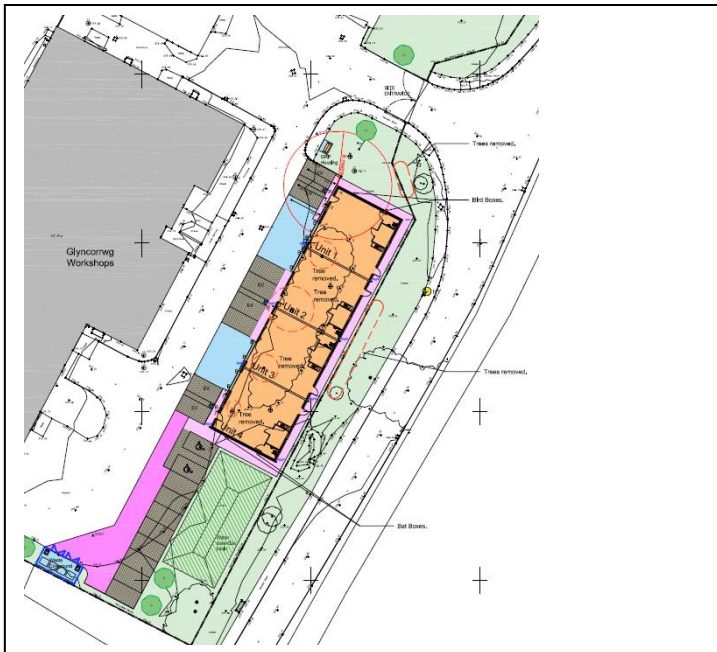


FLOOD CONSEQUENCES ASSESSMENT

Proposed Light Industrial Units at
Glyncorrwg, for Neath Port Talbot
County Borough Council.



Project Reference:

6807

Client:

Andrew Scott Construction Ltd

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1.0 INTRODUCTION

This assessment has been prepared on behalf of Andrew Scott Construction Ltd in relation to the proposal to construct a single light industrial unit with associated external works at Glyncorrwg on behalf of Neath Port Talbot County Borough Council.

1.1 OBJECTIVES OF THE ASSESSMENT

The prime objective of an assessment is to develop a full appreciation of:

- The consequences of flooding on the development.
- The consequences (i.e. the overall impacts) of the development on flood risk elsewhere within the catchment for a range of potential flooding.
- The assessment can be used to establish whether appropriate mitigation measures can be incorporated within the design of the development to ensure that development minimises risk to life, damage to property and disruption to people living and working on the site or elsewhere in the floodplain.

Whether a development should proceed or not will depend upon whether the consequences of flooding can be safely managed, in a manner compatible with the placemaking aims of PPW. The design should incorporate suitable avoidance and mitigations measures to ensure the development is safe and there is:

- Minimal risk to life.
- Minimal disruption to people living and working in the area.
- Minimal potential damage to property.
- Minimal impact of the proposed development on flood risk generally; and
- Minimal disruption to the sustainable management of natural resources.

A proposed development must provide a safe and secure living and / or working environment throughout its life. For each development, and under a range of extreme events from the threshold to that flood having a probability of occurrence of 0.1%, an assessment should include clear and simple descriptions of the following:

- The likely mechanisms of flooding.
- The likely sources of flooding.
- The depths of flooding throughout the site.
- The speed of inundation of the site.
- The rate of rise of floodwaters throughout the site.
- Velocities of floodwaters across the site.

- Overland flood routes.
- The effects on access and egress and infrastructure, for example public sewer outfalls, combined sewer overflows, surface water sewers and effluent discharge pipes from wastewater treatment works.
- The impacts of the development on natural heritage.
- The impact of the development in terms of flood risk on neighbouring properties and elsewhere on the flood plain.

1.2 SITE LOCATION

The site is located approximately 2.7 km north northeast of Cymmer, at National Grid reference SS 873985, see Fig 2.1 below which shows the site area edged in red. The site address is Glyncorrwg Workshops, Ynyscorrwg Road, Glyncorrwg, Port Talbot, SA13 3EA.

The site is bounded to the northwest by existing industrial units, to the northeast by the existing highway entrance and service yard, beyond which Glyncorrwg Rugby and Football Club is located, to the southeast by Ynyscorrwg Road and to the southwest by Glyncorrwg Ponds and Mountain Bike Centre. The Afon Corrwg is located approximately 115m northwest of the site and Glyncorrwg Ponds are located approximately 330 m to the southwest.

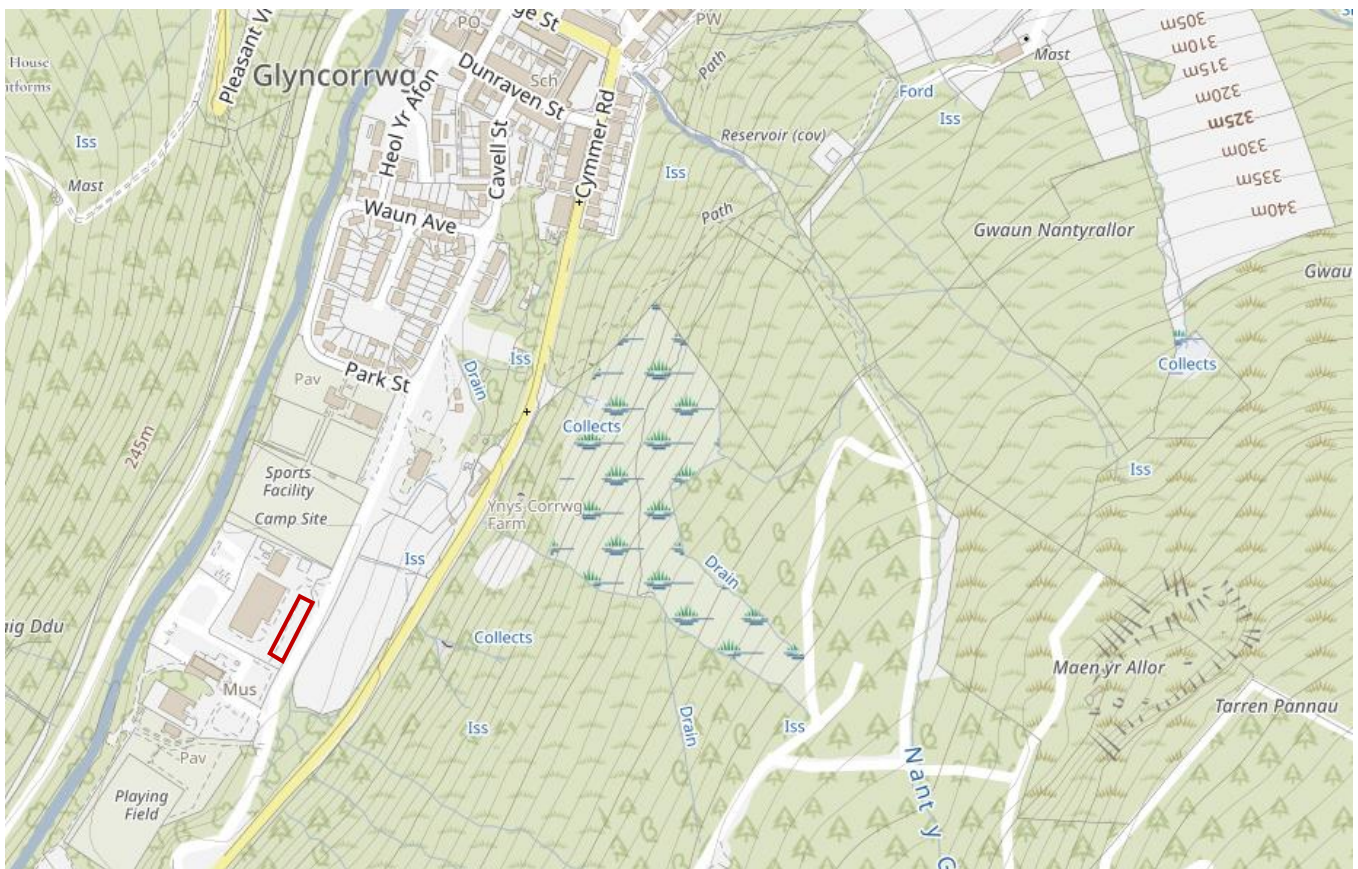


Figure 1.1 – Site Location Plan

1.3 SITE TOPOGRAPHY

The existing part of the site that the proposed development occupies generally falls in a southerly direction to match that of the existing highway adjacent which falls from 209.800 at the entrance to the site to 209.350 in the south-east corner of the site. The existing car park access fronting the existing building begins at a level of 209.500 and ends at 209.350 at the southern boundary of the site with a depression midway at a road gully pot of 209.000. Whilst site levels on the eastern boundary of the site generally remain flat between the new development's boundary and the existing highway, those on the western boundary, adjacent the Afon Corrwg, rise to 210.400 in the south-west corner of the site.

Initial review of the existing site levels / site wide constraints indicates the ground floor level of the unit will be 209.400m AOD.

1.4 PROPOSED DEVELOPMENT

The proposed development comprises the construction of a new single storey industrial unit which is divided into four individual units. The building will be complete with a total of 18 car parking spaces and vehicular access points to each unit's roller shutter door openings. The new building is shown below.



[Figure 1.2 - Proposed Site Plan](#)

Below is an extract of BHPL's external works drawings, outlining the proposed site layout, initial levels and external finishes. The optimum level for the new unit is 209.4000 to tie in with the existing depression and drainage within the car park area and the levels of the adjacent highway verge.

All ground levels fronting the units are flush with the ground floor slab to accommodate vehicular and disabled access to the units; levels fall away from the building, albeit with varying gradients, to tie in with the existing car park area and access road, whilst accommodating for the existing falls and drainage. Ground to the rear of the units are pitched at 150mm below ground floor level and blend in with existing grassland area that remains, albeit some minor regrading may be required in the north-east corner of the site.

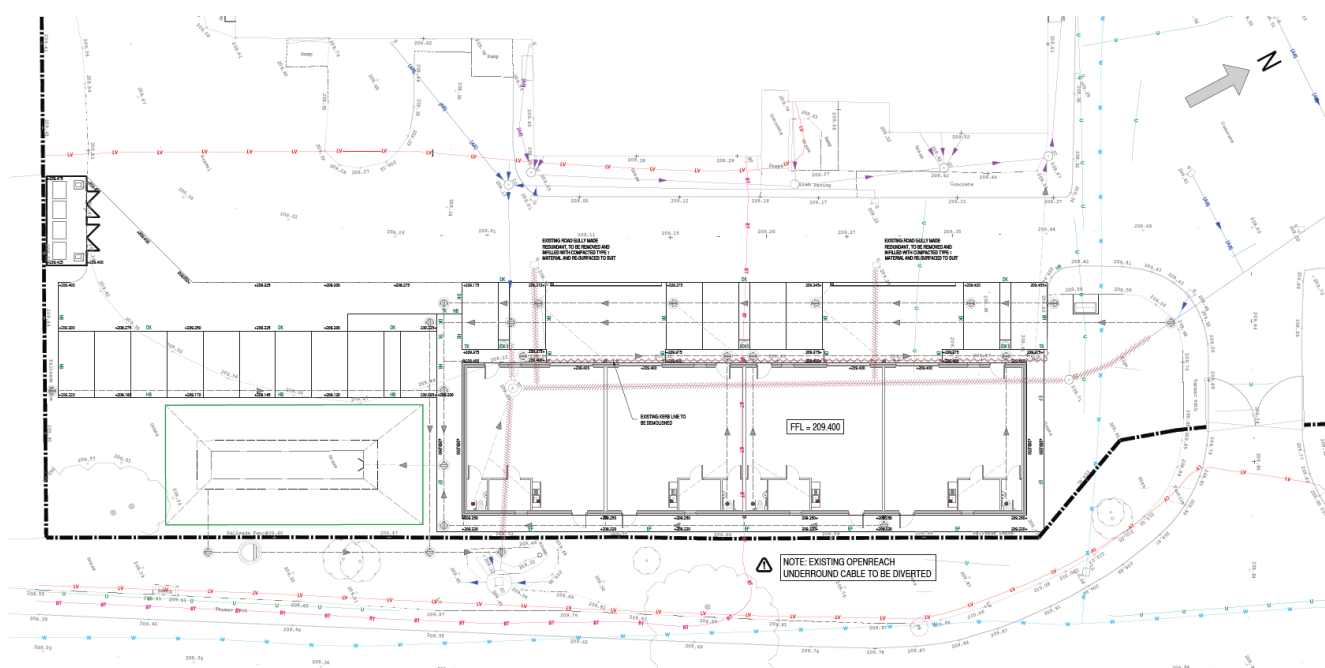


Figure 1.3 – Extract of BHPL's Works Layout; drawing reference: 6807-BHP-02-XX-DR-C-60201

