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CONSULTING CIVIL & STRUCTURAL ENGINEERS

FLOOD CONSEQUENCE ASSESSMENT (FCA)

Former Changing Room,
Rhodes Avenue,
Aberavon, Neath Port Talbot
SA12 6UT

Prepared for: CJ Construction
Project Ref: 21698 – FCA – 02

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All the Natural Resources Wales (NRW) mapping data used is under special license. Data is current as of **June 2025** and is subject to change.

The information presented and conclusions drawn are based on statistical data and are for guidance purposes only. The study provides no guarantee against flooding of the study site or elsewhere, nor of the absolute accuracy of water levels, flow rates and associated probabilities.

Constraints

This is the second (2nd) iteration of document 21698-FCA-01 which, following submission and consultation to / with NRW, who have responded with outstanding concerns with regard to flood risk and hence still object to the proposals. NRW comments are included (in full) in **Appendix D**, for reference.

The aims and objectives of this report are to provide NRW with the additional information they require to; and which will hopefully alleviate any further outstanding concerns regarding flood risk to development proposals, over its lifetime expectancy. All changes in this report are in direct response to all the narrative within NRW's comments, unless specified otherwise.



1 INTRODUCTION

1.1 Purpose of Report

Vale Consultancy has been instructed by *CJ Construction* to prepare a Flood Consequences Assessment (FCA) report to accompany a planning application for the proposed redevelopment of Land at Rhodes Avenue, Aberavon, Neath Port Talbot (“The Site”) for residential use.

The aims and objectives of this report are to provide NRW with the additional information they require, and which will hopefully alleviate any further outstanding concerns regarding flood risk to development proposals, over its lifetime expectancy (100-years). All changes in this report are in direct response to the narrative within NRW's comments, unless specified otherwise.

The assessment has been undertaken in accordance with the requirements of Technical Advice Note 15 (TAN 15) dated 31st March 2025.

1.2 Background

A pre-application consultation was sent to Neath Port Talbot (Ref: Q2025/0061) via email on 19th February 2025. The document refers to the use of both the Flood Map for Planning (currently the best available information) and the Development Advice Map (now superseded by the Flood Map for Planning as part of the updated and new TAN15 that was issued by NRW in March 2025).

It notes that the site is located within Zone C1 of the Development Advice Map and that the proposed development is classified as highly vulnerable (HVD). The new Flood Map for Planning (FMfP) indicates that the site is situated in Flood Zone 3. The site lies within a TAN15 Defended Zone (Rivers and Sea).

Refer to Appendix D.

1.3 Relevant Documents

Relevant Documents that have been consulted to inform this FCA include (but are not limited to);

- South West Wales – Stage 1 Strategic Flood Consequence Assessment (JBA Consulting, November 2022);
- Local Development Plan 2011 – 2026: Neath Port Talbot County Borough Council (Adopted January 2016);
- Neath Port Talbot County Borough Council Flood Risk Management Plan 2015;
- Welsh Government National Marine Plan (November 2019);
- Flood Consequences Assessments: Climate Change Allowances, Welsh Government, September 2021;
- Technical Advice Note 15: Development and Flood Risk, Welsh Government, March 2025;
- Welsh Government Statutory standards for sustainable drainage systems – designing, constructing, operating and maintaining surface water drainage systems (2018);
- Welsh Government Sustainable Drainage (SuDS) Statutory Guidance (2019)

2 SITE DETAILS AND PROPOSED DEVELOPMENT

2.1 Site Location

The approximately 0.19 ha (or 1935.8m²) site is located to the west of Rhodes Avenue, Aberavon at Ordnance Survey National Grid Reference SS75526 90495 (275526E, 190495N) as shown in **Figure 1 and 2**, below.

Refer to Appendix A – Site Location Plan.

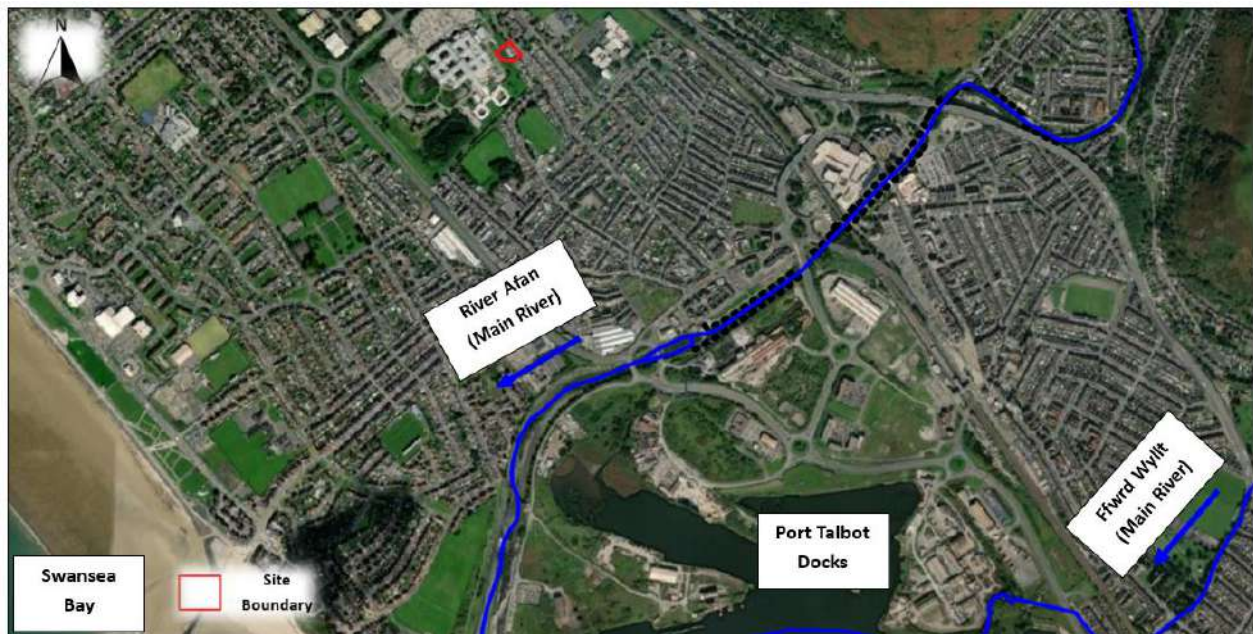


Figure 1: Site Location Satellite Plan illustrating notable and relevant surface water features

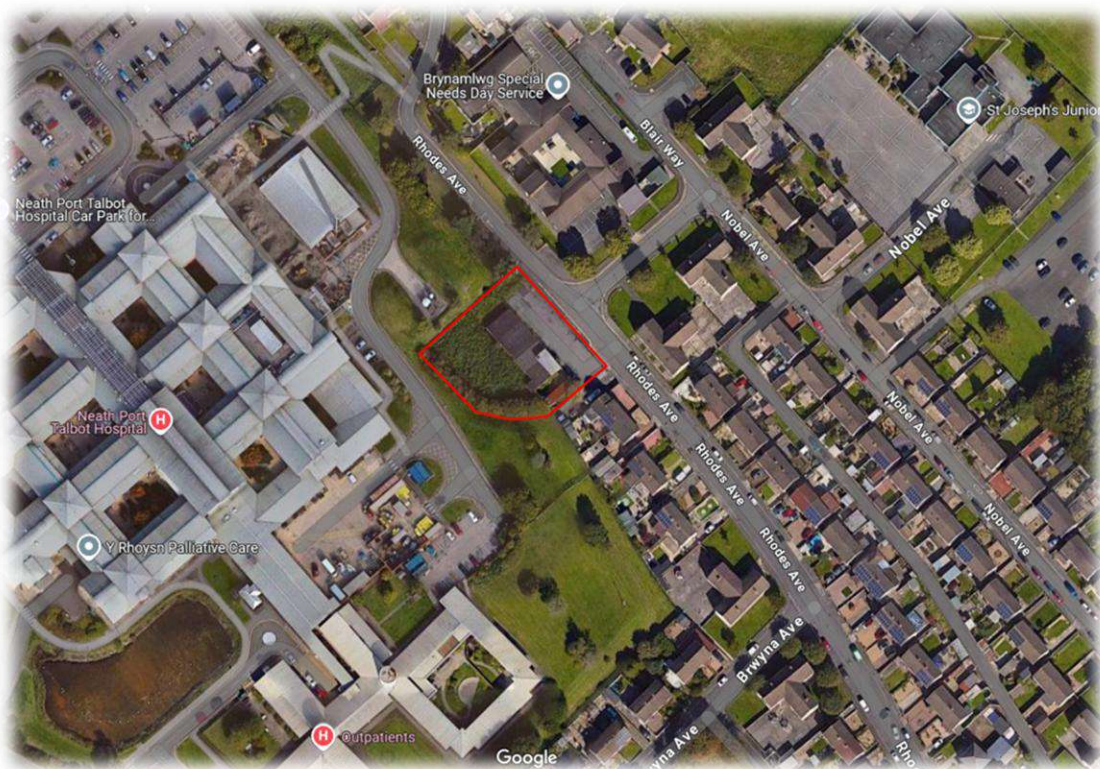


Figure 2: Site Location Satellite Imagery (Google) Plan including Site Redline Boundary



2.2 Existing & Proposed Development

The application site currently comprises of a single storey detached former changing rooms building, with hard standing to the front and vegetation to the rear. Provision of site access / egress is from Rhodes Avenue. In its existing state – the site is disused and dilapidated and in need of re-development. The site is in an area surrounded by HVD (i.e. residential, emergency services and a school).

Refer to Appendix A – Existing Site Plans.

The development proposals are for the erection of 8 no Residential Units which consist of 6 no 1 bed flats (assisted living) and 2 no 1 bed Bungalows (100% affordable).

Refer to Appendix B – Existing Site Plans

TAN15 classifies residential development as ‘Highly Vulnerable’ (HVD) in regards to flood risk.

For the purposes of this report; the site and proposals are considered ‘*Redevelopment*’ which is defined by the new TAN15 as; ‘*Any development on previously developed land as defined in Planning Policy Wales*’.

2.3 Existing & Proposed Drainage

Welsh Water (DCWW) asset plans have been acquired and are included in **Appendix A**, for reference. A review of the plans indicates a 150mm public combined sewer within Rhodes Avenue flowing in a south easterly direction.

This should be complemented by a CCTV survey (if required) of any existing drainage assets and network serving the site and localised area.

A review of *Google Streetview* online mapping indicates that the existing site and building are served by surface water drainage features including gutters and rainwater downpipes (RWP). Rhodes Avenue is served by an existing surface water drainage network due to the presence of gullies within the highway.

The proposals will be subject to a successful SAB Application which will ensure that surface water flows are managed effectively at their course. The Surface Water Drainage Strategy and associated SAB Application will be in line and adherence with national and regional policy, guidance and legislation and will incorporate SuDS. Furthermore, and moreover; and seeing as the site is defined as a ‘Redevelopment’ (i.e. *Previously Developed*); the Drainage Strategy will need to provide a betterment in the order of 40% (discharge rates) when compared to the existing site and will take into consideration the potential impacts of climate change.

The relevant statutory SuDS Approving Body (SAB) authority is Neath Port Talbot (NPT) County Council.

The proposed surface water drainage strategy will be efficient and effective at dealing with surface water at its source and in a *SuDS Management Train* fashion and in line with Welsh Government (WG) Statutory standards for SuDS – designing, constructing, operating and maintaining surface water drainage systems (2018).

Section 7. Sustainable drainage from the new TAN15 document states;

‘7.3 The responsibility within the local authority for ensuring SuDS are integrated into new developments sits with the SuDS Approving Body (SAB). The approval of SuDS for a new development by the SAB is independent of the planning process. New developments of more than one dwelling or where the area covered by construction work equals or exceeds 100m² require approval from the SAB before construction can commence. Adoption and management arrangements, including a funding mechanism for maintenance of



SuDS infrastructure and all drainage elements, must be agreed by the SAB as part of this approval. This will ensure that SuDS infrastructure is properly maintained and functions effectively for its design life.' And; '7.4 SuDS manage rainfall in a similar way to natural processes, making use of the landscape and vegetation to control the flow and volume of surface water. They offer a variety of engineering solutions that can be employed to manage surface water run-off, recognising there are differences in soil structure, water table levels and infiltration rates across Wales. The Statutory National Standards for SuDS7 outline various approved methods of managing surface water; developers will need to design and construct SuDS in accordance with the Standards in order to secure SAB approval.'

