, Blaenau Gwent, Wales, NP23 5NT (316453, 211282) – Flood Risk Enquiry

To support our flood risk investigation it would be helpful if you can provide us with a copy of the following information if it is available (we are also consulting with Natural Resource Wales and Welsh Water):

- The details of any historic flood incidents at the site or in the immediate vicinity of the site;
- The details of any flood defences or assets within the sites or within the immediate vicinity of the site;
- Any specific policies with respect to flood risk and drainage in the area; and
- Any other relevant information in relation to flood risk or drainage of the identified site.

We would welcome any additional comments you may have with respect to the site.

Kind regards,

Aidan

Aidan Wilks Daly Msc BSc (Hons) GradCIWEM

Graduate Hydrologist



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Appendix C Welsh Water Consultation Response

Wilks-Daly, Aidan

From: Searches <searches@dwrwymru.com>
Sent: 08 April 2020 14:44
To: Wilks-Daly, Aidan
Subject: FW: Request for records of sewer flooding - Glyncoed
Attachments: Location_Plan.png

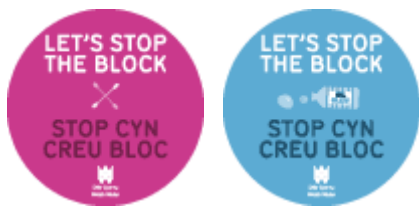
The flooding in July 2018 was within the NP23 5NA postcode, although not within the defined area in the attached plan – it also looks to be on a separate leg of the sewerage network, so I wouldn't expect it to be relevant.

Thanks,
Nick

Nick Holt

Data & Risk Manager
Wastewater Assets - Working together to achieve our Measures of Success

Tel: 01633 963041
Mob: 07827 829210



From

From: Wilks-Daly, Aidan <Aidan.Wilks-Daly@wsp.com>
Sent: 08 April 2020 10:51
To: Searches <searches@dwrwymru.com>
Subject: RE: Request for records of sewer flooding - Glyncoed

***** External Mail *****

Hi,

Thanks for confirming the records you hold for the area.

Just to check, was the sewer flooding that occurred in July 2018 within NP23 5NA or just the wider NP23 area? I want to establish if it affected the site that I am interested in, see the attached plan.

Kind Regards,

Aidan

Aidan Wilks Daly Msc BSc (Hons) GradCIWEM
Graduate Hydrologist



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From: Searches <searches@dwrcymru.com>
Sent: 08 April 2020 10:24
To: Wilks-Daly, Aidan <Aidan.Wilks-Daly@wsp.com>
Subject: FW: Request for records of sewer flooding - Glyncoed

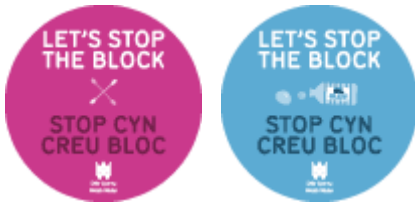
Hi – we maintain a 10-year dataset of all recorded flooding incidents for regulatory reporting purposes. There is only one record of sewer flooding within this postcode in the last ten years, which occurred in July 2018 – external flooding caused by a blockage of fat.

Thanks,
Nick

Nick Holt

Data & Risk Manager
Wastewater Assets - Working together to achieve our Measures of Success

Tel: 01633 963041
Mob: 07827 829210



From: Wilks-Daly, Aidan <Aidan.Wilks-Daly@wsp.com>
Sent: 08 April 2020 08:47
To: Searches <searches@dwrcymru.com>
Subject: RE: Request for records of sewer flooding - Glyncoed

***** External Mail *****

Hi Nick,

Thanks for confirming that you have no recorded risks of sewer flooding at this site and that there have been no reported flooding incidents within the postcode area in the last financial year.

Would it be possible to check reported flooding incidents that go back beyond the last financial year?

Kind Regards,

Aidan

Aidan Wilks Daly Msc BSc (Hons) GradCIWEM

Graduate Hydrologist



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From: Searches <searches@dwrcymru.com>
Sent: 07 April 2020 19:24
To: Wilks-Daly, Aidan <Aidan.Wilks-Daly@wsp.com>
Subject: FW: Request for records of sewer flooding - Glyncoed

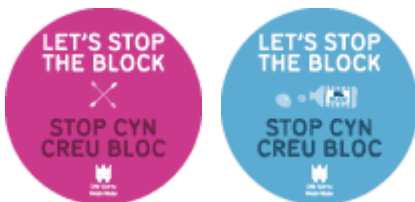
Hi I can confirm we have no recorded risks of sewer flooding at this location, and there have been no reported flooding incidents within the postcode in the last financial year.

Thanks,
Nick

Nick Holt

Data & Risk Manager
Wastewater Assets - Working together to achieve our Measures of Success

Tel: 01633 963041
Mob: 07827 829210



From: services developer <developer.services@dwrcymru.com>
Sent: 01 April 2020 15:15
To: Searches <searches@dwrcymru.com>
Subject: FW: Request for records of sewer flooding - Glyncoed

From: Wilks-Daly, Aidan <Aidan.Wilks-Daly@wsp.com>
Sent: 01 April 2020 15:06

To: services developer <developer.services@dwrcymru.com>
Subject: Request for records of sewer flooding - Glyncoed

***** External Mail *****

Dear Sir/Madam,

Badminton Grove, Willowtown, Glyncoed, Blaenau Gwent, Wales, NP23 5NA (316431, 211247)

We are reviewing the flood risk for the above site In Glyncoed (see attached site location plan) and wish to understand if there have been any historic incidents of sewer flooding in the area.

I have had a look at your developer services webpage (<https://www.dwrcymru.com/en/Developer-Services.aspx>) however we don't want to buy a copy of the asset plans for the area or connect to a sewer so I wasn't sure what the appropriate option was for requesting records of sewer flooding.

Please can you send us a copy of any records of sewer flooding you hold for the site and let us know if there is a charge for this service?

Kind Regards,

Aidan

Aidan Wilks Daly Msc BSc (Hons) GradCIWEM
Graduate Hydrologist



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Appendix D Site Plans and Drawings

AWAITING FINAL PLANS