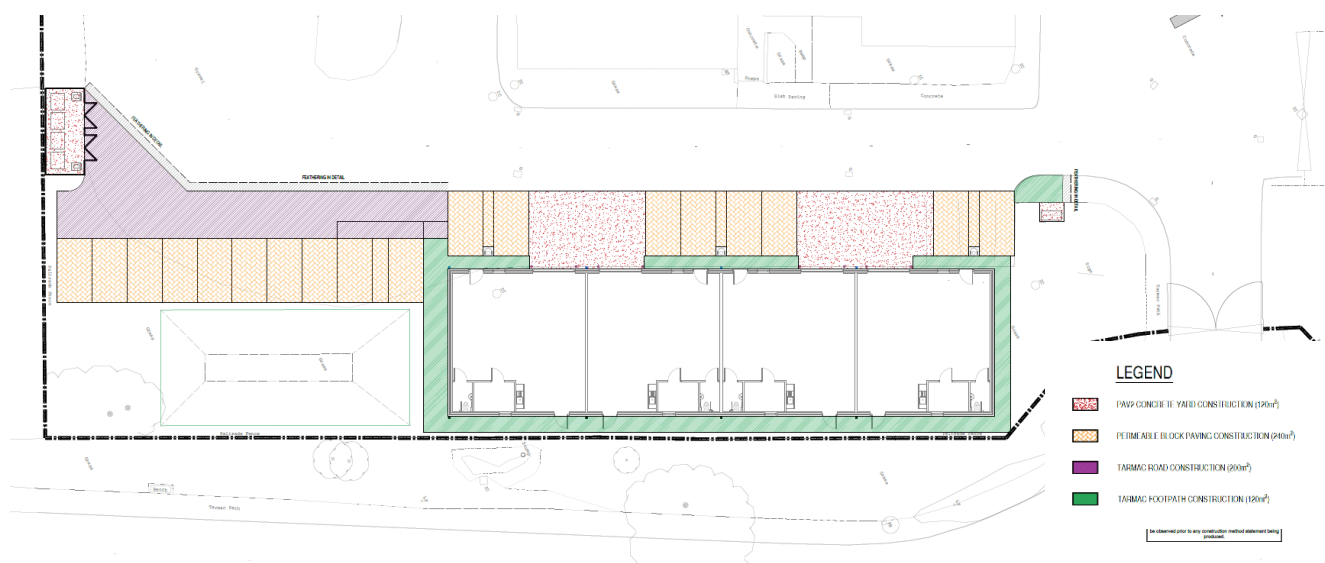


Figure 1.4 – Extract of BHPL's External Finishes Plan; drawing reference: 6807-BHP-02-XX-DR-C-60205

2.0 PLANNING POLICY WALES

TAN 15 was published by Welsh Government in July 2004 and advises on development and flood risk and provides a precautionary framework within which risks arising from both river and coastal flooding and from additional run-off from the development in any location can be assessed.

The overarching aim of TAN 15 is, in order of preference, to: Direct new development away from those area which are at high risk of flooding; where development has to be considered in high-risk areas only those developments can be justified based on the Justification Test and Acceptability of Flooding Consequences

The Development Advice Maps (DAM) are used within the precautionary framework and use NRW extreme flood outlines and British Geological Survey (BGS) drift data to distinguish the flood zones presented in [Table 2.1](#) below:

[*Table 2.1 - NRW's Flood Risk Zone Descriptions and use within planning considerations.*](#)

Zone	Description of Zone	Use within the precautionary framework
A	Considered to be at little or no risk of fluvial or tidal/coastal flooding	Used to indicate that justification test is not applicable and no need to consider flood risk further.
B	Areas known to have been flooded in the past evidenced by sedimentary deposits.	Used as part of a precautionary approach to indicate where site levels should be checked against the extreme (0.1%) flood level. If site levels are greater than the flood levels used to define adjacent extreme flood outline there is no need to consider flood risk further.
C	Based on Environment Agency extreme flood outline, equal to or greater than 0.1% (river or sea)	Used to indicate that flooding issues should be considered as an integral part of decision making by the application of the justification test including assessment of consequences.
C1	Areas of the floodplain which are developed and served by significant infrastructure, including flood defenses.	Used to indicate that development can take place subject to application of justification test, including acceptability of consequences.
<u>C2</u>	Areas of the floodplain without significant flood defense infrastructure	Used to indicate that only less vulnerable development should be considered subject to application of justification test, including acceptability of consequences. Emergency services and highly vulnerable development should not be considered.

The precautionary framework within TAN15 identifies the vulnerability of different land uses to flooding and groups them in to three different development categories as shown in [Table 2-2](#) below:

[Table 2.2 - Development Categories](#)

Development Category	Types
Emergency Services	Hospitals, ambulance stations, fire stations, police stations, coastguard stations, command centres, emergency depots and buildings used to provide emergency shelter in time of flood.
Highly vulnerable development	All residential premises (including hotels and caravan parks), public buildings (e.g., schools, libraries, leisure centres), especially vulnerable industrial development (e.g., power stations, chemical plants, incinerators), and waste disposal sites
Less vulnerable development	<u>General industrial</u> , employment, commercial and retail development, transport and utilities infrastructure, car parks, mineral extraction sites and associated processing facilities, excluding waste disposal sites.

Note: Less vulnerable development is development where the ability of occupants to decide if risks and consequences are acceptable is greater than that in the highly vulnerable category.

2.1 JUSTIFICATION REQUIREMENTS

TAN 15 aims to direct development away from Zone C and towards Zone A, otherwise to Zone B. Where development is proposed in a flood risk area facing risk from rivers and the sea (Zone C), the planning authority will need to be satisfied that its location is justified. It is important that areas in Zone C are used only as a last resort, and not at all for new highly vulnerable development. Development in Zone C will only be justified if it can be demonstrated that:

- I. Its location in Zone C is necessary to assist, or be part of, a local authority regeneration initiative or a local authority strategy required to sustain an existing settlement; or
- II. Its location in Zone C is necessary to contribute to key employment objectives supported by the local authority, and other key partners, to sustain an existing settlement or region.

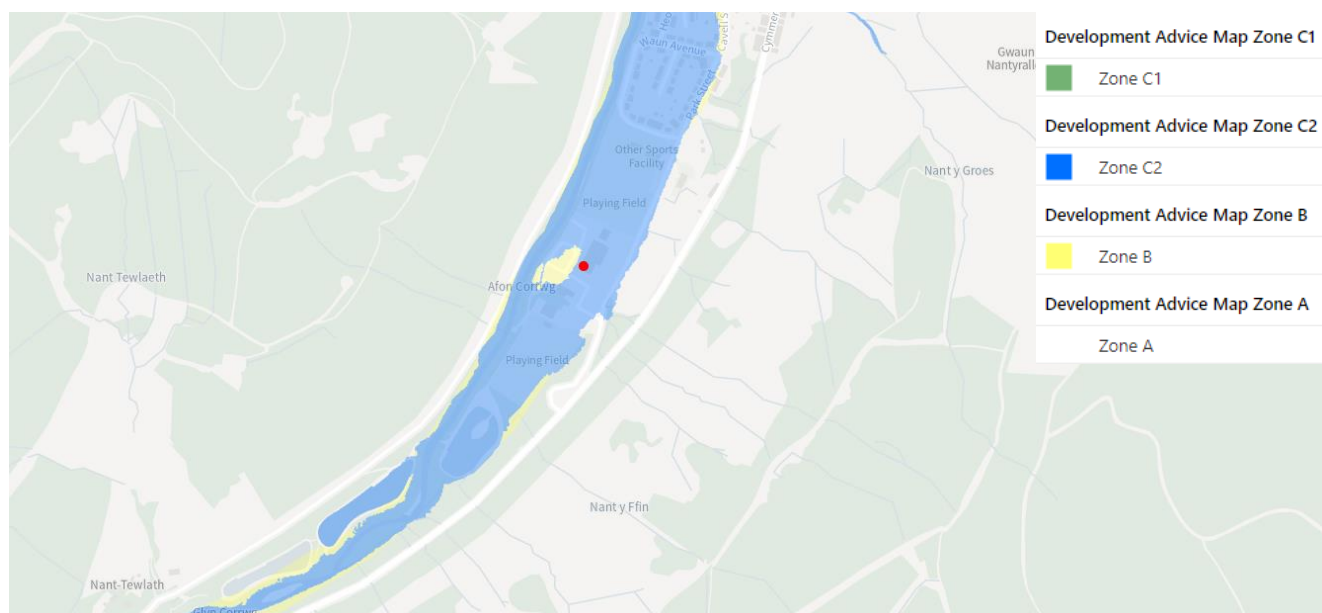
and

- III. It concurs with the aims of Planning Policy Wales (PPW) and meets the definition of previously developed land (PPW fig 2.1); and,
- IV. The potential consequence of a flooding event for the particular type of development have been considered and the relevant acceptability criteria can be met.

If the planning authority is satisfied that a development proposed in a flood risk area has met the tests outlined above, the justification will be in the knowledge that those developments may experience flooding and will need to be planned accordingly. A full understanding of the potential risks and consequences will be required to inform the planning authority in its decision making and to demonstrate that the justification test has been satisfied.

3.0 JUSTIFICATION OF THE DEVELOPMENT

BHPL has consulted the website of Natural Resources Wales and reviewed the Development Advice Map, see [Figure 3.1](#) below. The site lies within the extent of **Zone C2**, an area of the floodplain without significant flood defence infrastructure and is used by planning authorities to indicate that only less vulnerable development should be considered subject to application of justification test, including acceptability of consequences.



[Figure 3.1 - Extract of NRW's Development Advice Map](#)

TAN15 advises against new developments within Zone C; however, this refers to new developments only and does not directly reference the use of previously developed land, simply recognising that a great deal of urban development in Wales has taken place alongside rivers and in the coastal plain and it's therefore inevitable, despite the overall aim to avoid flood risk areas, that some existing development areas will be vulnerable to flooding and fall within Zone C.

The proposed development complies with Planning Policy Wales (PPW's) definition for 'previously developed land' (also known as brownfield), that is the development will reuse, in part, the existing access road serving the existing workshops, plus a portion of existing hardstanding area for use fronting the new unit and the surrounding infrastructure.

The proposed development is Industrial, defined within TAN15 as a 'Less Vulnerable' development, see [Table 2.2](#) above, and utilises a brownfield site. Therefore, the site, although located within a flood risk zone complies with TAN15's development category and justification requirements.

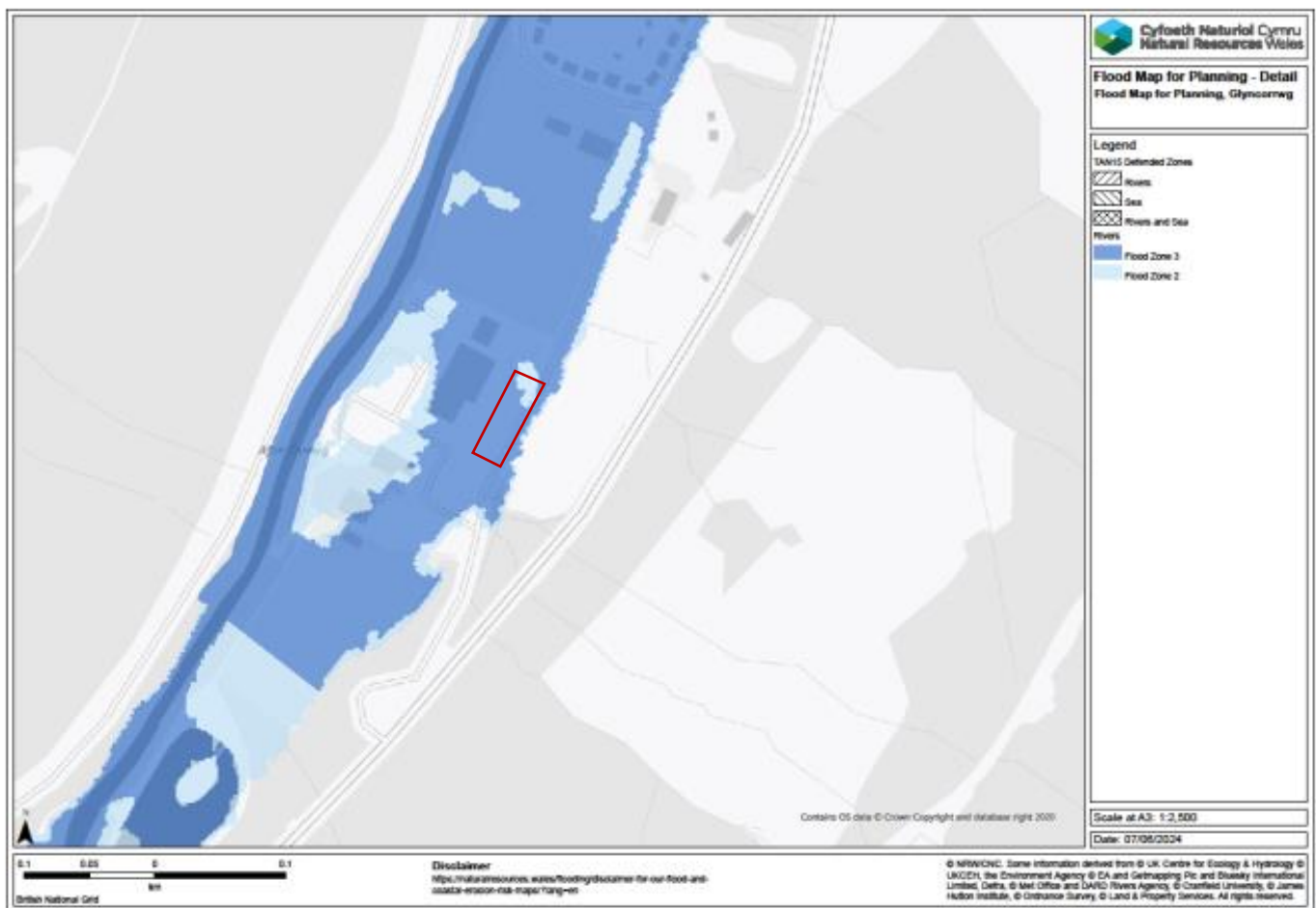
4.0 SITE SPECIFIC FLOOD RISKS

4.1 FLOOD RISK FROM RIVERS

River flooding happens when a river cannot cope with the amount of water draining into it from the surrounding land. [Figure 4.1](#) below shows the risk of flooding from rivers, albeit doesn't consider any flood defences that may be in place for the area. The extent of flood risk is categorized by the following zones:

- Flood Zone 3: Areas with more than 1% (1 in 100) chance of flooding from rivers in a given year, including the effects of climate change.
- Flood Zone 2: Areas with 0.1% to 1% (1 in 1000 to 1 in 100) chance of flooding from rivers in a given year, including the effects of climate change.