2.4 Existing Topography

In the absence of a Topographic Survey at this location; LiDAR data, to metres Above Ordnance Datum (m AOD) has been used to develop a 1m resolution digital terrain model (DTM) of the site and surrounding area. A topographical survey (and CCTV drainage survey if necessary) should be undertaken to inform detailed drainage design. **Refer to Figure 2, below.**

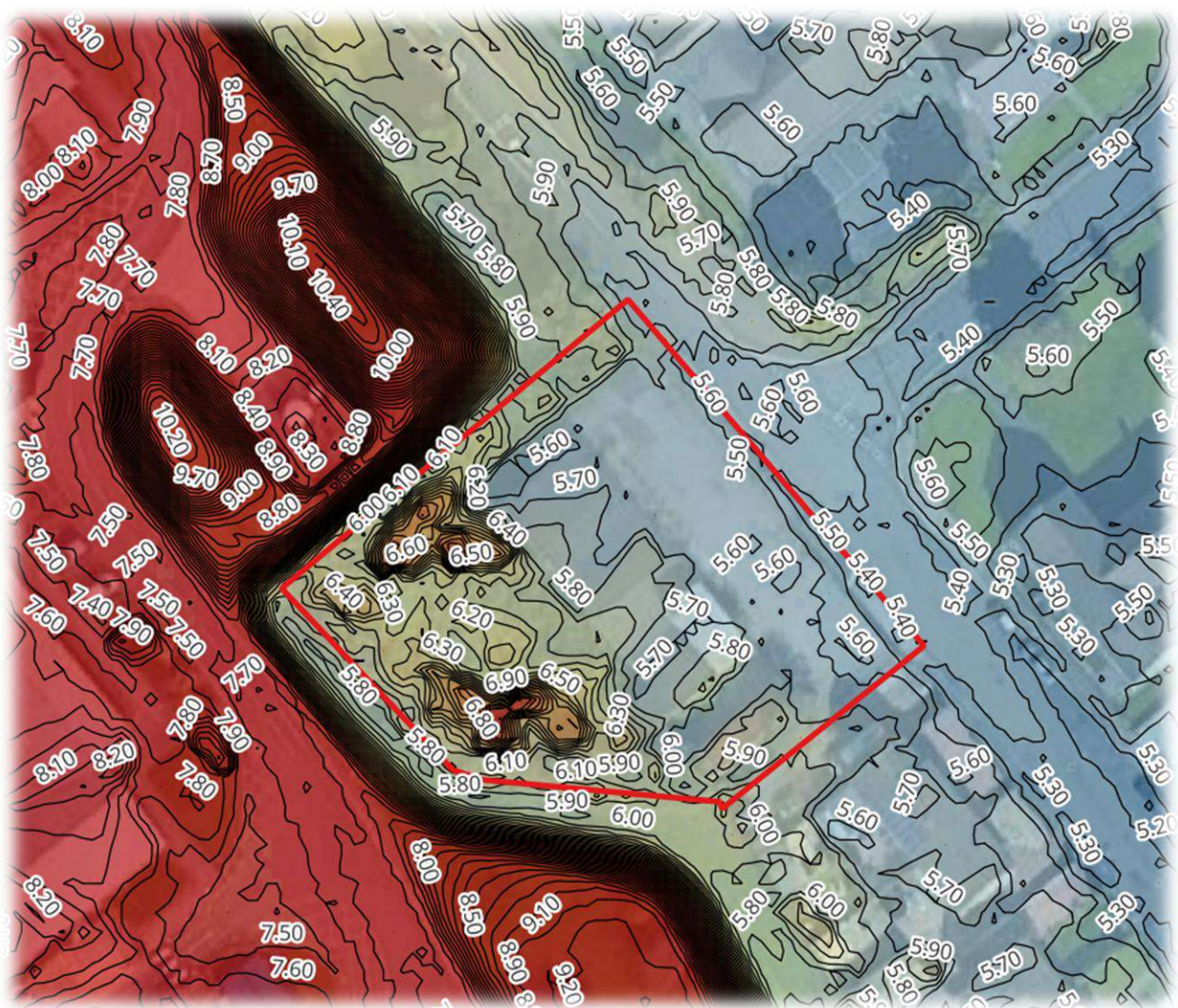


Figure 2: LiDAR Extract 1m Resolution DTM

A Zonal Statistics function of the DTM tile was undertaken within QGIS. A review of the results indicates that existing site levels are in the region of 5.39 – 7.42 m AOD. The proposed bungalows are set to be at levels in the region of 5.67 – 5.75 m AOD. The Flats will be set to levels in the region of 5.62 – 6.80 m AOD.



Existing ground levels on Rhodes Avenue (which provides site access / egress) are in the region of 5.40 – 5.60 m AOD; generally rising in a north westerly fashion.

Further afield, the general lay of the surrounding land slopes from northwest to southeast. A topographical survey of the site should be undertaken to inform detailed drainage design (SAB).

2.5 Existing Ground Conditions

According to Soilscape soils dataset produced by the Cranfield Soil and AgriFood Institute, soil conditions at the site and within the surrounding area are described as loamy and clayey soils of coastal flats with naturally high groundwater (*Soilscape 21*) that drains to local groundwater under naturally prevailing conditions.

British Geological Survey (BGS) Mapping of surface geology indicates the underlying bedrock formation is South Wales Middle Coal Measures Formation - Mudstone, Siltstone and Sandstone. Bedrock formed between 318 and 309.5 million years ago during the Carboniferous period and is overlain by Tidal Flat (superficial) Deposits - Clay, Silt and Sand. Superficial deposits formed between 11.8 thousand years ago and the present during the Quaternary period. Although not shown to fall within; the site is surrounded in most directions by what is identified by BGS mapping to be Made Ground (undivided) – Artificial Deposit. Made Ground is an area where the pre-existing (natural or artificial) land surface is raised by artificial deposits. The purpose of the made ground is unspecified. **Refer to Figure 3 below.**

According to the BGS Single Onshore Borehole Index; a borehole record has been identified at coordinates: 275520E, 190540N. This record identifies topsoil between 0.00 – 0.90 m below ground level (BGL), plastic, glass, rotting newspaper with a little dark brown gravel of slag between 0.90 – 2.40 m BGL, A/A mixed with medium brown clayey fibrous organic silt between 2.40 – 2.70 m BGL with silty, sandy clay underlaying to a depth of 8.25 m BGL. Groundwater was struck at 1.40 m BGL, which rose to 0.80 m after 15 minutes. This supports the above which indicates a presence of Made Ground in the area.

According to the BGS and NRW aquifer designation dataset the superficial deposits are described as a Secondary (Undifferentiated) aquifer whilst the bedrock is classified as a Secondary A aquifer. The site is not shown to be in a designated groundwater source protection zone. On-site ground investigation (GI) works should be undertaken along with infiltration testing to BRE365 Standards to inform detailed drainage design and SAB.

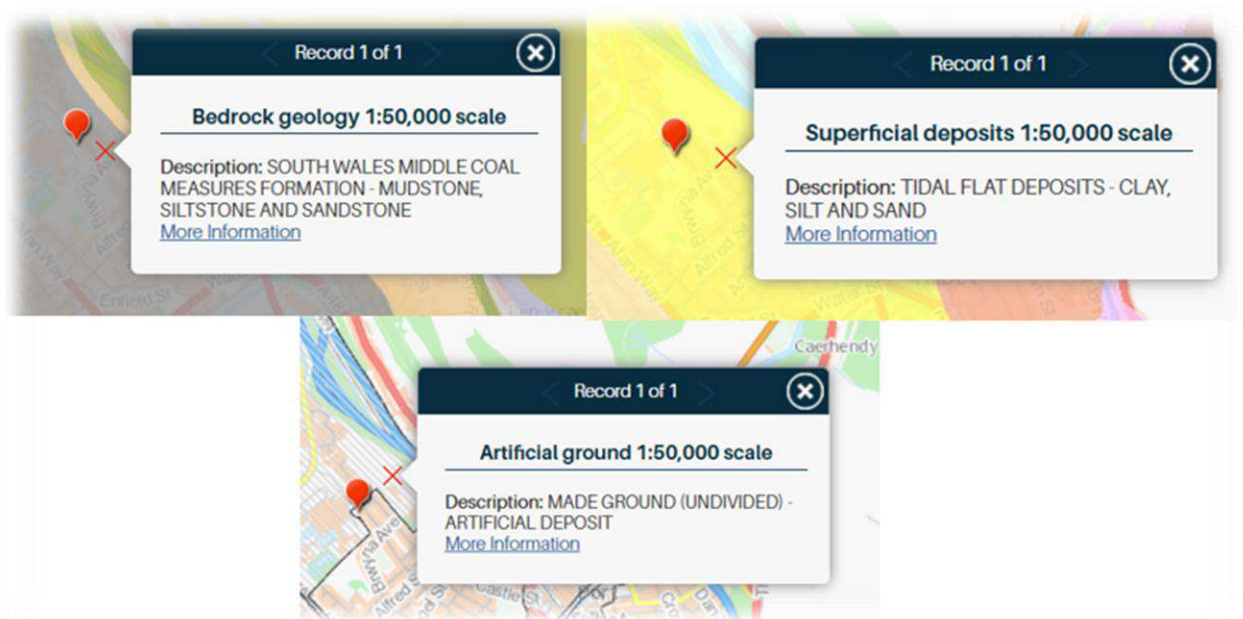


Figure 3: BGS Online Mapping Records



3 PLANNING POLICY

3.1 National Planning Policy

Future Wales - the National Plan 2040 sets out the national development framework for Wales with a strategy for addressing key national priorities through the planning system, including sustaining and developing a vibrant economy, achieving decarbonisation and climate-resilience, developing strong ecosystems and improving the health and well-being of our communities.

Policy 8 - Flooding states that “flood risk management that enables and supports sustainable strategic growth and regeneration in National and Regional Growth Areas will be supported. The Welsh Government will work with Flood Risk Management Authorities and developers to plan and invest in new and improved infrastructure, promoting nature-based solutions as a priority. Opportunities for multiple social, economic and environmental benefits must be maximised when investing in flood risk management infrastructure. It must be ensured that projects do not have adverse impacts on international and national statutory designated sites for nature conservation and the features for which they have been designated”.

Planning Policy Wales (PPW) sets out government's planning policies for Wales and how these are expected to be applied.

TAN15 (2025) provides technical guidance which supplements the policies set out in PPW and Future Wales in relation to flooding and coastal erosion. It provides a framework within which the flood risks arising from rivers, the sea and surface water, and the risk of coastal erosion can be assessed. It also provides advice on the consequences of the risks and adapting to and living with flood risk. It does not take precedence over other Technical Advice Notes and should be considered alongside other planning policies.

The TAN reflects the core principles of the National Strategy for Flood and Coastal Erosion Risk Management in Wales, 9 to adopt a risk-based approach in respect of development in areas at risk of flooding and coastal erosion. Welsh Government policy is that the continual building of flood defences in all areas of need is not sustainable or affordable. However, it is also recognised that there are a large number of significant settlements potentially affected by flood risk where further flood defences will be required. The policies set out in Future Wales provides a context for the prioritisation of flood defence work. The advice in this document seeks to ensure flood risk and coastal erosion are afforded appropriate consideration in the planning system.

When considering the risk associated with flooding and coastal erosion, the term ‘risk’ encompasses two things: 1 - The likelihood of an event happening, and 2 - The impact that will result if flooding or coastal erosion occurs.

The National Strategy recognises the varying degrees of flood risk, now and in the future. The Flood Risk for Planning Maps categorise land into distinct zones depending on their vulnerability to flooding as described in section 9. The National Strategy is clear that risk needs to be managed appropriately, and the TAN requires a proportionate response depending upon that risk. It is evident that many communities are located in areas at higher risk from flooding, but these communities must be allowed to adapt, change, and regenerate in the knowledge of what the science is showing. Throughout this TAN there are references to new development and redevelopment which is defined below:

New Development: Any development on greenfield land

Redevelopment: Any development on previously developed land as defined in Planning Policy Wales.