The closest watercourse is the Afon Corrwg, situated approximately 120m west of the development and runs from north to south. NRW's flood modelling for rivers indicates the site has a greater than 1% chance of flooding each year; see [Figure 4.1](#) below. The flooding is a direct result of the flat topography within the area due to the commercial and housing developments within the local vicinity. The flat topography is emphasised by the surrounding steep topography both east and west of the development area.



[Figure 4.1 – NRW's Flood Map for Planning indicating risk from Rivers](#)

As the site falls within Flood Zone 3, additional flood maps have been obtained from NRW. These include predicted flood depths, flood level & flood velocities for the 1:100 +30% CC even; see below for details of the mapping received.

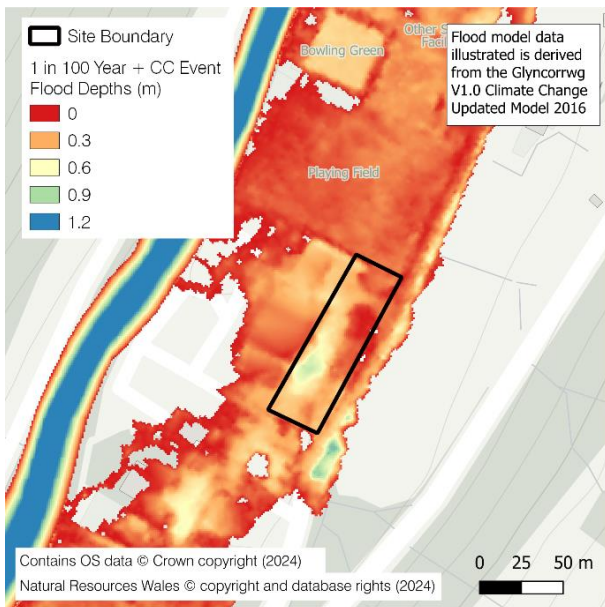


Figure 4.2 - NRW's Flood Depths

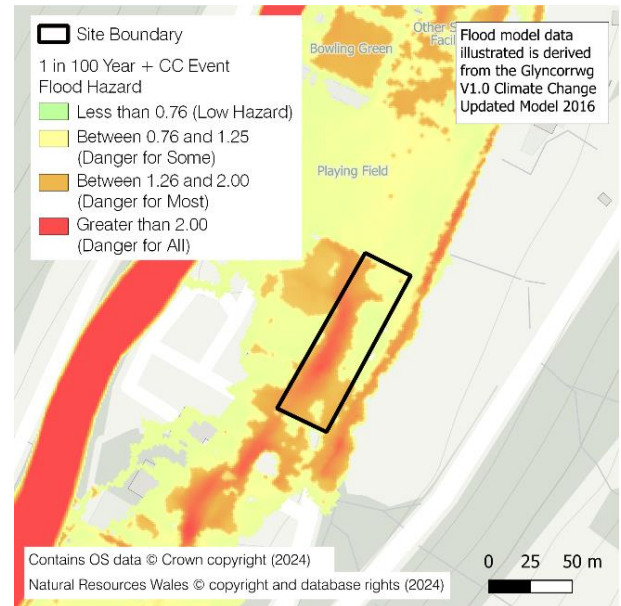


Figure 4.3 – NRW's Flood Hazard Level

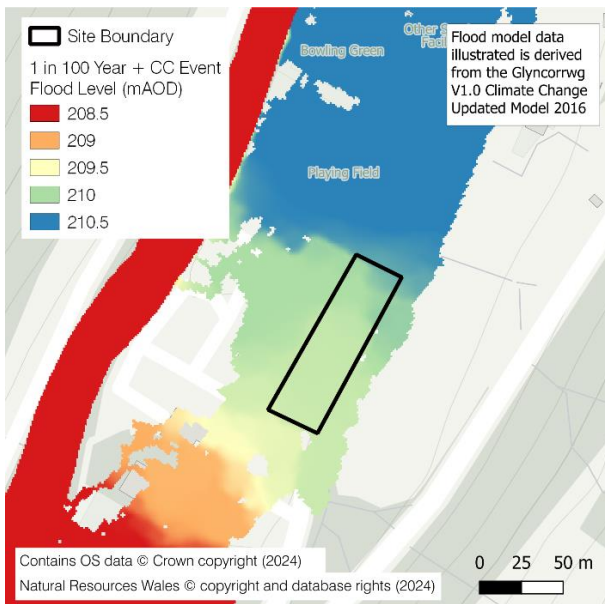


Figure 4.4 – NRW's Flood Levels

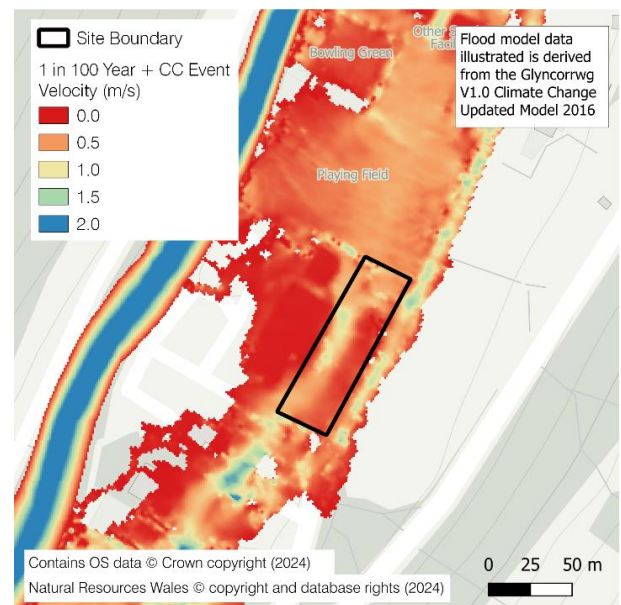


Figure 4.5 - NRW's Flood Velocity

Summary of findings is given below for each:

- Flood Depth – The greatest flood depth occurs where the depression in the existing car park access road occurs, discussed in Section 1.3 above. The depression in the access road is approximately 450mm lower than that of the north and south boundaries and as would be expected, the further from the depression, the lower the flood depths, plateauing between a depth of 0.30m and 0.60m at the location of the proposed building.
- Flood Hazard – As above the flood hazard level is greater in the location of the depression within the existing access road, indicated as being greater than 2.00 and is lower in the south-eastern and north-eastern corners of the site at between 0.76 – 2.00.

Regarding the Flood Hazard Levels, these are categorised into differing levels of risk:

An area less than 0.76 is defined as having a low degree of flood risk.

An area between 0.76-1.25 is defined as having a moderate degree of flood risk.

An area between 1.26-2.00 is defined as having a high degree of flood risk.

An area greater than 2.00 is defined as having a significant flood risk.

- Flood Level – Typically, flood levels across the development area are 210.000m AOD.
- Flood Velocity – The flood velocity is greater through the centre of the site, through the existing car park towards the depression previously discussed, at approximately 1.5 m/s whilst velocities outside this area are minimal.

4.2 FLOOD RISK FROM SURFACE WATER AND SMALL WATERCOURSES

Overland flow routes can form from rainfall that fails to infiltrate the surface and travels over ground; this is exacerbated where the permeability of the ground is low due to the type of soil/ geology (such as clayey soils) or urban development. Surface water is also promoted in areas of steep topography which can rapidly convey water that has failed to penetrate the surface. [Figure 4.6](#) below shows NRW's surface water and small watercourses flood risk map layer.

- Flood Zone 3: Areas with more than 1% (1 in 100) chance of flooding from surface water and/or small watercourses in a given year, including the effects of climate change.
- Flood Zone 2: Areas with 0.1% to 1% (1 in 1000 to 1 in 100) chance of flooding from surface water and/or small watercourses in a given year, including the effects of climate change.

With reference to [Figure 4.6](#) below, the car parking area fronting the existing "MPN Windows" building and therefore, part of the development area is at risk of surface water flooding. Following a review of the topographical survey for the site, the road fronting the existing building has low spots with an elevation of 209.00m whilst the access road that runs around the rear of the building has an elevation of 210.00m. Additionally, the main highway to the east of the proposed site ranges from 210.00m to 209.50m for the length of the development area.

This depression fronting the existing the building is the cause of the surface water flood risk indicated on NRW's flood risk map. The area shown to be at risk is currently served by two road gullies, which, as part of this development will be removed and replaced with permeable surfacing and new drainage channels; the more widespread drainage mechanism will offer a betterment to the existing localised drainage spots.



Figure 4.6 – NRW's Flood Map for Planning indicating risk from Surface Water and Small Watercourses

4.3 FLOOD RISK FROM SEA

The site lies approximately 16.0km from the coastline; therefore, as anticipated, NRW's flood risk map for flooding from the sea, indicates no risk of flooding.

4.4 FLOOD RISK FROM GROUNDWATER

Ground water flooding occurs where groundwater levels rise above ground surface levels. The geology has a major influence on where this type of flooding takes place; it is most likely to occur in low lying areas underlain by impermeable rocks.

The site investigation works indicate two perched water tables may be present within the Made Ground (at around 1 m and 4 m depth) and a lower water table within the Brithdir Member at around 6.50m. Therefore, during periods of heavy rainfall, there is potential for the ground to become saturated and the water table to rise to ground level; in this instance overland flows may occur, albeit, depths will be minimal due to the widespread nature of the flooding, affecting much of the area local to the Afon Corrwg.

4.5 FLOOD RISK FROM LOCAL SEWERS

Flooding can occur as a result of infrastructure failure e.g., blocked sewers or failed pumping stations. Sewer flooding can occur when the system surcharge due to the volume or intensity of rainfall exceeding the capacity of the sewer, or if the system becomes blocked by debris or sediment. With reference to Figure 4.7 below, the adopted sewer plan provided by DC/WW indicates that the site is free from any large public sewers, the closest public sewer being the foul sewer to the west of the development and existing building, and it is presumed to serve the housing development to the north and existing Community Enterprise Development Centre, plus development to the south.

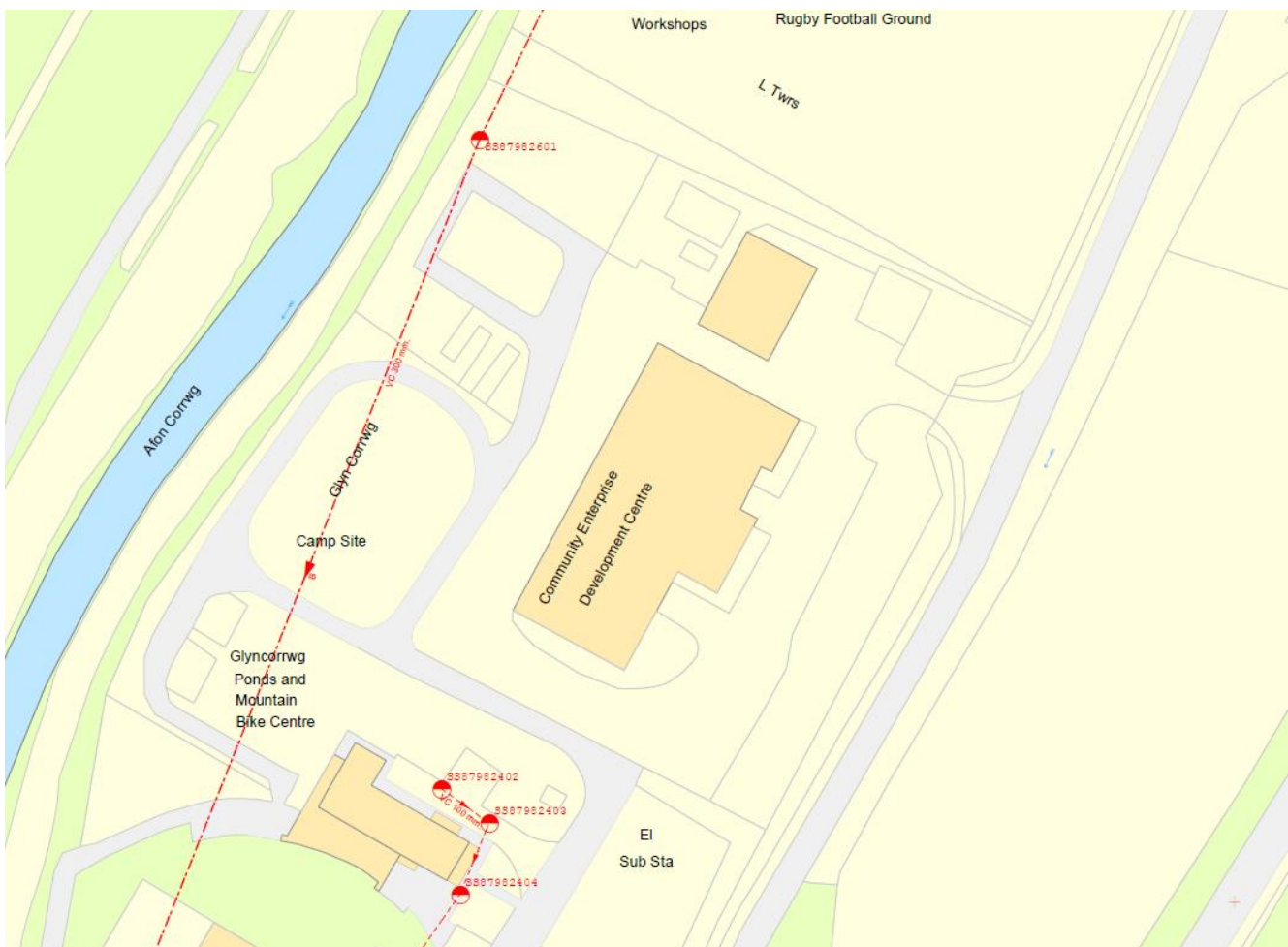
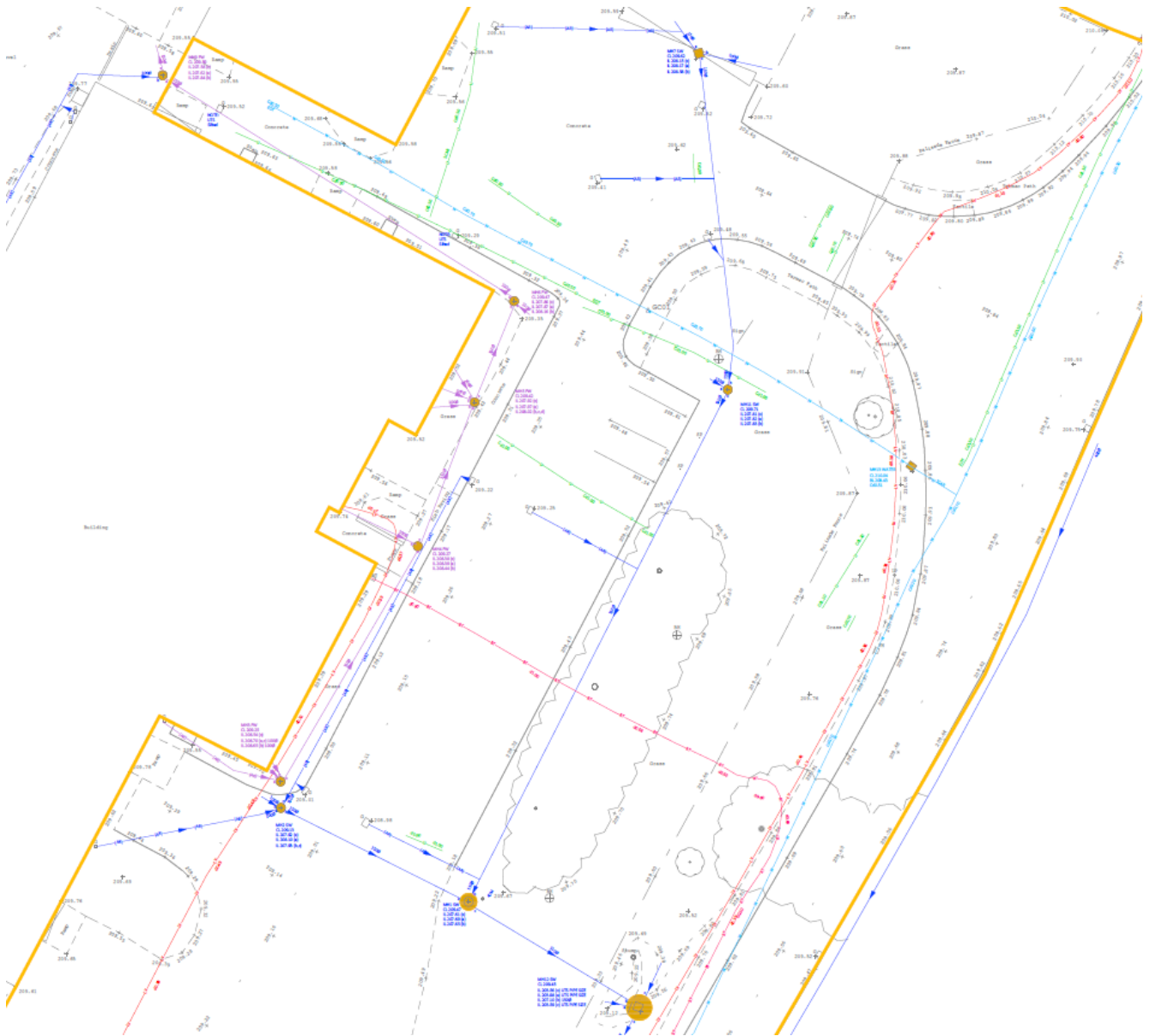


Figure 4.7 - Extract of DCWW's Adopted Sewer Plan

In addition to the public sewer records, Landmark Wales Surveys have undertaken a survey of the existing services local to the site; an extract of which can be seen in [Figure 4.8](#) below. The survey information shows that the existing building is served by both private foul and surface water networks. The surface water network comprises of two sewer lines, one crossing the existing entrance to the site and the hardstanding opposite the front of the building, whilst the other network serves the building itself and the car park area to the south-west. The surface water sewers converge in the southeast corner of the site before being discharged off site.



[Figure 4.8 - Extract of Landmark Surveys Wales's Utility Survey Drawing; referenced 6965](#)

Given the local sewers are under one ownership (NPTCBC) they are considered to be easily manageable with risks of blockages being minimal. Chambers are well positioned across the site facilitating regular inspections and maintenance when required.

5.0 ACCEPTABILITY CRITERIA

Any new development on the flood plain will generally result in additional risks. The main criteria for deciding whether such a development is acceptable will depend on whether those factors can be effectively managed. The Environment Agency will advise the planning authority on the consequences of flooding for the type and nature of proposal and this should enable the planning authority to arrive at a judgement on the acceptability of the flooding consequences.

To satisfy these criteria a site should only be considered for development if the following conditions can be satisfied;

1. Flood defences must be shown by the developer to be structurally adequate particularly under extreme overtopping conditions:

There are no flood defences serving the development / existing site.

2. The cost of future maintenance for all new/approved flood mitigation measures, including defences must be accepted by the developer and agreed with the Environment Agency.

There are no flood defences serving the development / existing site.

3. The developer must ensure that future occupiers of development are aware of the flooding risks and consequences

Flood emergency plans and procedures will be produced by the client Neath Port Talbot County Borough Council and will be provided to the occupants of the units.

4. Effective flood warnings are provided at the site.

Flood warnings for the area are available through environmental agency NRW.

5. Escape/evacuation routes are shown by the developer to be operational under all conditions:

The access and evacuation routes will remain as is for the existing site. Access to the new building is via the existing main entrance off. Evacuation via the existing routes would be feasible and would lead pedestrians onto the existing highway, which lies outside of any flood risk zone.

6. Flood emergency plans and procedures produced by the developer must be in place:

As criteria 3 above.

7. The development is designed by the developer to allow the occupier the facility for rapid movement of goods / possessions to areas away from the floodwaters:

Minimal flood levels are anticipated; however, each of the industrial units has vehicular access with roller shutter doors into the unit which could therefore be used in the event of goods having to be moved.

8. Development is designed to minimise structural damage during a flooding event and is flood proofed to enable it to be returned to its prime use quickly in the aftermath of the flood.

To mitigate the flood risks resulting from the proposal, flood resilient measures will be incorporated in the design which will include, but not limited to, the features outlined in the table below:

Pipework	Closed cell insulation should be used for pipes which are below the predicted flood level.
Drainage Services	Non-return valves are recommended in the drainage system to prevent back-flow of diluted sewage in situations where there is an identified risk of the foul sewer surcharging. Maintenance of these valves is important to ensure their continued effectiveness.
Water / Electricity / Gas Meters	All should be located a minimum 600mm above ground floor level
Electrical Services	Electrical sockets should be installed above flood level for ground floors to minimise damage to electrical services and allow speedy re-occupation
Heating Services	Boiler units and ancillary devices should be installed above predicted flood level. Underfloor heating should be avoided. Controls such as thermostats should be placed above flood level. Conventional heating systems, e.g. hot water pipes are unlikely to be significantly affected by flood water unless it contains a high salt content
Communications / Wiring	Wiring for telephone, TV, internet, and other services should be protected by suitable insulation in the distribution ducts to prevent damage. Any proposed design solution for flood insulation on all potentially vulnerable wiring should be discussed with the relevant service providers.
Doors	Raising the threshold as high as possible, while complying with level access requirements, should be considered as the primary measure.
Air Vents (If required)	Special designs of air vent are available in the market to prevent water ingress in circumstances where the predicted flood depth is low (i.e. < 0.3m). Careful consideration should be given to effectively sealing any associated joints

9. No flooding elsewhere

Levels across the site have been maintained whilst a betterment on the existing drainage has been made. Flooding post development will remain the same as the pre-development.

In addition to the above general conditions there are particular flooding consequences which may not be considered acceptable for particular types of development. Environment Agency advice to planning authorities suggests that development should be designed to be flood free during the 1% fluvial flood and the 0.5% tidal / coastal flood. There is therefore a frequency threshold of flooding below which flooding of development should not be allowed. The following table, which should not be regarded as prescriptive, provides indicative guidance as to what that frequency threshold could be for different types of development described in terms of annual probability of occurrence.

Type of Development	Threshold Frequency (Years)	Assessed Level	Compliance
Fluvial	1.0%	Minor flooding	Subject to technical assessment
Tidal	0.5%	No flooding	Ok

Beyond the threshold frequency proposed development would be expected to flood under extreme conditions. However even with adequate mitigation measures in place it may still not be sensible to allow particular development to take place. The following table, which should not be regarded as prescriptive provides indicative guidance on what is considered tolerable conditions for different types of developments:

Table 6.1 - Acceptability Criteria for Industrial Development

Criteria	TAN15 Requirement	Assessed Level	Compliance
Maximum Flood Depth	1000 mm	300mm	Ok
Rate of rise of flood	0.30 m/hr	Levels are generally lower than 0.30m	
Speed of inundation	2.0 hours	-	Ok
Flood Velocity	0.45 m/s	<0.5 m/s	Considered acceptable for reasons given.

6.0 TECHNICAL REQUIREMENTS FOR ASSESSING FLOODING CONSEQUENCES

The information outlined in the following sub sections has been collated based upon the requirements of Section A1.17 of Appendix 1, TAN15 – Development and Flood Risk.

“Technical requirement for assessing flooding consequences: The detail and technical complexity of an assessment will reflect the scale and potential significance of the development. The Environment Agency should be consulted about and will advise on the level of assessment required as part of allocating a site and putting forward a development proposal. As a minimum, assessments should include 1, 2, 6, 9, 12, 13, 16, 17.”

6.1 SOURCES OF FLOODING (A1.17.1)

Sources of flooding have been considered in Section 4.0 of this report following a review of NRW’s online flood risk maps for planning. The maps indicate the site lies within Flood Zone 3, an area with a greater than 1% (1 in 100) chance of flooding from rivers in a given year.

6.2 EXISTING & PROPOSED LEVELS (A1.17.2)

The nature of the proposed development utilises the existing access road and adjacent infrastructure whilst being bounded to the east by the existing highway. Consequently, the new development has had to tie into the existing levels of the car park area whilst the building itself has taken an average of the existing site levels to provide a level platform whilst maintaining suitable gradients to the existing car park area as well as the highway levels to the east. Therefore, the proposed development will not alter significantly the existing levels found across the site, therefore maintaining the existing flood pattern.

6.3 FLOOD ALLEVIATION (A1.17.3)

There are no existing flood alleviation / defence measures on or near the site.

6.4 ACCESS AND EVACUATION ROUTES (A1.17.4)

The access and evacuation routes will remain as is for the existing site. Access to the new building is via the existing main entrance off. Evacuation via the existing routes would be feasible and would lead pedestrians onto the existing highway, and to the south or land to the east, which lie outside of any flood risk zone.

6.5 SOURCES OF FLOODING (A1.17.5)

In line with TAN15, the following sources of flooding have been considered in Section 4.0 of this report: fluvial; tidal; rain and small watercourses; as well as groundwater and local sewers. The principal source of flooding affecting the catchment is the potential fluvial flooding which is considered to be low risk.