The ability to avoid or minimise risk when undertaking development varies according to the type of development proposed.



PPW generally gives preference to the reuse of previously developed land before greenfield land but does recognise that this may not be appropriate in all cases. The TAN does not change this preference.

The approach set out in this TAN is based on:

- A Flood Map for Planning identifying flood zones;
 - Defining developments by their vulnerability during flood events;
 - Advice on permissible uses in relation to the location of development and the consequences of flooding;
 - The preparation of strategic flood consequences and flood consequences assessments at the local level to refine understanding of flood risk;
 - Planning authorities incorporating local flood risk considerations into their planning policies and decisions
- National policy requires that planning applications for new development proposals should incorporate SuDS to appropriate operational standards and with maintenance arrangements in place unless there is clear evidence that this would be inappropriate.

The risk-based approach recognises that surface water and ordinary watercourse flood risk cannot always be managed and mitigated, particularly as these are increasing sources of risk as a result of climate change. The Flood Map for Planning provides information on these risks to enable planning authorities to develop locally appropriate approaches for areas at risk, or in close proximity to risk. Locally appropriate approaches can be incorporated into the Development Plan through setting local policies, to be used in the decision-making process for planning applications. Development and redevelopment should be avoided where there is a risk of being impacted by coastal erosion over the lifetime of the development. Local planning policies for coastal areas should reflect and complement Planning Policy Wales (PPW), Future Wales - the National Plan 2040, the Welsh National Marine Plan, the National Strategy for Flood and Coastal Erosion Risk Management, Shoreline Management Plans, Area Statements, and other relevant strategies.

Statutory standards for sustainable drainage were published by Welsh Government in October 2018 in relation to the design, construction, operation and maintenance of sustainable drainage systems serving new developments of more than one house or where the construction area is equal to or greater than 100 m². These standards set out how surface water runoff generated during the 100%, 3.3% and 1% AEP rainfall events and for events exceeding the 1% AEP event should be managed, how peak runoff rates should be restricted and how runoff volumes should be controlled. Approval is subsequently required from the SAB before construction can commence.

Within local authorities, the responsibility for ensuring that Sustainable Drainage Systems (SuDS) are integrated into new developments lies with the SuDS Approving Body (SAB). Approval of SuDS for a new development by the SAB is independent of the planning process. Developments with more than one dwelling or covering an area of 100m² or more require SAB approval before construction can begin. Additionally, arrangements for the adoption and management of SuDS, including a funding mechanism for the maintenance of the infrastructure and all drainage elements, must be agreed upon by the SAB as part of this approval. This ensures that SuDS infrastructure is properly maintained and functions effectively throughout its design life.

3.2 Local Planning Policy

The NPT County Borough Council's Local Development Plan (LDP) for 2011-2026 was adopted in January 2016. This plan serves as the foundation for land use decisions in the area. It outlines the council's land use strategy over a 15-year period, providing a framework to guide future development, specifying where, when, and how much new development can occur. The following policies address flood risk and drainage, and also policies directly related to the application site.



Policy SP1: Climate Change

Climate Change The causes and consequences of climate change will be addressed by implementing the following measures. In relation to the causes of climate change:

1. The efficiency and sustainability of the County Borough's settlements will be enhanced through developing more cohesive and efficient settlements and settlement patterns, and consequently more sustainable travel patterns;
2. Greenhouse gas emissions from transport will be minimised through encouraging freight / commercial transport by alternatives to road (e.g. rail or sea);
3. Dependence on the private car and the need to travel in general will be reduced through promoting alternative means of transport and more efficient use of existing facilities, co-location and joint use of facilities;
4. Provision will be made for the County Borough's appropriate contribution to renewable and low carbon energy generation.

In relation to the consequences of climate change: 1. Likely increased food risk will be taken into account and addressed by ensuring that there is greater resilience by avoiding development on land that is at risk from flooding in the first instance in accordance with the sequential approach set out in national guidance or in locations that could increase the risk of flooding elsewhere;

2. The fragmentation of habitats will be minimised and opportunities made for habitat and species change and migration where possible.

Climate change is likely to affect the environment and future development of Neath Port Talbot in a range of significant ways, some of which are not fully predictable at present. It is also necessary to reduce greenhouse gas production as far as reasonably possible in order to minimise the causes of climate change. These issues are considered to be of fundamental importance to the LDP and have influenced every aspect of the Plan's development. Climate change is consequently seen as an overarching matter to be addressed by all topic areas. The measures outlined in the climate change strategic policy have therefore fundamentally influenced the development of the Plan, and will be addressed and implemented through all its policies and proposals. Development allocations have been selected in accordance with sustainable development principles to be in locations that minimise as far as possible dependence on the private care and can benefit from local services and facilities, while encouraging the provision of locally based facilities in order to address the causes of climate change. At the same time, the effects of a changing climate (for example food risk) have been taken into account as far as possible in all the Plan allocations and policies.

Within the LDP, Policy SP7 for Housing Requirement states the need for an additional 8,760 dwellings between 2011-2026. Paragraph 2.5.22 also states that "the housing supply within Neath and Port Talbot will be made up of brownfield redevelopment, greenfield sites and existing commitments, with the regeneration of brownfield land being balanced against the release of greenfield areas", supporting Policy SP16 that requires development to be prioritised on brownfield sites over greenfield sites.

The proposed development therefore meets these criteria by constructing additional residential properties on an unused brownfield site.

It can be concluded that the site and proposals are in alignment with the policies, aims and objectives of the LDP.

The site falls within the Settlement Limit (SC1) for overarching policies.



4 SOURCES OF FLOODING AND PROBABILITY

4.1 Historical Records of Flooding

The Flood Map for Planning – Recorded Flood Extents and associated database indicates that there are no records of flooding at or within the immediate vicinity of the site.

4.2 Flood Risk from the Sea (Tidal / Coastal) and Rivers (Fluvial)

The nearest watercourse is the **River Afan** which lies circa 870m south of the site. The watercourse flows in a south-westerly direction to its outfall in Swansea Bay.

Formal flood defence infrastructure serves the site, and the closest assets are located circa 870 m south from the site on the right bank of the River Afan (South of the A4241). The Right bank defence (Asset Ref: WALL1500468) consists of a flood wall that is in *fair* condition. The defence has a downstream crest level of 8.41 m AOD and an upstream defence crest level of 9.12 m AOD.

Defences are also located on the right bank, north of the A4241, and adjacent to Port Talbot Bus Station (Asset Ref: WALL1500013), in the form of a flood wall. This defence has not been checked and therefore a condition rating has not been assessed / attributed to it. However, and from interrogation and review of the asset feature within GIS software indicates a downstream crest level of 9.21 m AOD, with an upstream defence crest level of 12.35 m AOD.

The NRW Flood Map for Planning – Rivers and Sea (FMfP) which includes an allowance for climate change (CCA) indicates the site to be located in **Flood Zone 3 (Rivers and Sea)**. The site is located within a **TAN15 Defended Zone (Rivers and Sea)**.

Figure 1 of TAN15 defines the Flood Map for Planning Flood Zones as:

- Flood Zone 1: Less than a 1 in 1000 (0.1%) chance of flooding in a given year from Rivers, Tidal sources (Sea) and from Surface Water and Small Watercourses (pluvial flows) in a given year including climate change allowances;
- Flood Zone 2: Less than a 1 in 100 chance (1%) of flooding from Rivers and pluvial flows, and; less than a 1 in 200 (0.5%) chance of flooding but greater than 1 in 1000 (0.1%) chance of flooding from Rivers, pluvial flows and Tidal sources (Sea) in a given year including climate change allowances;
- Flood Zone 3: Greater than a 1 in 100 (1%) chance of flooding from Rivers and pluvial flows, and; greater than a 1 in 200 (0.5%) chance of flooding from Tidal sources (Sea) in a given year including climate change allowances;
- TAN15 Defended Zones: Areas where flood risk management infrastructure provides a minimum standard of protection (SOP) against flooding from Rivers (during the 1 in 100 + CCA event and freeboard) and / or Tidal sources (Sea) (1 in 200 + CCA event and freeboard).

The required design standard for new development is to be flood-free during the 1% Annual Exceedance Probability (AEP) Fluvial flood event / scenario (i.e. a flood with a 1 in 100 chance of occurring in any year) and the 0.5% AEP Tidal flood event / scenario from the sea (i.e. a flood with a 1 in 200 chance of occurring in any year), plus an appropriate allowance for climate change over the lifetime expectancy of the development.

Local authority and emergency services command centres and hubs for the emergency services should be designed to be flood free during any 0.1% AEP event (i.e. a flood with a 1 in 1000 chance of occurring in any year), including an allowance for climate change. Where appropriate, an assessment against a breach and blockage scenario should be undertaken against return periods up to and including the 1 in 1000-year AEP event, including an allowance for climate change. Detailed guidance on climate change allowances for planning purposes is published separately by the Welsh Government.



The following table (**Table 1**) summarises the frequency thresholds for different types of development and is described in terms of annual probability of occurrence (AEP). The thresholds may be applied with more flexibility for redevelopment, changes of use, conversions and extensions, where the ability to substantially redesign a development is limited. In those circumstances the thresholds are a guide. If they cannot reasonably be met, the planning authority should seek the views of the relevant risk management authorities on the resilience measures proposed to help it reach a decision.

Table 1: Flood events in which development must be flood-free

Vulnerability Categories		Flood Event Type	
		Rivers	Sea
Highly Vulnerable Development	Emergency Services (Command Centres and hubs)	0.1% + CC (1 in 1,000 + CC)	0.1% + CC (1 in 1,000 + CC)
	All other types	1% + CC (1 in 100 + CC)	0.5% + CC (1 in 200 + CC)
Less Vulnerable Development		1% + CC (1 in 100 + CC)	0.5% + CC (1 in 200 + CC)
Water Compatible Development that may be occupied by people		1% + CC (1 in 100 + CC)	0.5% + CC (1 in 200 + CC)

The flood free thresholds outlined above relate to very serious but not the most extreme flood events (with the exception of thresholds for emergency services). During extreme flood events there is recognition that it may not be possible to keep all development flood-free. In these circumstances it is imperative that flooding does not endanger life, therefore it needs to be demonstrated that conditions within the development during an extreme event will be tolerable.

Unless and in the unlikely case of critical flood risk management flood defence infrastructure failing or being breached / overtopped; and in under normal conditions to site is inherently compliant with Table 1 above in that they are located within TAN15 Defended Zones (i.e. are located within an area that benefits from and is protected from fluvial and tidal flood risk with SOPs commensurate to the Q100 and T200 events including appropriate climate change allowances).

Taking a conservative approach; the Product 6 data has been interrogated to ensure that all HVD aspects of the proposals will remain flood-free in all events up to and including the defended Q100 + 30% CCA scenario. A required minimum design finished floor level (FFL) of **6.25 m AOD** should be applied to achieve this. This will also ensure that all HVD elements should remain flood-free during the defended Q1000 scenario.

During the defended Q1000 + 30% CCA scenario, the site could potentially flood by up to a maximum depth of 0.59m which is within the tolerable levels as stipulated by Table 2 of TAN15.

Table 2, below / overleaf indicates the tolerable flood depth and inundation velocity conditions for highly vulnerable and less vulnerable development when assessed against the 0.1% AEP extreme flood event, including an appropriate allowance for climate change.



Table 2: Tolerable conditions in an extreme flood event

Vulnerability Categories	Maximum depth of flooding (mm)	Maximum velocity of inundation (m/s)
Highly Vulnerable Development	600	0.15
Less Vulnerable Development Infrastructure associated with highly vulnerable development e.g. car parks, access, paths and roads Water compatible development (limited to those built elements of development that may be occupied by people)	600	0.30

Mitigation and flood resilience measures are not sufficient justification to permit a development if the tolerable conditions are exceeded during an extreme flood event. High velocities and / or depths of floodwater pose a potential risk to life, may cause structural damage to buildings and could impact on human health and wellbeing.

Table 2 summarises tolerance levels below which new development may be acceptable. Each site, however, must be considered individually, and a judgement taken in the context of the circumstances which could prevail at that site. Emergency services developments are not shown because they must be flood-free in a 0.1% event, as set out in Table 2. For emergency services developments other than command centres or hubs, the conditions for highly vulnerable development should be applied.

When deciding if the consequences of an extreme flood event can be acceptably managed, planning authorities should refer to relevant policies and actions identified in their Local Development Plan (LDP) and by Risk Management Authorities in local contingency plans. This is of particular relevance to emergency access and evacuation requirements.

Vale Consultancy has obtained modelled outputs for the following hydraulic models, and which have been used to inform the report: **Port_Talbot_5_V3.1_2021** and **Port_Talbot_5_V3.2_2022** which represents what is deemed to be the best and most up-to-date data for flood risk assessment within the catchment.

A minimum FFL of **6.25 m AOD** should be adopted for the residential units to ensure that they do not flood internally (will remain flood-free) during all defended modelled scenarios except for the defended Q1000 + 30% CCA event which could potentially cause a maximum inundation depth of 0.59m.

Refer to Table 3 & 4.

To achieve this; some re-profiling of the existing site levels will be required. This is because; in its existing state and arrangement; the site and proposals could fail certain elements of TAN15 (2025).

Minor reprofiling of the site can be achieved without increasing potential flood risk elsewhere. No third-party land / infrastructure will be affected as a result of the proposals.

Further raising or re-profiling is considered to be impractical and unrealistic in line with the proposals.

The proposals will meet the criteria set out in TAN15.

Refer to Section 5 – Mitigation Measures and Recommendations, Table 3 & 4, and also Appendix C – Mapped Modelled Outputs.



Table 3 & 4: Summary of Modelled Results Analysis

AEP Modelled Scenario	Max Design Flood Level (m AOD)	Max Flood Depths (m) under existing conditions	Max Flood Depths (m) assuming an FFL of 6.25 m AOD	Max inundation Velocity (m/s)	Hazard Rating	Speed of Inundation (hours)
(DEF) Q100	N/A	Flood – Free	Flood – Free	N/A	N/A	N/A
(DEF) Q100 + 30% CCA	5.47	0.08	Flood – Free	0.01	0 – 0.54	27 hours to reach site; 29 to reach max parameters
(DEF) Q1000	6.22	0.83	Flood – Free	0- 0.45 (mean of 0.07)	0- 1.44	27 hours to reach site; 29 to reach max parameters
(DEF) Q1000 + 30% CCA	6.84	0.00 – 1.453 (mean of 1.077)	0.59	0.007 – 0.586 (mean of 0.12)	0.787– 1.909, with an average rating of 1.60	16 to reach site; 19.25 to reach max parameters
(DEF) T200	N/A	Flood – Free	Flood – Free	N/A	N/A	N/A
(DEF) T1000	N/A	Flood – Free	Flood – Free	N/A	N/A	N/A
(DEF) T200 + 30% CCA	N/A	Flood – Free	Flood – Free	N/A	N/A	N/A
(DEF) T1000 + 30% CCA	6.05	0.00 – 0.658 (mean of 0.33)	Flood – Free	0.00 – 0.431 (mean of 0.09)	0.00 – 1.40 (mean of 1.1)	16.5 to reach site; 17.5 to reach max parameters

AEP Modelled Scenario	Max Design Flood Level (m AOD)	Max Flood Depths (m) under existing levels	Max Flood Depths (m) assuming an FFL of 6.25 m AOD	Max inundation Velocity (m/s)	Hazard Rating	Speed of Inundation (hours)
(UND) Q100	6.78	1.39	0.53	0.56 (mean of 0.11)	0.68 – 1.19	15 hours 20 minutes to reach site; 19 hours 10 minutes to reach max parameters
(UND) Q100 + 30% CCA	7.18	1.79	0.93	0.57 (mean of 0.17)	1.34 – 2.37	14 hours 30 minutes to reach site; 18 hours to reach max parameters
(UND) Q1000	7.46	2.06	1.24	0.9 (mean of 0.28)	1.49- 3.44	14 hours to reach site; 17.8 hours to reach max parameters
(UND) Q1000 + 30% CCA	7.68	2.29	1.43	1.58 max (mean of 0.24)	1.63- 4.91	13.5 hours to reach site; 17.2 hours to reach max parameters
(UND) T200	N/A	Flood- Free	Flood- Free	N/A	N/A	N/A
(UND) T1000	5.54	0.15	Flood- Free	0.003	0.00 – 0.58	22.5 hours to reach site; 31 hours to reach max parameters
(UND) T200 + 30% CCA	6.16	0.78	Flood- Free	0.53 (mean of 0.08)	0.5 – 1.42	16.5 hours to reach site; 19.5 hours to reach max parameters
(UND) T1000 + 30% CCA	6.55	1.16	0.3	0.66 (mean of 0.195)	0.55 – 1.68	16 hours to reach site; 17.5 to reach max parameters

****It should be noted that for those scenarios that are shown to be ‘flood-free’ assuming an FFL of 6.25 m AOD; the final 3 columns (V_Max, ZuKO, and speed / time of inundation) do not apply as in theory and based upon the modelled results they will remain flood free***

Although, and based upon the modelled results, the site and residential units could potentially flood by in excess of 600mm; this is only in the *Undefended* scenarios. These scenarios indicate how the site would likely flood in the hypothetical case that the site is not served by and does not benefit from critical flood management infrastructure and defences. **Refer to Table 3 & 4, above and Mapped Modelled Outputs (Appendix C).**

Section 6.8 of TAN15 states that Planning authorities must recognise the presence of protection measures does not eliminate risk completely and that certain developments are more vulnerable than others. Land protected by defences can be extremely vulnerable in the event of overtopping or breach because of the speed of flooding in such circumstances. In addition, flood water can carry a significant amount of debris, which has the potential to cause blockage at structures. Where appropriate, the Flood Consequences Assessment should demonstrate that in the event of overtopping, breach or blockage the consequences of flooding can be managed to an acceptable level. This will be needed for sites that benefit from the type of defences that can be breached or blocked, including flood embankments, sea walls and culverts.

There are no Breach or Blockage (event) grids within the Product 6 Data. Therefore, and as the next best-possible information, the Undefended events data has been analysed to give a conservative idea of the potential consequences of any critical hypothetical storm event that would occur so as to cause failure of



the existing critical flood management infrastructure and defences to effectively *fail*; or, which comfortably exceeds the capacity of the existing infrastructure and what it has been designed to accommodate / manage.

The critical flood defence and management infrastructure that the site benefits from and which serve the wider localised area are NRW managed assets which are listed as being in *Fair – Good condition*. It is anticipated that the existing infrastructure and defences will be maintained and enhanced in line with current and future climate change predictions and forecasts including the potential impact on flood risk. It is anticipated that the existing defences and infrastructure can and will provide the area (including the site) with the design standard of protection (SOP), at least over the course and lifetime expectancy of the proposed development (100-years / 2125).

Given the distance of approximately 900 m / 1.4km between the site and the River Afan / Sea (potential sources of flooding, respectively); the intervening topography / third-party land; and also, the fact that the site is at the outer limit of the assessed westerly flood extents - then the likelihood of these critical 1 in 1000 AEP + CCA events occurring at the is **Low**. Furthermore, the time windows for safe evacuation following a Flood Alert and / or Flood Warning are sufficient and realistic.

It can be concluded that the risk of flooding to the site and proposed development from Fluvial and / or Tidal sources is considered to be **Low** when taking into consideration the formal flood defence and management infrastructure coupled with the proposed FFLs of 6.25 m AOD. The potential and inherent associated consequences in the extreme modelled events are deemed acceptable and manageable across the lifetime expectancy (100-years) of the proposed development, including appropriate assessment and consideration of climate change allowances and potential impacts on flood risk. The potential and inherent consequences of such events as outlined in this report are deemed to be acceptable and manageable across the development's lifetime expectancy of 100-years. They are also within the tolerable thresholds stipulated in **Table 2**.

4.3 Surface Water & Small Watercourses (Pluvial)

Surface water (or pluvial) flooding occurs when rainwater does not drain away through the normal drainage system or soak into the ground. It is usually associated with high intensity rainfall events but can also occur with lower intensity rainfall or melting snow where the ground is saturated, frozen or developed, resulting in overland flow and ponding in depressions in topography. Surface water flooding can occur anywhere without warning. However, flow paths can be determined by consideration of contours and relative levels.

The FMfP 'Surface Water and Small Watercourses' Map indicates that the site is in **Flood Zone 1**.

It can be concluded that the risk of pluvial flooding to the site and proposed development is **Low**.

4.4 Sewer Flooding

Flooding from sewers can occur when a sewer is overwhelmed by heavy rainfall, becomes blocked, is damaged, or is of inadequate capacity. This can occur if there is a blockage in the network causing water to back up behind it or if the sheer volume of water draining into the system is too great to be handled. Sewer flooding tends to occur sporadically in both location and time. As such, any inundation flows emitting from / breaching the local sewer network would be confined to the highways around the development before either re-entering the water cycle via evapotranspiration, flow away from the site following the natural fall in topography, be absorbed by local surface water drainage infrastructure as and where the capacity of the system is recovered.

Neath Port Talbot County Borough Council Flood Risk Management Strategy states that there has been a total of 430 sewer flooding events recorded by the water companies within Neath Port Talbot, of which 355



properties were identified as being at 'high-risk', with 34 suffering from internal flooding. One notable event occurred at Victoria Road approximately 1km from the site. However, due to the topography and distance between Victoria Road and the site, it is unlikely sewer flooding could or would travel to the site, from here.

It can be concluded that the risk of sewer flooding to the site is **Low**.

4.5 Groundwater Flooding

Groundwater flooding occurs when water levels underneath the ground rise above normal levels. Prolonged heavy rainfall soaks into the ground and can cause the ground to become saturated. This results in rising groundwater levels which leads to flooding above ground.

The majority of the existing / proposed development site will be overlain by hardstanding, thus; preventing the ingress of groundwater to the surface.

The Neath Port Talbot County Borough Council Flood Risk Management Strategy, states that 'there are no specific areas of groundwater flooding recorded in the Neath Port Talbot area'.

It can be concluded that the risk of groundwater flooding is **Low**.

4.6 Artificial Sources of Flooding

There are no canals or other artificial / man-made surface water bodies within the immediate vicinity of the site or surrounding area which could or would pose a flood risk to the site.

The NRW 'Risk of Flooding from Reservoirs' map shows that the site is not at risk of flooding from reservoirs. The risk of flooding from reservoirs is extremely unlikely to happen. For instance, all large reservoirs must be inspected and supervised by a reservoir panel engineer, as the enforcement agency the NRW ensure that reservoirs are inspected regularly, and essential safety / maintenance work is carried out.

Therefore, it can be concluded that the probability of flooding from artificial sources is **Low / Residual**.

4.7 Justification Test

Much urban development in Wales has taken place alongside rivers and in the coastal plain. It is therefore inevitable, despite the overall aim to avoid flood risk areas, that some existing development will be vulnerable to flooding and fall within Flood Zone 3. Some flexibility is necessary to enable the risks of flooding to be addressed whilst recognising the negative economic and social consequences if policy were to preclude investment in existing urban areas, and the benefits of reusing previously developed land. Further development in such areas, whilst possibly benefiting from some protection, will not be free from risk and could in some cases exacerbate the consequences of a flood event for existing development and therefore a balanced judgement is required.

New development should be directed away from Flood Zone 3 and towards suitable land in Flood Zone 2, otherwise to Flood Zone 1, where river or coastal flooding will be less of an issue. In zones 2, 3 and TAN 15 defended zones developers must undertake a Flood Consequences Assessment (FCA) proportionate to the nature and scale of the proposals. It can be concluded that the depth and detail contained within this FCA is commensurate with the scale and nature of the proposals.

Before granting planning permission, decision makers should be satisfied the scheme is justifiable in accordance with the principles set out in Section 8. Where they are not satisfied, planning permission should be refused. In these zones, Planning Authorities should seek all opportunities to provide enhanced flood protection for existing communities at risk.