The area has historically been developed and there are no records or evidence of any land drainage serving the area, the risk of flooding from groundwater is considered unlikely.

Table 5-1. Sources of Flooding

Flood Source	Presence / Risk	Notes
Rivers	> 1.0% each year	
Sea	0.0 %	No risk of flooding
Rain & small watercourses	Not anticipated	No evidence of previous flooding
Reservoirs	0.0 %	Area falls outside zone
Groundwater	0.0 %	No evidence of previous flooding
Sewers	Not anticipated	No evidence of previous flooding

6.6 FLOOD DEPTH PREDICTIONS (A1.17.6 & 8)

NRW's hydraulic modelling for the 1:100 plus 30% climate change has been extracted for the site and surrounding area; see [Section 4.1](#).

6.7 STRUCTURES INFLUENCING LOCAL HYDRAULICS (A1.17.7)

There are no influencing structures crossing the Afon Corrwg within the local vicinity.

6.8 SITE CROSS SECTIONS (A1.17.9)

Site cross sections can be made available if deemed necessary by the planning authority. The site is relatively flat with no significant topographical features.

6.9 RATE OF FLOOD (A1.17.10)

With reference to [Figure 4.5](#), the flood velocities for the site and the surrounding area are approximately 0.5m/s; whilst it can be seen as high as 1.5 m/s in some areas where the gradients are steeper, namely the highway to the north and the existing car park fronting the proposed units. Given the flood velocities and widespread flooding for the area, rate of flood is considered to be low.

6.10 DRAINAGE ASSESSMENT (A1.17.11)

The site is served by existing drainage infrastructure, located within the existing sites compound, and it is intended to reuse the existing drainage network for the discharge of both foul and surface water arising from the building. The new flows entering the system will be restricted and will be collected by various SuDS features upstream; additionally, the new drainage infrastructure will accommodate some of the existing hardstanding areas, therefore offering a betterment on the existing site.

6.11 VOLUMETRIC DISPLACEMENT AND RUNOFF ASSESSMENT (A1.17.12 & 13)

The development reuses existing hardstanding areas and surrounding brownfield areas consequently, there is no impact on the volumetric displacement should flooding ever occur.

7.0 CONCLUSIONS

The Development Advice Map shows that the site lies within Flood Zone C2, an area of the floodplain without significant flood defence infrastructure. The site is at a risk greater than 1.0% each year for flooding to occur as a result of overtopping of the Afon Corrwg. Other sources of flooding were generally considered low to negligible risk without any proposed mitigation measures.

The site is classified as being 'previously developed land' and in line with Planning Policy Wales guidance, the development aims to make the best use of an existing land whilst not exacerbating flood risks elsewhere.

Flooding of the property itself is deemed acceptable at a depth of 300mm in the extreme event.

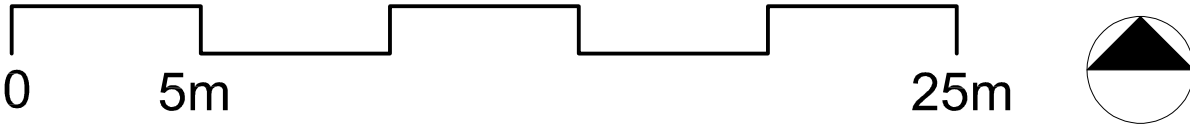
The site meets the justification and acceptability criteria for the type of development under consideration outlined in TAN 15 planning policy, subject to mitigation measures and the inclusion of flood resilient design.

APPENDIX A

- EPT Partnership – Proposed Site Plan Glyncorrwg (ISU-EPT-XX-XX-DR-A—62 01-P02)
 - NRW Flood Map for Planning – Rivers Map
 - NRW Flood Map for Planning – SW & Small Watercourse Map
- BHPL Drawing – Proposed External Finishes (6807-BHP-02-00-DR-C-(60) 205-P02)
- BHPL Drawing – Proposed External Layout (6807-BHP-02-01-DR-C-(60) 201-P02)
- BHPL Drawing – Proposed Drainage Layout (6807-BHP-02-XX-DR-C-(50) 301-P03)
- Cambium Landscape Architects – Glyncorrwg Soft Landscaping Proposals (ISU-CAM-XX-XX-DR-L-0602-P02)
 - Landmark Survey Wales – Glyncorrwg Utility Survey
 - Dwr Cymru Sewers Records Map



PARKING NOTES:
18 New Car Park Spaces inclusive of 2 No. accessible spaces.
Inclusive of 6 No. EV spaces.



ALL DIMENSIONS TO BE CHECKED ON SITE.
DO NOT SCALE THIS DRAWING.
ALL DISCREPANCIES TO BE REPORTED IMMEDIATELY.
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CONSULTANTS AND CONTRACTORS FOR INFORMATION ONLY
TO USE AT THEIR OWN RISK.

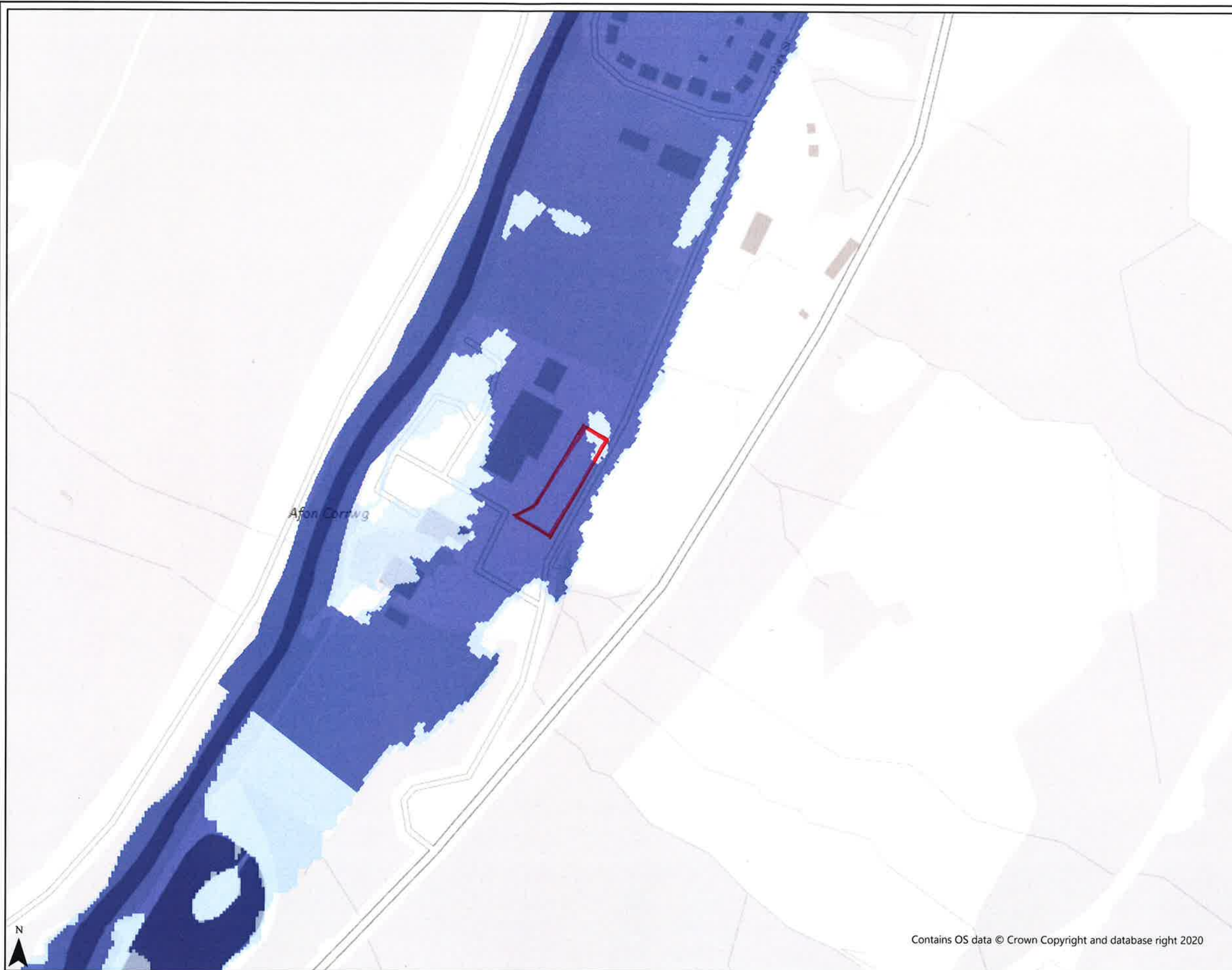
- GENERAL NOTES**
- For site M&E services refer to M&E drgs
 - For site drainage refer to Civils drgs
 - For site setting out & levels refer to Civils drgs
 - For hard landscaping details refer to Civils drgs
 - For soft landscaping details refer to landscape drgs

- ACCESS NOTES**
- All slopes along footpaths no steeper than 1:21
 - Level access provided at personnel/fire door and vehicle access door locations.

- H&S NOTES**
-  Site Hazards Identified:
1. Site adjacent occupied workshop site. Careful management of deliveries to works area and site works boundary to be fenced off securely at all times to prevent unauthorised access.
 2. Multiple below ground drainage and services including power within and around the proposed works site. Refer to underground utilities survey for below ground services locations.

- KEY**
-  Proposed site works area
 -  Existing buildings
 -  Proposed New buildings
 -  Proposed impermeable tarmac footpath. Refer to Civils drgs for details
 -  Proposed impermeable tarmac carpark. Refer to Civils drgs for details
 -  Proposed permeable block paving. Refer to Civils drgs for details
 -  Proposed concrete. Refer to Civils drgs for details.
 -  Existing/ proposed soft landscaping. Refer to landscape drgs
 -  Proposed planting. Refer to landscape drgs
 -  Proposed water retention features indicatively shown. Refer to specialist drawings for details
 -  New trees indicatively shown. Refer to landscape drgs
 -  Existing Palisade fence and gates to be retained
 -  1930mm high Eco weldmesh fencing and gates. Galv. steel powder coated. Colour: Black TBC by Client
 -  New square anti-climb PPC aluminium rainwater pipes shown indicatively
 -  Existing Fire Hydrants
 -  Vehicle Bollards
 -  Pod point electrical vehicle charging
 -  Indicates 8 metre distance from building for fire separation of waste storage.

P02	RIBA Stage 3 Issue	29/05/24	MT
P01	Initial Issue	23/05/24	MT
No.	Revision Description	Date	By
EPT PARTNERSHIP CHARTERED ARCHITECTS			
Client: Andrew Scott Ltd			
Project: NPT New Industrial Units			
Drawing Title: Proposed Site Plan Glyncorrwg			
Status: Work in progress			
Scale : 1:200		Original sheet size : A1	
Project	Originator	Functional Breakdown	Spatial Breakdown
ISU - EPT -	XX -	XX -	DR - A - 6201 - P02
EPT Internal project ref: 11298	Drawn by: MT	Checked by: MT	Exported from model: Autocad native file



Flood Map for Planning - Detail
Flood Map for Planning, Glynccorrwg

Legend

TAN15 Defended Zones

 Rivers

 Sea

 Rivers and Sea

Rivers

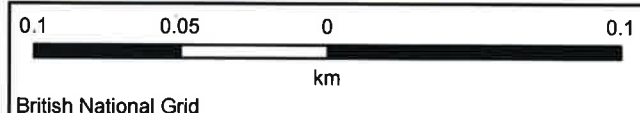
 Flood Zone 3

 Flood Zone 2

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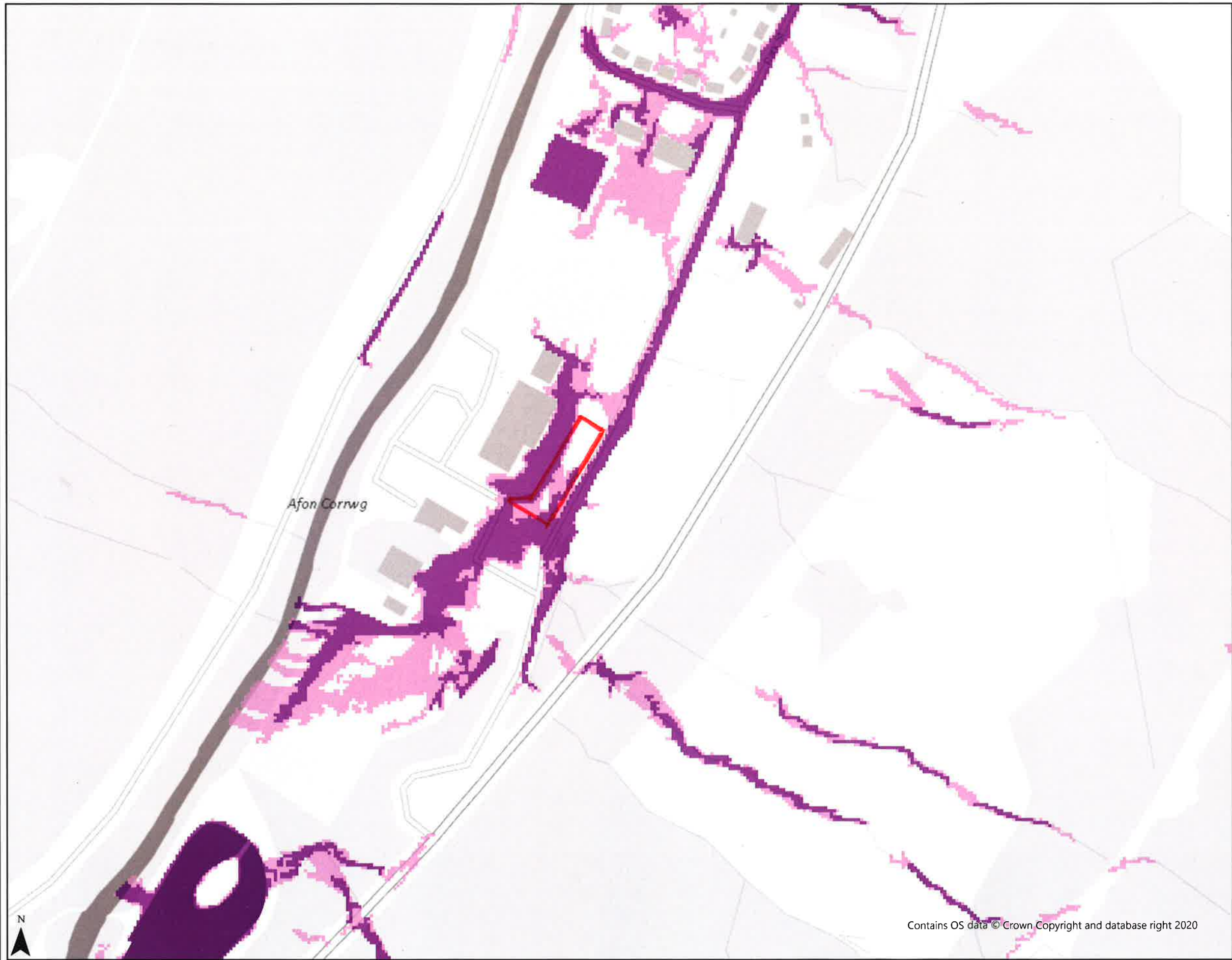
Scale at A3: 1:2,500

Date: 07/06/2024



Disclaimer
<https://naturalresources.wales/flooding/disclaimer-for-our-flood-and-coastal-erosion-risk-maps/?lang=en>

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Flood Map for Planning - Detail
SW & Small Watercourses, Glyncorrwg

Legend

TAN15 Defended Zones

 Rivers

 Sea

 Rivers and Sea

Surface Water and Small Watercourses

 Flood Zone 3

 Flood Zone 2

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Scale at A3: 1:2,500

Date: 07/06/2024

0.1 0.05 0 0.1
km

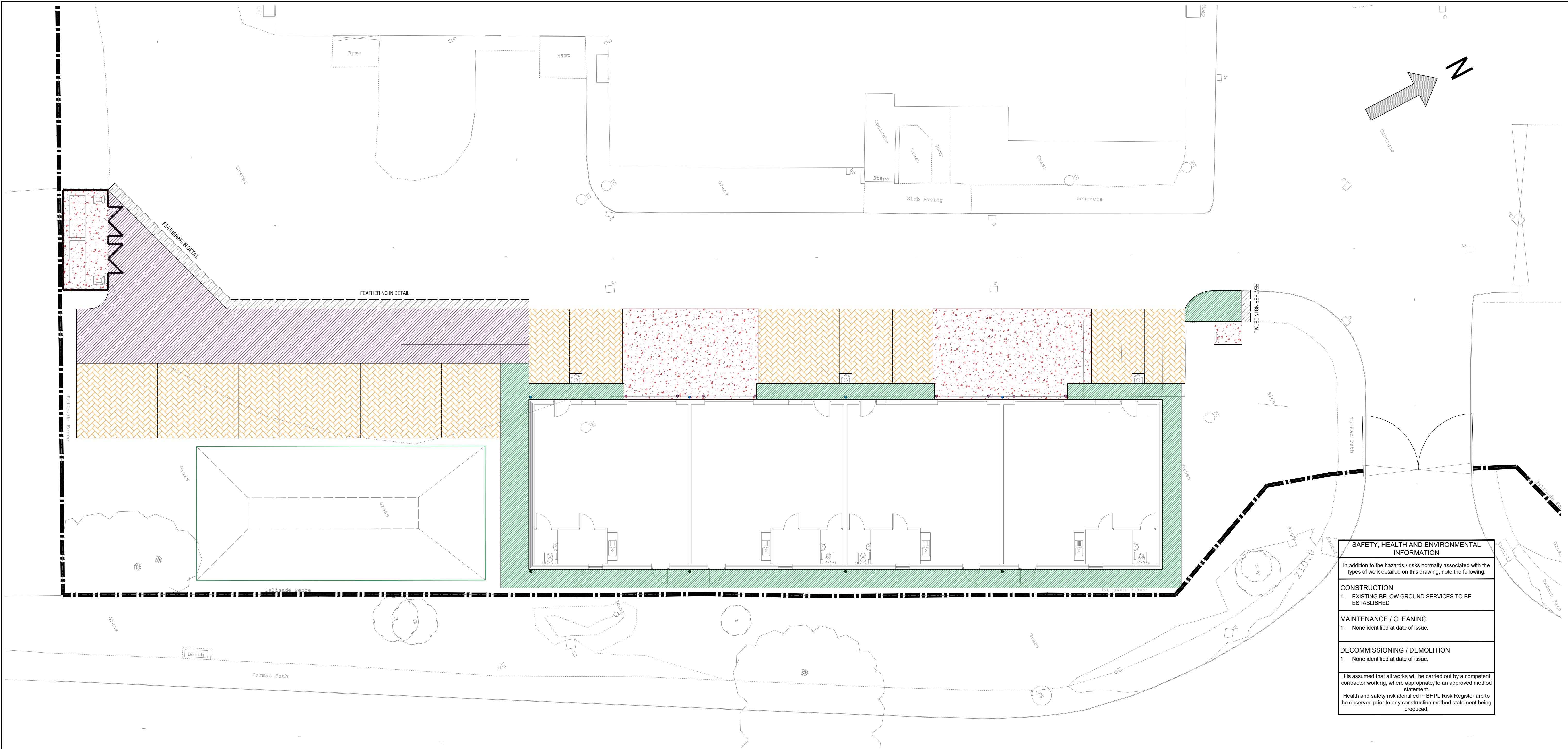
British National Grid

Disclaimer

<https://naturalresources.wales/flooding/disclaimer-for-our-flood-and-coastal-erosion-risk-maps/?lang=en>

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SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION			
In addition to the hazards / risks normally associated with the types of work detailed on this drawing, note the following:			
CONSTRUCTION			
1. EXISTING BELOW GROUND SERVICES TO BE ESTABLISHED			
MAINTENANCE / CLEANING			
1. None identified at date of issue.			
DECOMMISSIONING / DEMOLITION			
1. None identified at date of issue.			
It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement. Health and safety risk identified in BHP/L Risk Register are to be observed prior to any construction method statement being produced.			

80mm CONCRETE BLOCK PERMEABLE PAVING UNITS PROVIDED BY INTERPAVE MEMBER, BLOCK JOINTS FILLED WITH CRUSHED FINE GRAVEL SPECIFIC TO PRODUCT. COLOUR AND FINISH TO ARCHITECTS SPECIFICATION.

50mm LAYING COURSE MATERIAL COMPRISING MATERIAL GRADED IN ACCORDANCE WITH TABLE 11 OF DOCUMENT TITLED 'DESIGN & CONSTRUCTION OF CONCRETE BLOCK PERMEABLE PAVEMENTS' EDITION 7 (DECEMBER 2018).

SUITABLE PERMEABLE GEOTEXTILE TO SECTION 11.9 OF DOCUMENT TITLED 'DESIGN & CONSTRUCTION OF CONCRETE BLOCK PERMEABLE PAVEMENTS' EDITION 7 (DECEMBER 2018).
300mm LAYER OF COURSE GRADED AGGREGATE TYPE 420 TO TABLES 12 & 13 OF DOCUMENT TITLED 'DESIGN & CONSTRUCTION OF CONCRETE BLOCK PERMEABLE PAVEMENTS' EDITION 7 (DECEMBER 2018). MATERIAL TO BE LAID IN A MINIMUM OF TWO 150mm LAYERS IN STRICT ACCORDANCE WITH SECTION 13.5 OF DOCUMENT TITLED 'DESIGN & CONSTRUCTION OF CONCRETE BLOCK PERMEABLE PAVEMENTS' EDITION 7 (DECEMBER 2018).

IMPERMEABLE MEMBRANE DENOTED BY RED DASHED LINE TO RESTRICT INGRESS OF SHALLOW GROUND WATER TABLE

PERMEABLE PAVING CONSTRUCTION

SCALE 1:20

40mm (AC 10 CLOSE SURF 100/150 PSV60 BS EN13108-1). MIXTURES OF AGGREGATES ARE NOT TO BE USED. TO BE LAID BY MACHINE.

60mm (AC 20 DENSE BIN 100/150 BS EN13108-1) TO BE LAID BY MACHINE.

90mm AC 30 DENSE BASE BIN 100/150. TO BE LAID BY MACHINE.

150mm GRANULAR SUB-BASE TYPE 1 MATERIAL (CLAUSE 803), COMPACTED IN ACCORDANCE WITH CLAUSE 802.

300mm GRANULAR TYPE 1 SUB-BASE (SHW CL 803), COMPACTED IN ACCORDANCE WITH CLAUSE 802. SEE NOTE 7.

SUB-GRADE TO BE PROOF ROLLED, ANY SOFT SPOTS TO BE REMOVED AND REPLACED WITH 75 DOWN-EVENLY GRADED AND WELL-COMPACTED IMPORTED HARD CORE, LAID IN LAYERS NOT EXCEEDING 150mm.

TARMAC ROAD CONSTRUCTION

SCALE 1:20

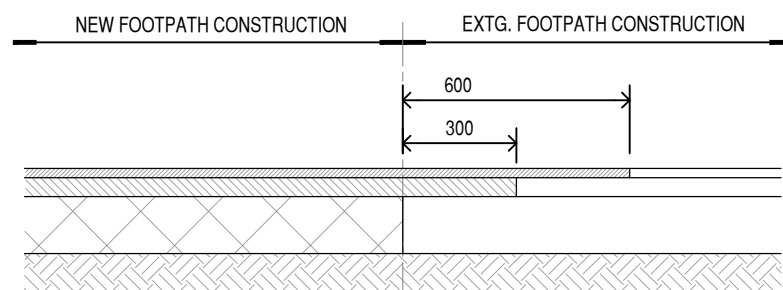
25mm (AC DENSE SURF 160/220 BS EN13108-1).

50mm (AC 20 DENSE BIN 100/150 BS EN13108-1) TO BE LAID BY MACHINE.

150mm GRANULAR SUB-BASE TYPE 1 MATERIAL (CLAUSE 803).