As per section 10.17 of TAN15 (2025), on brownfield sites, redevelopment should not over-intensify use neither should they reduce the area's ability to absorb floodwater nor cause problems with flooding elsewhere. All applications should consider opportunities to incorporate flood resilient design as appropriate and any proposal involving highly vulnerable development must be compliant with the tolerable conditions set out in section 11.

The proposals won't have any bearing on the capacity of the defences and scope for alternative development is limited, here. The proposals are in keeping with the character and land use occupancy of the surrounding local area.

The proposals will help contribute towards the LDPs targets in terms of provision of accommodation including affordable housing.

The site concurs with the aims of PPW and meets the definition of previously developed land (redevelopment) and the potential consequences of a flooding event for the particular type of development have been considered, and found to be acceptable.

The site and proposals are in alignment with the policies, aims and objectives within the LDP including its definition of *Sustainable Development*.

These amendments and the provision of additional information, data and figures presented and reported within this FCA, are sufficient to appease and overcome any outstanding concerns and / or objections to the proposals from either NRW or the LFFA, with regards to flood risk to the proposed development and over its lifetime expectancy (100-years).

5 FLOOD RISK MITIGATION MEASURES & RECOMENDATIONS

5.1 Flood Risk Mitigation

The existing site is currently at **High** - risk of flooding, only in the event of critical flood risk management infrastructure and flood defences failing or being 'exceeded' (i.e. a storm event occurs which surpasses the SOP of the flood defences constituting the **TAN15 Defended Zone** (Rivers and Sea), here.

Also, the site, in its current arrangement is at **Medium – High** risk of flooding during the most critical and extreme modelled scenarios.

The predominant risks are Fluvial and Tidal.

The site is not *Greenfield*; it meets the definition of previously developed land, or, and therefore is *Brownfield*.

Following *re-development* of the site for residential dwellings and associated infrastructure, which will be at; **Low – risk** of flooding from Rivers and the Sea over the lifetime expectancy of the proposed development (100-years), including appropriate consideration and application of climate change allowances.

Rigorous adoption and compliance of the following mitigation measures (some mandatory), where possible, will ensure that this risk remains **Low / Residual**, and manageable.

External alterations to properties and buildings such as commercial flood guards (barriers) are available and should be fitted to doorways. They can be applied and removed as and when by site owners / users and can provide a protection and freeboard to inundation waters of up to 0.6m and will help prevent the ingress of



water to properties thus minimising and avoiding internal damage. Other products which would protect the dwellings from inundation and which should be considered include flood fences, flood doors and air bricks.

Additional *internal* alterations that should be introduced where practically possible to the building aspects of the proposed development include:

- Raised electronic control units and sockets;
- Install smart air bricks or air brick covers;
- Provide low level flood guards on all access points;
- Use plastic and stainless-steel fixtures and fittings and avoid wooden alternatives;
- Use solid flooring (tiled, resin, concrete) at lower ground level, where possible;
- Ensure that with the time afforded by advance warning, evacuation of property via safe egress and removal of valuables from the building can be implemented;
- Clearance of the existing surface water drainage system to improve drainage of the site and follow necessary maintenance procedures (to new and existing surface water drainage) to ensure that the system functions to optimum capacity.

All construction methods to be inherently flood resilient as and where possible. ***Refer to the BS 85500: 2015, Flood resistant and resilient construction. Guide to improving the flood performance of buildings*** (November 2015).

Flood Alerts (Rivers Afan and Kenfig) and Flood Warnings (River Afan at Port Talbot) cover this area (Refer to Appendix D). Site owners and residents should register to receive Flood Alerts and Flood Warnings. Flood Warnings Direct is a free service that provides prior warnings of a fluvial flood event. Areas at risk of flooding from rivers (fluvial) and the sea (tidal) are warned, which relies on direct measurements of rainfall, river levels, tide levels, in-house predictive models, rainfall data and information from the Met Office. This service operates 24 hours / day 365 days a year. If flooding is forecast, warnings are issued using a set of easily recognisable codes.

Appropriate documentation should be displayed to inform any users of the site of the potential flood risk. Documentation will be displayed at an appropriate position. The documentation will indicate the risk of flooding and contain information on how prior warnings will be sent. Further information on the documentation will comprise of the Floodline Warnings Direct telephone number, emergency services numbers and exit plans and egress directions, as identified in the evacuation procedure for the site.

The site owner should undertake a Flood Evacuation Management Plan (FEMP) for implementation during an extreme event. This should be done in conjunction with the appropriate professional bodies including and in particular Neath Port Talbot Emergency Planning Department. The FEMP should be a written document which should outline the course of action to all occupants during a flood.

The evacuation procedure should address (but not be limited to) the following topics:

- A list of important contacts, building services, suppliers and evacuation contacts for officers and users;
- A description or plan showing locations of key property, protective materials and service shut-off points;
- Basic strategies for protecting property and assisting recovery;
- Checklist of procedures that can be quickly accessed by users during a flood;
- Safe exit-plan (building and site);
- Safe exit route to higher ground outside the flood risk area (building and site), kept and displayed on site.



Flood proofing measures should be incorporated as far as is practically possible. It is proposed that any new building elements will be constructed from materials with inherently good wet proofing performance. Wet proofing is the use of more flood resistant building materials in the floors, walls and doors.

Proper observation and implementation of these Mitigation Measures and Recommendations will mean that the risks and associated consequences of flooding to the site are acceptable, manageable and residual across the lifetime expectancy of the development (100-years). The developer wholly accepts the risks and potential consequences of flooding, as outlined in this report and which are deemed to be acceptable, tolerable and manageable across the lifetime expectancy of the development.

5.2 SAB

The site and proposed development will be subject to a successful SAB Application to ensure that surface water is managed effectively, efficiently and at its source in line with guidelines and regulations as per Welsh Government Standards for SUDS. The proposed surface water drainage strategy will be in line and accordance with national, regional and local standards, policy, guidance and legislation.

5.3 Access and Egress

Safe access / egress is provided by heading initially north along Rhodes Avenue and the southwest along Ffordd Baglan towards Victoria Park which provides an area of safe refuge which is outside the extreme flood extents for all sources considered; is away from the potential sources of flooding and toward higher ground. An alternative refuge can be found by heading towards the Neath Port Talbot Hospital grounds, located immediately to the west of the site. This area is at a significantly higher elevation than the surrounding land, providing safe refuge for occupants during a flood, as well as a large, designated space for residents in the Rhodes Avenue area. Evacuation should only be undertaken if safe to do so and sufficient time is allowed between the receipt of Flood Alerts / Warnings and inundation of the site, for evacuation / safe refuge to be sought. **Refer to Figure 4, below.**

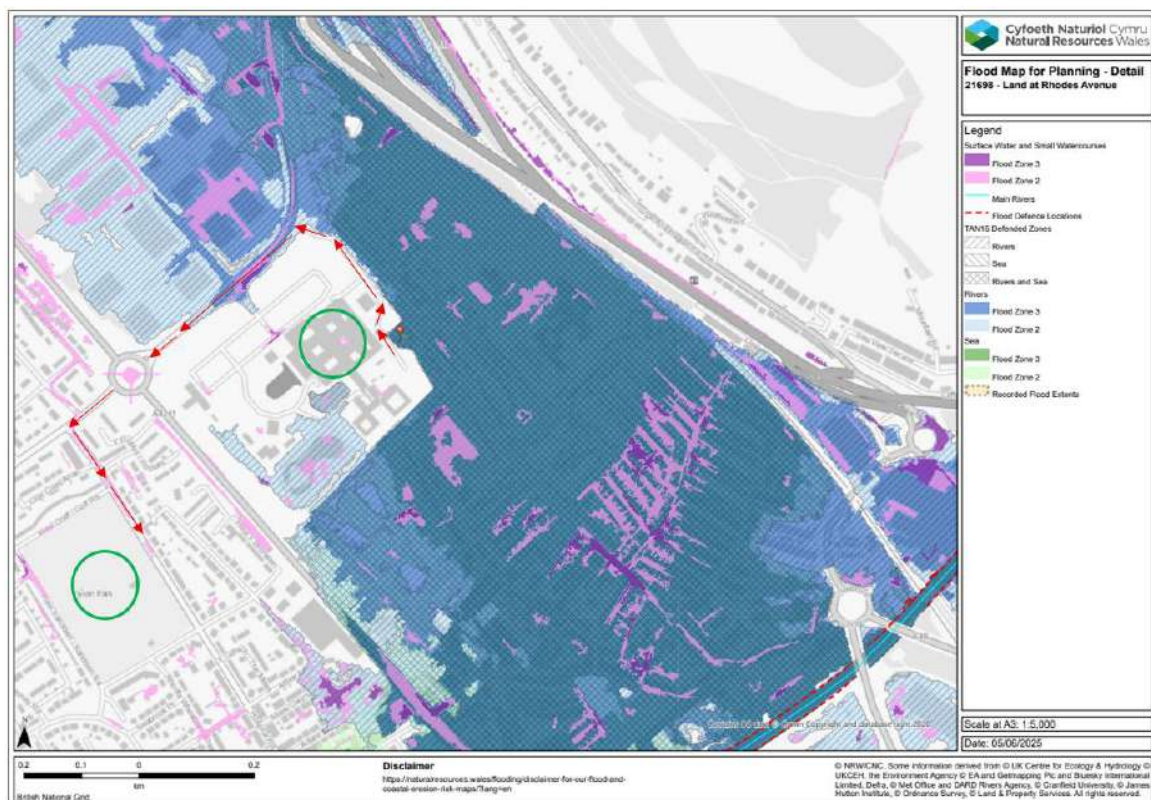


Figure 4: Proposed and Potential Flood Evacuation Route Plan (Depicted by Red Arrows)



5.4 Safe Refuge and Flood Procedure

In the unlikely event that the site floods the competent warning authority is NRW and a lead time of several hours in advance of flooding is typically provided, excluding potential breaches of defences. When a flood is expected NPT council and the local emergency services will be responsible for public care and safety.

In the event of the site flooding before site users have an opportunity to evacuate via the route specified - the occupants should seek refuge on the upper floors as and where possible until flood waters have receded and it is safe to evacuate the site.

The adjacent Hospital could provide safe refuge to evacuees during the event of the local community flooding.

5.5 Flood Alleviation Schemes

NPT Council has approved consultations on a new flood risk management strategy for the area to reduce the risk of flooding to both local communities and businesses. The early stage plan was approved at a special cabinet meeting held by the authority on December 11, where members were given details of the scheme which aims to protect the county borough from flooding over the next 6 -7 years.

The plans says while it will not be possible to prevent all flooding in the area, as rainfall events become more “unpredictable, intense, and frequent” it will take a more pro-active approach to managing the risks.

This includes a number of steps such as the development of sustainable drainage systems, the maintenance of flood defence and conveyance assets, and the implementation of early warning systems – with a focus also put on developing community resilience.

It will also see the council continuing to provide a 15% contribution to construction costs for flood alleviation schemes and small scale works, as well as a 25% contribution for the construction of any coastal projects.

A section of the plan read: “This Local Flood Risk Management Strategy and Plan sets out how we intend to deal with flood risk from surface water, ordinary watercourses, and groundwater within the Neath Port Talbot County Borough Council.

“It describes how we, as the Lead Local Flood Authority (LLFA) will mitigate the risk of flooding to local communities and businesses across the county, with the aim to improve resilience to our communities, infrastructure, and the wider environment.”

Shoreline Management Plan (SMP)

The site falls within SMP 20 – Lavernock Point to St Ann’s Head.

The intent is to maintain and upgrade existing defences as necessary to protect the large number of socio-economic assets at risk and to prevent release of potentially contaminated fill into coastal zone.

Although the site is previously developed; there are no issues relating to previous uses and / or the potential for contaminated ground. Furthermore, the proposed development, although HVD, does not pose any pollution / contamination risks in the event of any potential inundation of the site.

5.6 Finished Floor Level (FFL)

The FFL of the proposed dwellings will be **6.25 m AOD**. This is appropriate and necessary to mitigate flood risk and also to achieve compliance with TAN15.



To achieve this; re-profiling of the site will be undertaken to ensure that all dwellings can achieve a minimum FFL of 6.25.