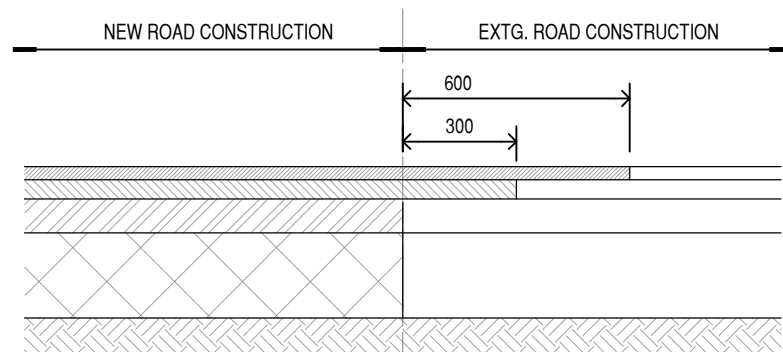
TARMAC FOOTPATH CONSTRUCTION

SCALE 1:20



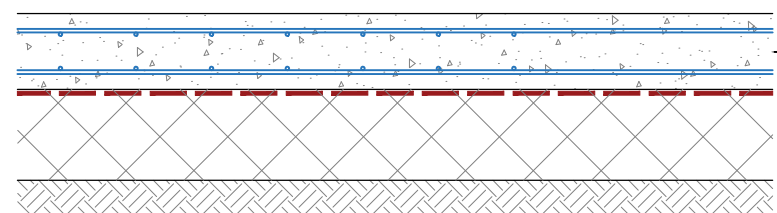
FOOTPATH FEATHERING DETAIL

SCALE 1:20



ROAD FEATHERING IN DETAIL

SCALE 1:20



CONCRETE YARD CONSTRUCTION DETAIL

SCALE 1:20

LEGEND

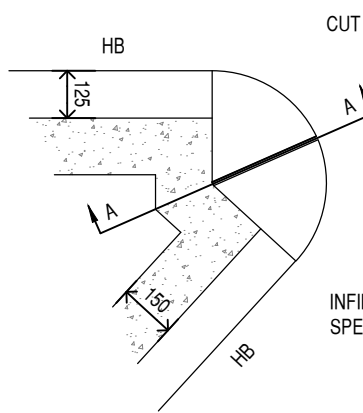
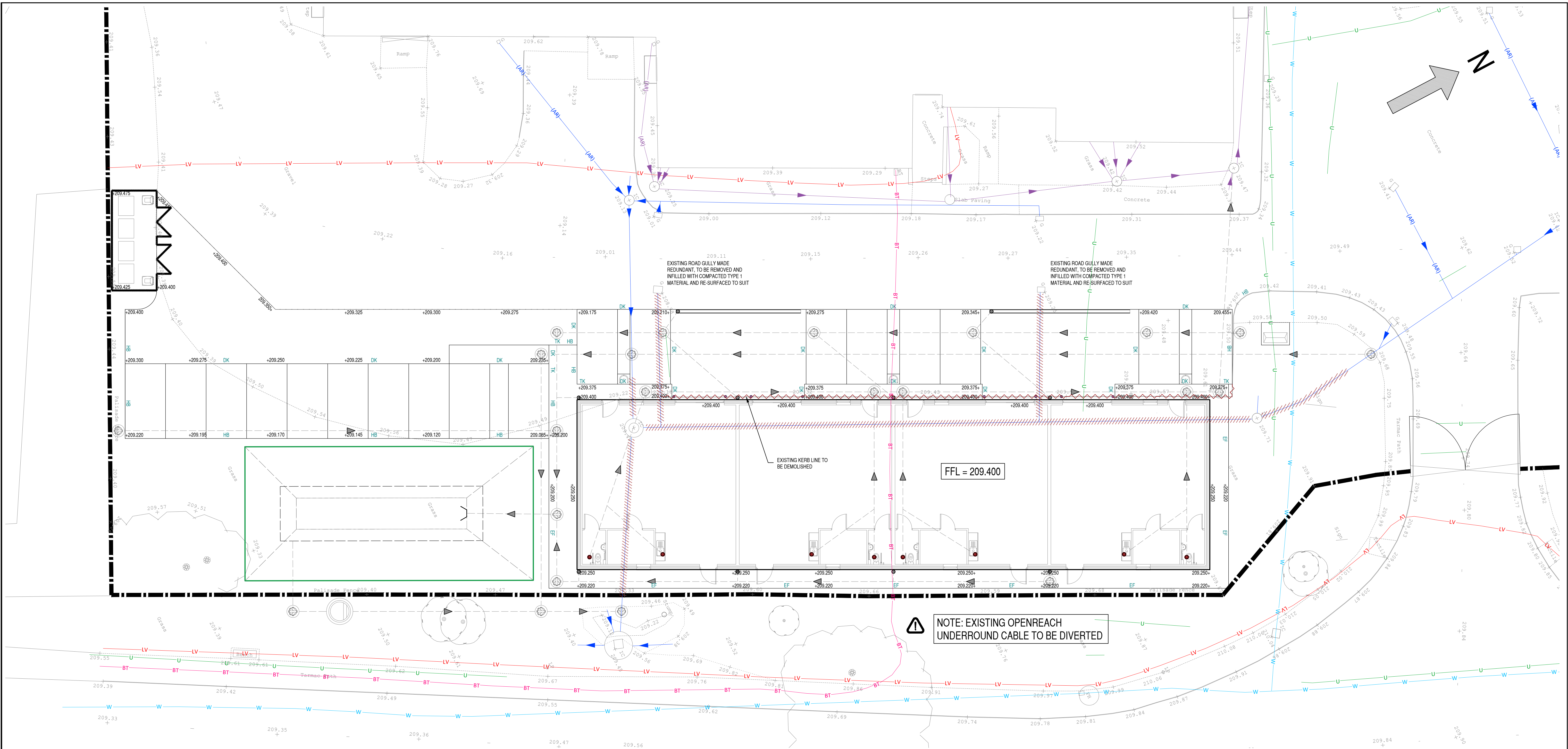
- PAV2 CONCRETE YARD CONSTRUCTION (120m²)
- PERMEABLE BLOCK PAVING CONSTRUCTION (240m²)
- TARMAC ROAD CONSTRUCTION (200m²)
- TARMAC FOOTPATH CONSTRUCTION (120m²)

NOTES

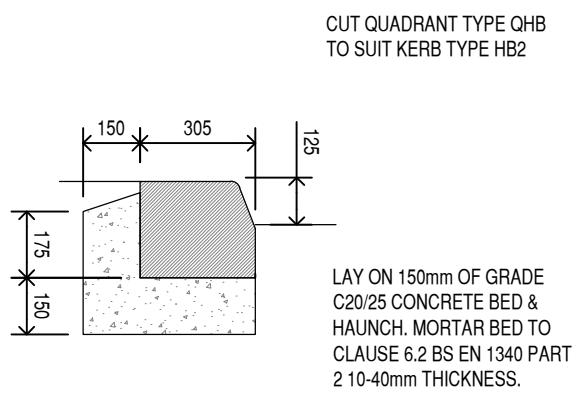
- ALL CLAUSE REFERENCES ARE FROM D.O.T. PUBLICATION 'SPECIFICATION FOR HIGHWAY WORKS'.
- ALL FORMATIONS SHALL BE PROOF ROLLED ANY SOFT SPOTS REMOVED AND REPLACED WITH CLASS 6F2 TABLE 61 MATERIAL. COMPACTION SHALL BE IN ACCORDANCE WITH CLAUSE 612. THE MINIMUM CBR OF AREAS OF FILL MATERIAL SHALL BE 15% ALL FILL MATERIAL MUST BE APPROVED BY THE HIGHWAY AUTHORITY PRIOR TO USE. (S.H.W.).
- IF ROADBASE IS LAID AND IS NOT COVERED IMMEDIATELY WITH THE BASECOURSE THEN THE ROADBASE SHOULD BE SPRAYED WITH A SEALING COAT OF BITUMINOUS SPRAY TO CLAUSE 920.
- FORMATION LEVELS TO ALL EXTERNAL CONSTRUCTION MAKE UPS TO BE PROOF ROLLED TO REFUSAL. ANY SOFT SPOTS TO BE REMOVED AND REPLACED WITH 6F2. MAKE-UP LEVELS TO UNDERSIDE OF SUB-BASE FOLLOWING PROOF ROLLING IF NECESSARY. MINIMUM CLASS OF CAPPING TO BE 6F2.

P02	RC	28/05/24	UPDATED SITE PLAN
P01	RC	08/05/24	INITIAL ISSUE FOR COMMENT
Rev	By	Date	Revision
Bingham Hall PARTNERSHIP LTD			
Consulting Civil & Structural Engineers 5 Ty-Nant Court Morganstown Cardiff CF15 5LW Telephone (029) 2048 8588			
Project Title GLYNCORRWG INDUSTRIAL UNITS			
Drawing Title PROPOSED EXTERNAL FINISHES			
Drawing Status INFORMATION			
Architect EPT PARTNERSHIP			
Client ANDREW SCOTT CONSTRUCTION LTD.			
Scale 1:125	Drawn RC	Drawing Size A1	Date APRIL '24
Project No. 6807 - BHP - 02 - XX - DR - C - (60)205	Volume -	Level -	Type -
Role -	Number -	Rev P02	Checked DTH

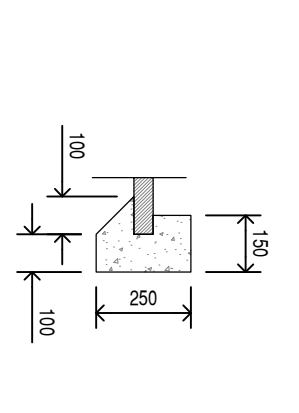
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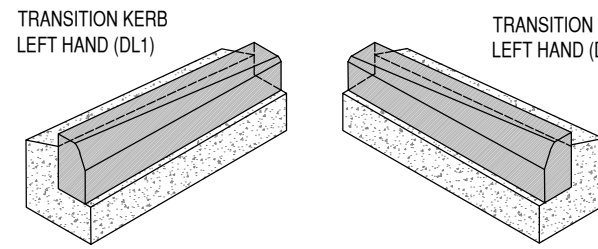
CUT DOWN QUADRANT KERB DETAIL (QHB)



SECTION A-A



EDGING KERB (EF)



TRANSITION KERBS

NOTES:

1. ALL KERBS AND CHANNELS TO BE IN ACCORDANCE WITH BS 5726.
2. UNLESS SPECIFIED OTHERWISE FILL KERBS TO BE LAID WITH 125mm UPSTAND.
3. BED AND HAUNCH TO KERBS AND CHANNELS TO BE 200mm (28 day strength) CONCRETE.
4. KERBS AND CHANNELS MAY BE LAID EITHER DIRECTLY ONTO THE WET CONCRETE BASE OR BEDDED ON 1015mm 1:3 CEMENT MORTAR ON A PREVIOUSLY CONSTRUCTED BASE.
5. TAPER OR TRANSITION KERBS TO BE USED AT CHANGES IN KERB FACE OR TYPE.
6. KERBS AND CHANNELS TO BE LAID CLOSE-JOINTED. WHERE JOINTS OF WIDTH GREATER THAN 5mm ARE UNAVOIDABLE THESE SHALL BE FILLED WITH EPOXY MORTAR.

NOTES

1. ALL CLAUSE REFERENCES ARE FROM D.O.T. PUBLICATION 'SPECIFICATION FOR HIGHWAY WORKS'.
2. ALL FORMATIONS SHALL BE PROOF ROLLED ANY SOFT SPOTS REMOVED AND REPLACED WITH CLASS 6F2 TABLE 6/1 MATERIAL. COMPACTION SHALL BE IN ACCORDANCE WITH CLAUSE 612. THE MINIMUM CBR OF AREAS OF FILL MATERIAL SHALL BE 15% ALL FILL MATERIAL MUST BE APPROVED BY THE HIGHWAY AUTHORITY PRIOR TO USE. (S.H.W.).
3. IF ROADBASE IS LAID AND IS NOT COVERED IMMEDIATELY WITH THE BASECOURSE THEN THE ROADBASE SHOULD BE SPRAYED WITH A SEALING COAT OF BITUMINOUS SPRAY TO CLAUSE 920.
4. FORMATION LEVELS TO ALL EXTERNAL CONSTRUCTION MAKE UPS TO BE PROOF ROLLED TO REFUSAL. ANY SOFT SPOTS TO BE REMOVED AND REPLACED WITH 6F2. MAKE-UP LEVELS TO UNDERSIDE OF SUB-BASE FOLLOWING PROOF ROLLING IF NECESSARY. MINIMUM CLASS OF CAPPING TO BE 6F2.

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

In addition to the hazards / risks normally associated with the types of work detailed on this drawing, note the following:

CONSTRUCTION
1. EXISTING BELOW GROUND SERVICES TO BE ESTABLISHED

MAINTENANCE / CLEANING
1. None identified at date of issue.

DECOMMISSIONING / DEMOLITION
1. None identified at date of issue.

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement.
Health and safety risk identified in BHP Risk Register are to be observed prior to any construction method statement being produced.

P02	RC	28/05/24	UPDATED SITE PLAN
P01	RC	19/04/24	INITIAL ISSUE FOR COMMENT
Rev	By	Date	Revision

Bingham Hall PARTNERSHIP LTD Consulting Civil & Structural Engineers 5 Ty-Nant Court Morganstown Cardiff CF15 6LW Telephone (029) 2048 8588			
Project Title GLYNCORRWG INDUSTRIAL UNITS			
Drawing Title PROPOSED EXTERNAL WORKS LAYOUT			
Drawing Status INFORMATION			
Architect EPT PARTNERSHIP			
Client ANDREW SCOTT CONSTRUCTION LTD.			
Scale 1:125	Drawn RC	Drawing Size A1	Date APRIL '24
Project No. 6807 - BHP - 02 - XX - DR - C - (60)201	Originator Volume	Level Type	Role Number
Rev P02			

[illegible]

PROPOSED STORM WATER SEWER	
PROPOSED STORM WATER PERFORATED PIPE	
PROPOSED FOUL WATER SEWER	
PROPOSED DIVERTED STORM WATER SEWER	
DENOTES EXISTING SEWER TO BE DIVERTED	
STORM / FOUL TYPE 2 / E MANHOLE	
STORM / FOUL TYPE 3 INSPECTION CHAMBER	
STORM FLOW CONTROL DEVICE	
FOUL FLOOR SOCKET	
RAINWATER PIPE	
ROAD GULLY	
YARD GULLY	
PROPRIETARY SWALE INLET	
DRAINAGE CHANNEL	

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT BHPIL AND ARCHITECTS DRAWINGS.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL SITE INVESTIGATION REPORTS AVAILABLE.
3. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL SPECIALISTS DRAWINGS.
4. ALL NEW SOLI. PIPES, RAIN WATER PIPE & FOUL WATER GULLY LOCATIONS AND FINAL NUMBERS ARE TO BE CONFIRMED BY THE M & E ENGINEER AND ARCHITECT.
5. ALL RAIN WATER PIPES ARE TO BE CONNECTED TO A ROADABLE YARD GULLY AT GROUND LEVEL.
6. WHERE PROPOSED SEWERS CONNECT INTO EXISTING ADOPTED SEWERS THE CONTRACTOR IS TO CHECK THE COVER LEVEL, INVERT LEVEL, SIZE OF PIPE/CHAMBER AND THE CONDITION OF THE EXISTING SEWER / CHAMBER PRIOR TO DRAINAGE WORKS COMMENCING ON SITE.
7. THE CONTRACTOR IS TO ENSURE THAT ANY EXCAVATIONS, ESPECIALLY LOCAL, TO THE SITE BOUNDARY AND EXISTING BUILDING DOES NOT UNDERMINE ANY EXISTING STRUCTURE / FEATURE. *IF IN DOUBT ASK!*
8. ALL EXISTING SERVICES ARE TO BE IDENTIFIED BY THE CONTRACTOR AND EITHER PROTECTED OR DIVERTED IF PRIOR TO ANY WORKS COMMENCING ON SITE IN ACCORDANCE WITH THE APPROVED OWNERS APPROVAL.
9. ANY ABANDONED MANHOLES ARE TO BE GRUBBED UP AND BACKFILLED WITH WELL COMPACTED TYPE 1 MATERIAL, AND ENDS OF ABANDONED SEWERS TO BE PLUGGED WITH CONCRETE.
10. THE CONTRACTOR IS TO ADHERE TO ALL RELEVANT CURRENT HEALTH & SAFETY REGULATIONS AT ALL TIMES.

- CONTRACTOR TO VERIFY INVERT LEVELS OF EXISTING SEWERS AT CONNECTION POINTS PRIOR TO INSTALLATION OF UPSTREAM PROPOSED SEWERS; IF THERE IS A DISCREPANCY TO THE ASSUMED INVERT LEVELS SHOWN ON THE DRAWING, REPORT BACK TO BHPL.

In addition to the hazards / risks normally associated with the types of work detailed on this drawing, note the following:

1. None identified at date of issue

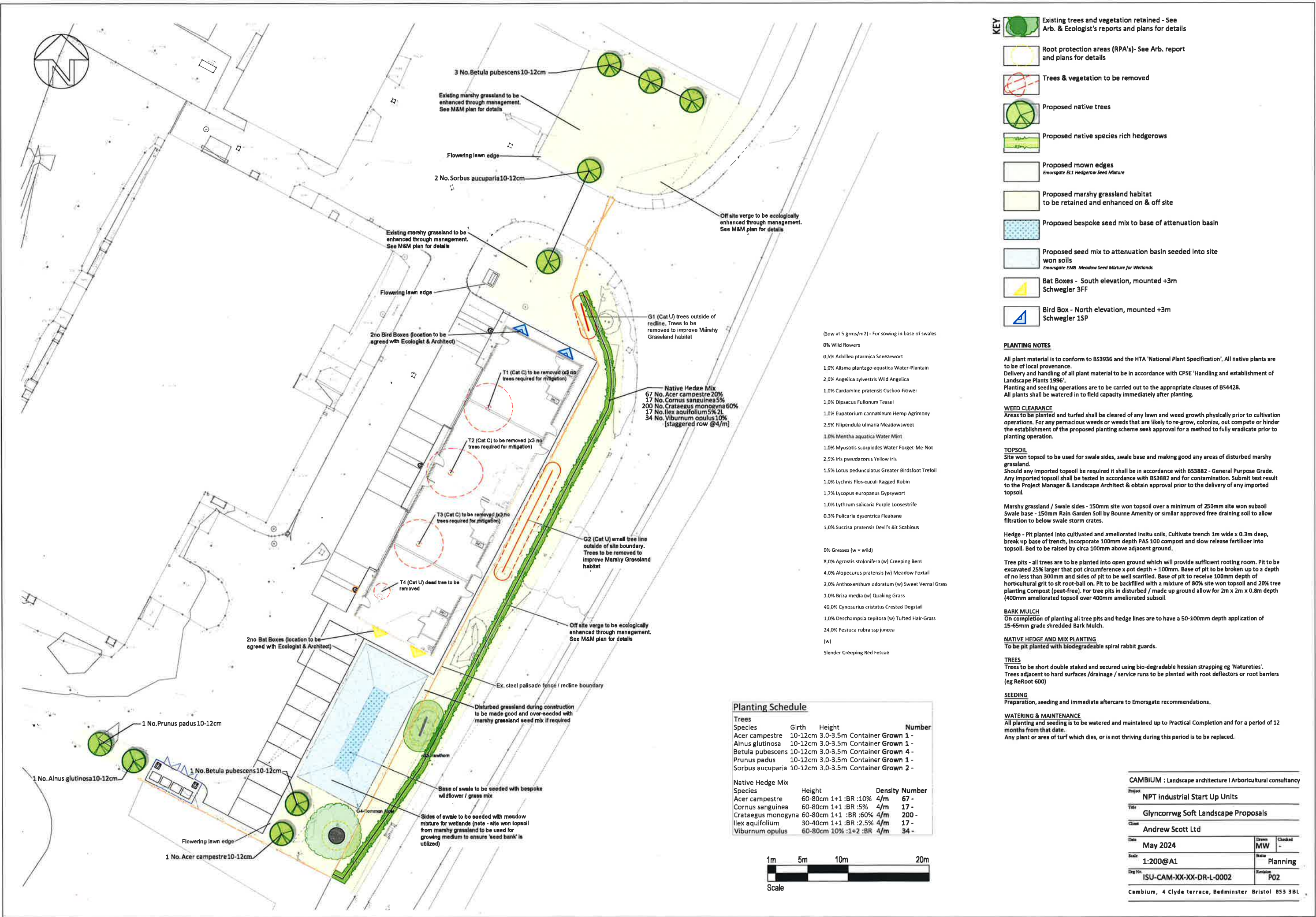
1. None identified at date of issue

1. None identified at date of issue.

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement.

Health and safety risk identified in BHPL Risk Register are to be observed prior to any construction method statement being produced.

P03	RC	28/05/24	UPDATED SITE PLAN		
P02	RC	22/05/24	UPDATED TO REFLECT SW CALCULATIONS		
P01	RC	08/05/24	INITIAL ISSUE FOR COMMENT		
Rev	By	Date	Revision		
Bingham Hall PARTNERSHIP LTD Consulting Civil & Structural Engineers 5 Ty-Nant Court Morginstown Cardiff CF15 8LW Telephone (029) 2048 8588					
Project Title					
GLYNCORRWG INDUSTRIAL UNITS					
Drawing Title					
PROPOSED DRAINAGE LAYOUT					
Drawing Status					
INFORMATION					
Architect					
EPT PARTNERSHIP					
Client					
ANDREW SCOTT CONSTRUCTION LTD.					
Scale	Drawn	Drawing Size	Date	Checked	Rev
1:200	RC	A1	APRIL '24	DTH	
Project No. - Originator - Volume - Level - Type - Role - Number					
6807 - BHP - 02 - XX - DR - C - (50)201					P03



KEY

- Existing trees and vegetation retained - See Arb. & Ecologist's reports and plans for details
- Root protection areas (RPA's) - See Arb. report and plans for details
- Trees & vegetation to be removed
- Proposed native trees
- Proposed native species rich hedgerows
- Proposed mown edges
Emorsgate EL1 Hedgerow Seed Mixture
- Proposed marshy grassland habitat to be retained and enhanced on & off site
- Proposed bespoke seed mix to base of attenuation basin
- Proposed seed mix to attenuation basin seeded into site won soils
Emorsgate EMR Meadow Seed Mixture for Wetlands
- Bat Boxes - South elevation, mounted +3m
Schwegler 3FF
- Bird Box - North elevation, mounted +3m
Schwegler 15P

PLANTING NOTES

All plant material is to conform to BS3936 and the HTA 'National Plant Specification'. All native plants are to be of local provenance. Delivery and handling of all plant material to be in accordance with CPSE 'Handling and establishment of Landscape Plants 1996'. Planting and seeding operations are to be carried out to the appropriate clauses of BS4428. All plants shall be watered in to field capacity immediately after planting.

WEED CLEARANCE

Areas to be planted and turfed shall be cleared of any lawn and weed growth physically prior to cultivation operations. For any pernicious weeds or weeds that are likely to re-grow, colonize, out compete or hinder the establishment of the proposed planting scheme seek approval for a method to fully eradicate prior to planting operation.

TOPSOIL

Site won topsoil to be used for swale sides, swale base and making good any areas of disturbed marshy grassland. Should any imported topsoil be required it shall be in accordance with BS3882 - General Purpose Grade. Any imported topsoil shall be tested in accordance with BS3882 and for contamination. Submit test result to the Project Manager & Landscape Architect & obtain approval prior to the delivery of any imported topsoil.

Marshy grassland / Swale sides - 150mm site won topsoil over a minimum of 250mm site won subsoil
Swale base - 150mm Rain Garden Soil by Bourne Amenity or similar approved free draining soil to allow filtration to below swale storm crates.

Hedge - Pit planted into cultivated and ameliorated insitu soils. Cultivate trench 1m wide x 0.3m deep, break up base of trench, incorporate 100mm depth PAS 100 compost and slow release fertilizer into topsoil. Bed to be raised by circa 100mm above adjacent ground.

Tree pits - all trees are to be planted into open ground which will provide sufficient rooting room. Pit to be excavated 25% larger than pot circumference x pot depth + 100mm. Base of pit to be broken up to a depth of no less than 300mm and sides of pit to be well scarified. Base of pit to receive 100mm depth of horticultural grit to sit root-ball on. Pit to be backfilled with a mixture of 80% site won topsoil and 20% tree planting Compost (peat-free). For tree pits in disturbed / made up ground allow for 2m x 2m x 0.8m depth (400mm ameliorated topsoil over 400mm ameliorated subsoil).

BARK MULCH
On completion of planting all tree pits and hedge lines are to have a 50-100mm depth application of 15-65mm grade shredded Bark Mulch.

NATIVE HEDGE AND MIX PLANTING
To be pit planted with biodegradable spiral rabbit guards.

TREES
Trees to be short double staked and secured using bio-degradable hessian strapping eg 'Natureties'. Trees adjacent to hard surfaces / drainage / service runs to be planted with root deflectors or root barriers (eg ReRoot 600)

SEEDING
Preparation, seeding and immediate aftercare to Emorsgate recommendations.

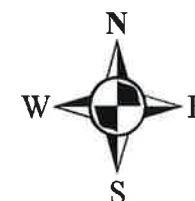
WATERING & MAINTENANCE
All planting and seeding is to be watered and maintained up to Practical Completion and for a period of 12 months from that date. Any plant or area of turf which dies, or is not thriving during this period is to be replaced.

Planting Schedule					
Trees					
Species	Girth	Height			Number
Acer campestre	10-12cm	3.0-3.5m	Container Grown	1 -	
Alnus glutinosa	10-12cm	3.0-3.5m	Container Grown	1 -	
Betula pubescens	10-12cm	3.0-3.5m	Container Grown	4 -	
Prunus padus	10-12cm	3.0-3.5m	Container Grown	1 -	
Sorbus aucuparia	10-12cm	3.0-3.5m	Container	Grown 2 -	
Native Hedge Mix					
Species	Height		Density		Number
Acer campestre	60-80cm	1+1 :BR :10%	4/m		67 -
Cornus sanguinea	60-80cm	1+1 :BR :5%	4/m		17 -
Crataegus monogyna	60-80cm	1+1 :BR :60%	4/m		200 -
Ilex aquifolium	30-40cm	1+1 :BR :2.5%	4/m		17 -
Viburnum opulus	60-80cm	10% :1+2 :BR	4/m		34 -

CAMBIUM : Landscape architecture Arboricultural consultancy			
Project	NPT Industrial Start Up Units		
Title	Glyncorrwg Soft Landscape Proposals		
Client	Andrew Scott Ltd		
Date	May 2024	Drawn	MW
Scale	1:200@A1	Status	Planning
Doc No.	ISU-CAM-XX-XX-DR-L-0002	Revision	P02
Cambium, 4 Clyde terrace, Bedminster Bristol BS3 3BL			



Glyncorrwg Workshops Park Street
Glyncorrwg SA13 3EA



LEGEND(Representative of most common features)

Waste network:

	Foul chamber		Outfall
	Surface water chamber		Lamp hole
	Combined chamber		Storm Overflow
	Combined sewer overflow		Rising main
	Special purpose chamber		Gravity sewer
	Treatment works		Private sewer
	Pumping station		Private sewer subject to Sect. 104 adoption agreement
	Sewers joined colour indicates the type		Private Sewer Transfer
RED GREEN BROWN PURPLE	- Combined - Surface Water - Sewer - Former S26 sewer (for indicative purposes only)		Lateral Drain
			Inspection Chamber

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.

De Koning's opinion is that the information as to the position of underground works appears to be generally available, and that the Commission's understanding that it is based on the best information available and on no warranty as to its accuracy is relied upon in the event of excavations or other works made in the vicinity of the company's apparatus. The stress is placed upon the fact that any excavations are made entirely on the site. The information is supplied to the public in order to enable them to take the necessary precautions. The Commission is of the opinion that the information is based upon the best information available and, in particular, that 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, or a gas pipe, or a cable, or a sewer, or a tunnel, or a railway, or a road, or a canal, or a drainage system, or any of the particular things including their position underground may not be known. It must be understood that the furnishing of this information is entirely without prejudice to the provisions of the New Roads and Street Works Act 1991.

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: 1:1000
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