The re-profiling of the site will ensure level and volume compensation of any existing floodplain extent / storage that may be deemed to have been lost as a result of the proposed development. This will ensure that no increase in flood risk elsewhere or to third party land.

It will also ensure that all plots, access and associated infrastructure will remain flood – free in all defended modelled scenarios except for the defended Q1000 event plus 30% CCA which could cause flooding of up to 590mm. In contrast; other areas across the site will provide storage (essentially will be ‘allowed’ to potentially flood during extreme events. It should be stressed that these depths should be shallow and below the 600m freeboard stated in Table 2.

Potential / hypothetical provision of flood compensation storage is outlined below, including potential inundation displacement calcs.

5.7 Flood Risk Elsewhere

In accordance with TAN15, developers must ensure that that will be no loss of flood flow or flood storage capacity for floods up the 1 in 1000 AEP event. Whilst not specified by TAN15, Natural Resources Wales generally recommends that this should be the case over the lifetime of development (i.e. should take into account climate change and should consider breach and blockage where necessary.

The new proposed overall building footprint is 390 m². However, the existing building on the site is being removed, therefore the new (additional) building footprint is 75 m² in reality. The proposed residential development where FFLs are to be raised to 6.25 m AOD is located to the north of existing residential properties and east of the hospital. The existing modelling does not represent the buildings and walls and instead uses a “bare earth” representation.

Potentially displaced volumes of floodwater during the following defended events:

Def Q100 + 30% CCA: $0.08\text{m} \times 75 = 6\text{m}^3$

Def Q1000: $0.83\text{m} \times 75 = 62.25\text{m}^3$

Def Q1000 + 30% CCA: $1.07\text{m} \times 75 = 80.25\text{m}^3$

Def T1000 + 30% CCA: $0.33\text{m} \times 75 = 24.75\text{m}^3$.

When these basic hydraulic calculations are ‘reversed’ (i.e. divided by the total site area) then the following increase in average depths could occur, across the site:

0.003m

0.03m

0.04m

0.012m.

These are relatively insignificant and all and any potential inundation waters would be contained within the site boundary.

Furthermore and moreover; the hydraulic model is a catchment wide complex assessment and therefore not always appropriate or accurate for specific cite assessments.

The hospital is located at much higher levels so flood water would not be displaced here anyway, even if projected displaced values were of any significant (which they are not). The properties to the south / east



are separated by an existing wall which would prevent displaced waters, here (although again; no significant values).

The potential flood displacement/loss of storage during the undefended modelled scenarios has been considered, however these are considered as overly-conservative and be subject to failure of flood management infrastructure across the whole length of defences. The defences are NRW maintained and will continue to be analysed and maintained over the lifetime of development in line with climate change projections.

Based on a review of a topographical data; any displaced floodwaters would likely be conveyed east / southeast towards the site access and egress. Refer to Figure 5, below which indicates (using LiDAR data) the potential likely flow conveyance within the site, if it were to completely flood (unlikely) and which as demonstrated via this report would only occur if critical flood management infrastructure and defences were to fail and / or an extreme unprecedented event in which much of the surrounding localised area would be completely inundated.

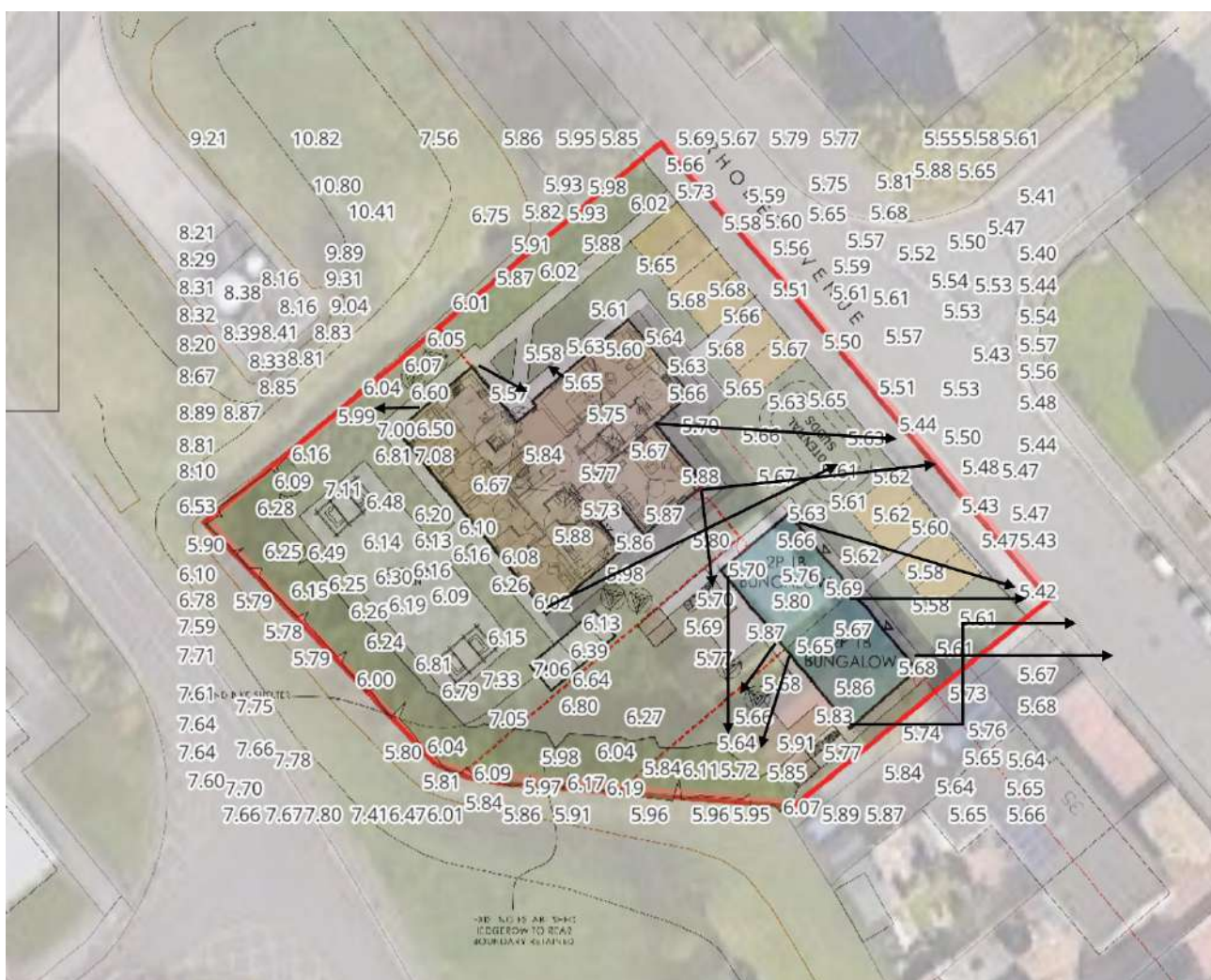


Figure 5: Potential flow conveyance routes during an extreme event of if the site were to completely flood based on 1m resolution LiDAR Digital Terrain Model.



6 CONCLUSIONS

Vale Consultancy has been instructed by *CJ Construction* to prepare a Flood Consequences Assessment (FCA) report to accompany a planning application for the proposed redevelopment of Land at Rhodes Avenue, Aberavon, Neath Port Talbot (“The Site”) for residential use.

The application site currently comprises of a single storey detached former changing rooms building, with hard standing to the front and vegetation to the rear. Provision of site access / egress is from Rhodes Avenue. In its existing state – the site is disused and dilapidated and in need of re-development. The site is in an area surrounded by HVD (i.e. residential, emergency services and a school).

A minimum FFL of **6.25 m AOD** should be adopted for the residential units to ensure that they do not flood internally (will remain flood-free) during all defended modelled scenarios except for the defended Q1000 + 30% CCA event which could potentially cause a maximum inundation depth of 0.59m.

To achieve this; some re-profiling of the existing site levels will be required. This is because; in its existing state and arrangement; the site and proposals could fail certain elements of TAN15 (2025).

Minor reprofiling of the site can be achieved without increasing potential flood risk elsewhere. No third-party land / infrastructure will be affected as a result of the proposals.

Further raising or re-profiling is considered to be impractical and unrealistic in line with the proposals.

The proposals will meet the criteria set out in TAN15.

Given the distance of approximately 900 m / 1.4km between the site and the River Afan / Sea (potential sources of flooding, respectively); the intervening topography / third-party land; and also, the fact that the site is at the outer limit of the assessed westerly flood extents - then the likelihood of these critical 1 in 1000 AEP + CCA events occurring at the site is **Low**. Furthermore, the time windows for safe evacuation following a Flood Alert and / or Flood Warning are sufficient and realistic.

It can be concluded that the risk of flooding to the site and proposed development from Fluvial and / or Tidal sources is considered to be **Low** when taking into consideration the formal flood defence and management infrastructure coupled with the proposed FFLs of 6.25 m AOD. The potential and inherent associated consequences in the extreme modelled events are deemed acceptable and manageable across the lifetime expectancy (100-years) of the proposed development, including appropriate assessment and consideration of climate change allowances and potential impacts on flood risk. The potential and inherent consequences of such events as outlined in this report are deemed to be acceptable and manageable across the development's lifetime expectancy of 100-years.

Rigorous adoption and compliance of the following mitigation measures (some mandatory), where possible, will ensure that this risk remains **Low / Residual**, and manageable.

No increase in flood risk elsewhere will occur as a result of the proposals. No third-party land / infrastructure will be affected as a result of the proposals.

The depth and detail of the FCA is commensurate with the scale and nature of the development proposals.

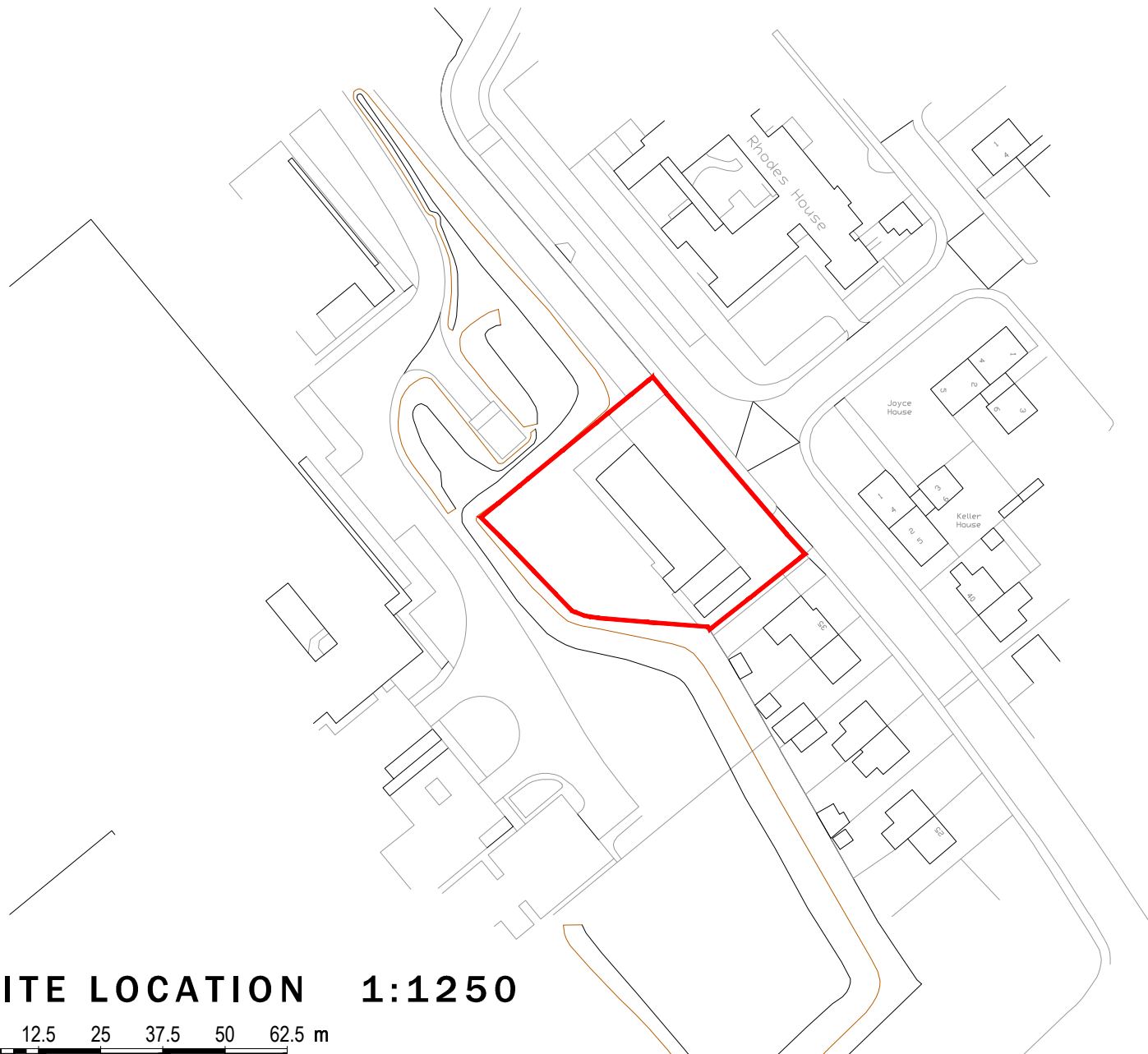


APPENDIX A:

Site Location Plan, Existing Site Plans
& DCWW Wastewater Asset Plan

SITE LOCATION 1:1250

0 12.5 25 37.5 50 62.5 m
SCALE 1:1250



Drawing Purpose
PLANNING

Revisions			
Client	Drawing No	Scale	Revision
C J Construction	LTS409.00.01	1:1250 @ A4	
Job Title	Drawing Title	Date	Checked
Rhodes Avenue, Port Talbot	Site Location Plan	Feb 25	KML

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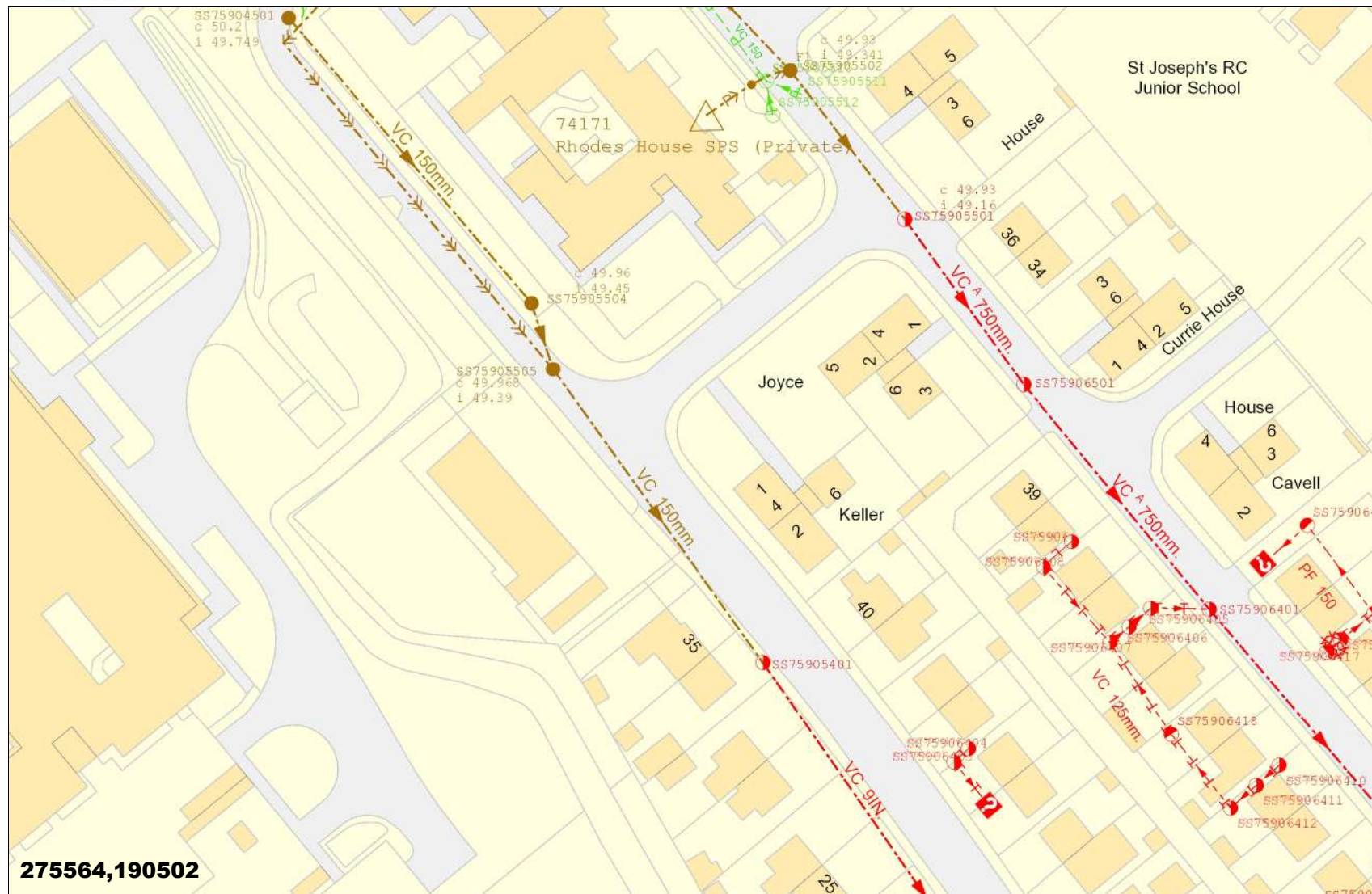
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02/06/2025



Scale: 1: 1051



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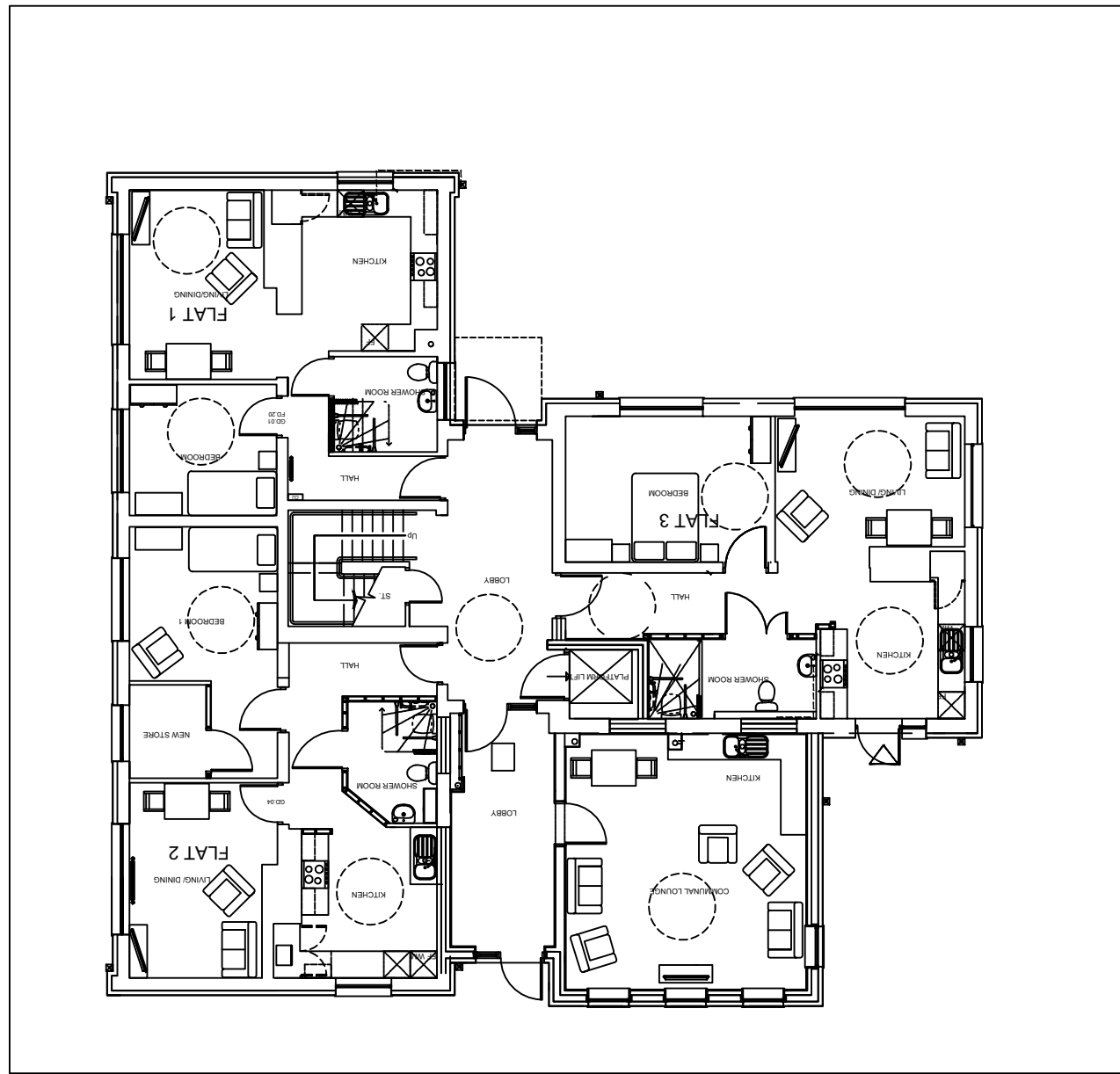
**EXACT LOCATION OF
ALL APPARATUS TO
BE DETERMINED ON
SITE**

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WU298565.

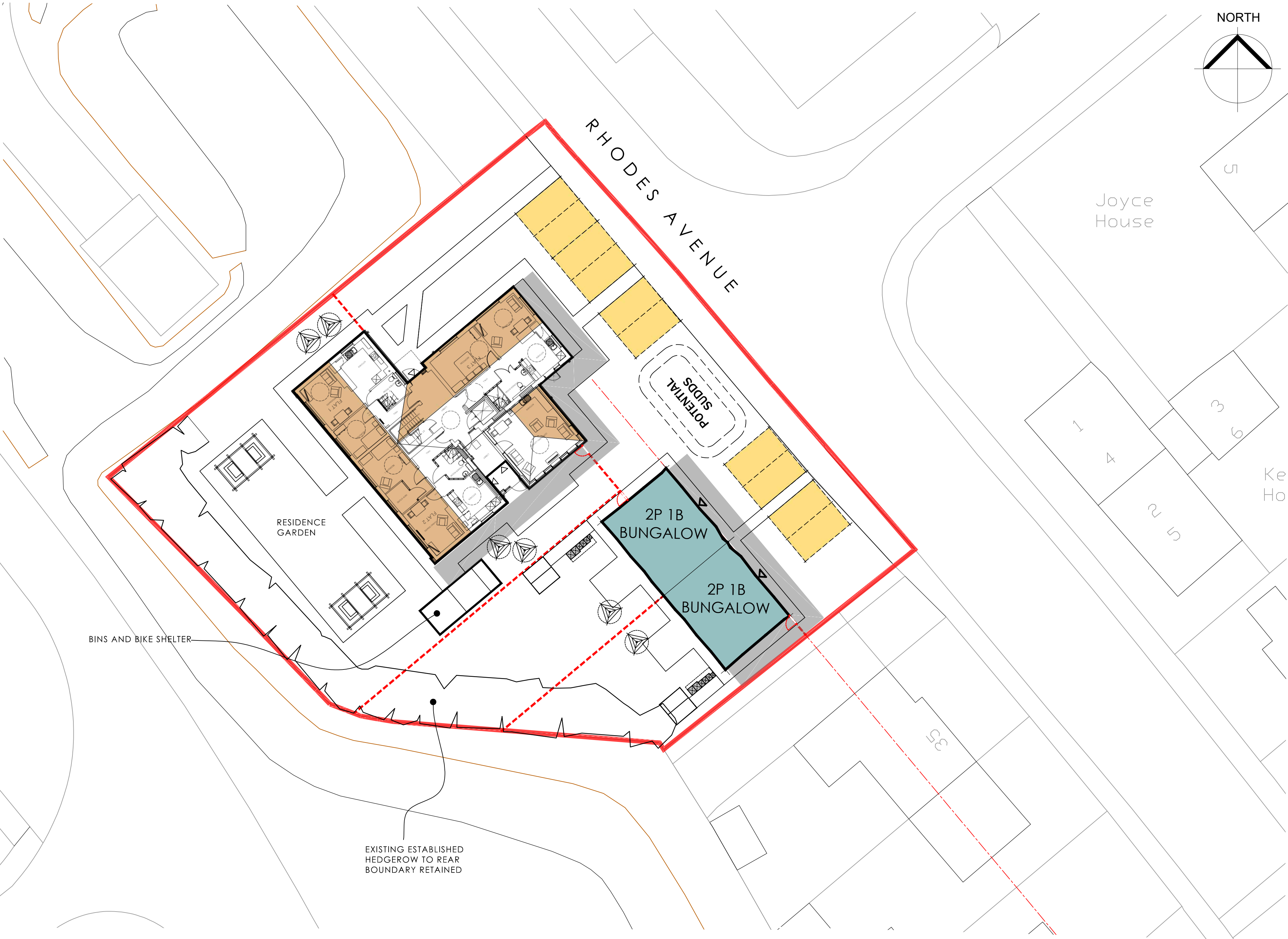
Whilst every reasonable effort has been taken to correctly record the pipe material of DCWW assets, there is a possibility that in some cases pipe material (other than Asbestos Cement or Pitch Fibre) may be found to be Asbestos Cement (AC) or Pitch Fibre (PF). It is therefore advisable that the possible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



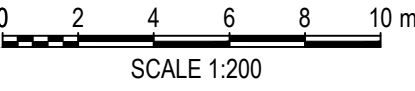
APPENDIX B:
Proposed Site Plans



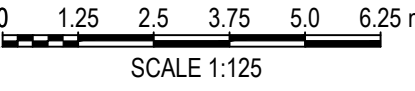
TYPICAL FLOOR PLAN
Scale 1:200



PROPOSED SITE LAYOUT
Scale 1:200



PROPOSED SITE LAYOUT
Scale 1:250



Do not scale from this drawing.
The users of this drawing shall check all
dimensions & report all errors and
omissions to LeTrucco Design.
This drawing is copyright. It must not be
copied, used or disclosed to third parties
without prior permission of LeTrucco
Design.

Revisions
REV. A FEB 25
LAYOUT UPDATED AND BUNGALOWS
ADDED AT CLIENTS REQUEST.
REV. B FEB 26
BUNGALOWS LAYOUTS UPDATED AND STREET
ELEVATIONS ADDED.

Drawing Purpose	Drawing No	Scale	Revision
FEASIBILITY	LTS405.03.01	1:200 @ A1	B
Client	Drawing Title	Date	Checked
C J Construction	Feasibility layout + Elevations	May 24	KML
Job Title	Rhodes Avenue, Port Talbot		



APPENDIX C:
Natural Resources Wales & Local Authority Model Outputs

Flood Map for Planning - Detail
Rhodes Avenue, Port Talbot

Legend

Surface Water and Small Watercourses

Flood Zone 3

Flood Zone 2

Flood Defence Locations

TAN15 Defended Zones

Rivers

Sea

Rivers and Sea

Rivers

Flood Zone 3

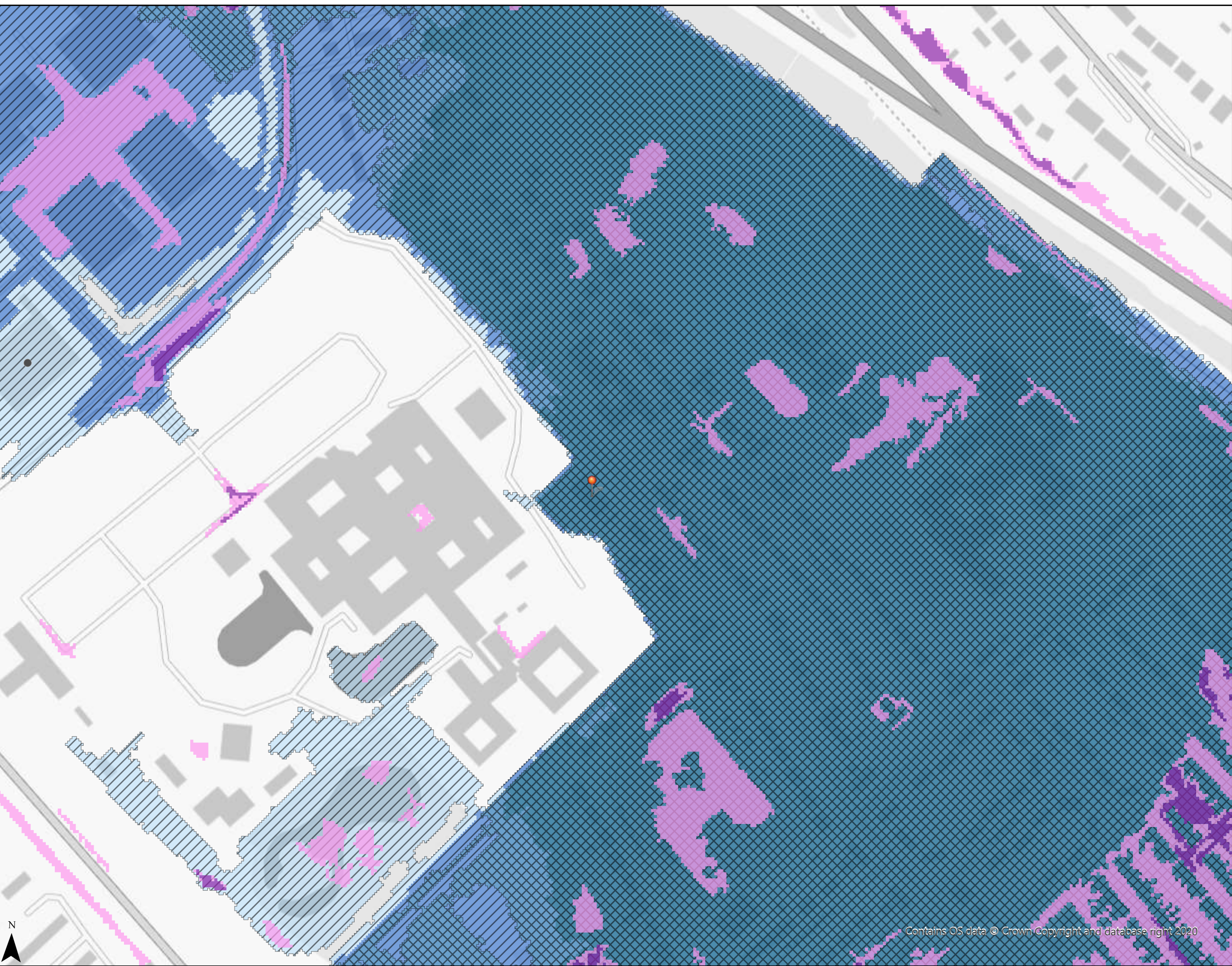
Flood Zone 2

Sea

Flood Zone 3

Flood Zone 2

Recorded Flood Extents



Contains OS data © Crown Copyright and database right 2020

Scale at A3: 1:2,500

Date: 19/03/2025

Disclaimer

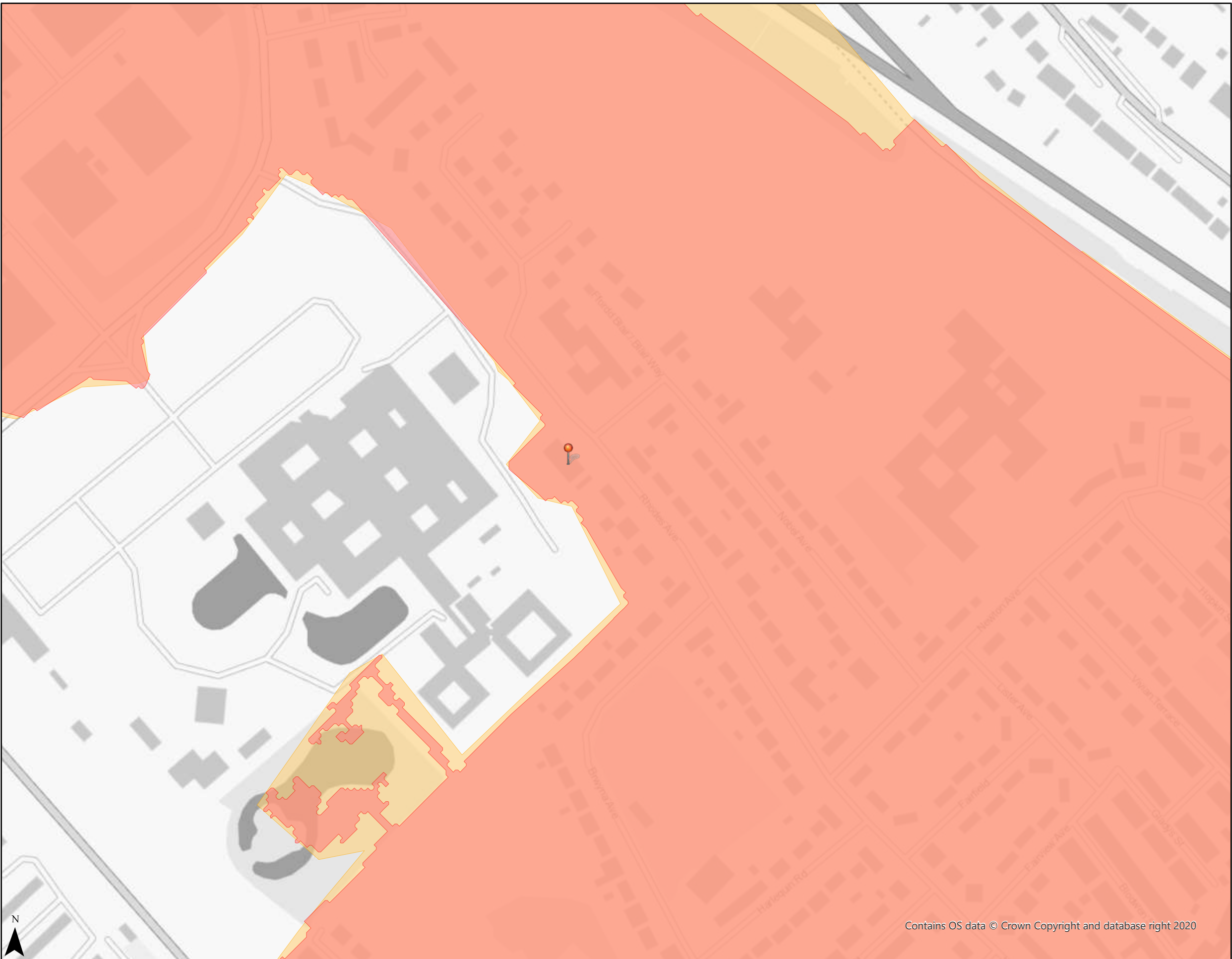
<https://naturalresources.wales/flooding/disclaimer-for-our-flood-and-coastal-erosion-risk-maps/?lang=en>

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Flood Warning and Alert Areas
21698 - Land at Rhodes Avenue

Legend

- Flood Warning Areas
- Flood Alert Areas



Contains OS data © Crown Copyright and database right 2020

Scale at A3: 1:2,500

Date: 06/06/2025

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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APPENDIX D:
Pre-Application Response & Other Relevant Correspondence

Port Talbot 2021 and 2022 Model Results

21698 - DEF_2116_Q0002_2122_T200 - DFLs



Port Talbot 2021 and 2022 Model Results

21698 - DEF_2116_Q0002_2122_T200 - Velocity



Port Talbot 2021 and 2022 Model Results

21698 - DEF_2116_Q0002_2122_T200 - Hazard



Port Talbot 2021 and 2022 Model Results

21698 - DEF_2116_Q0002_2122_T1000 - DFLs



21698 - DEF_2116_Q0002_2122_T1000 - Velocity



Port Talbot 2021 and 2022 Model Results

21698 - DEF_2116_Q0002_2122_T1000 - Hazard



21698 - DEF_2116_Q1000_MHWS - DFLs



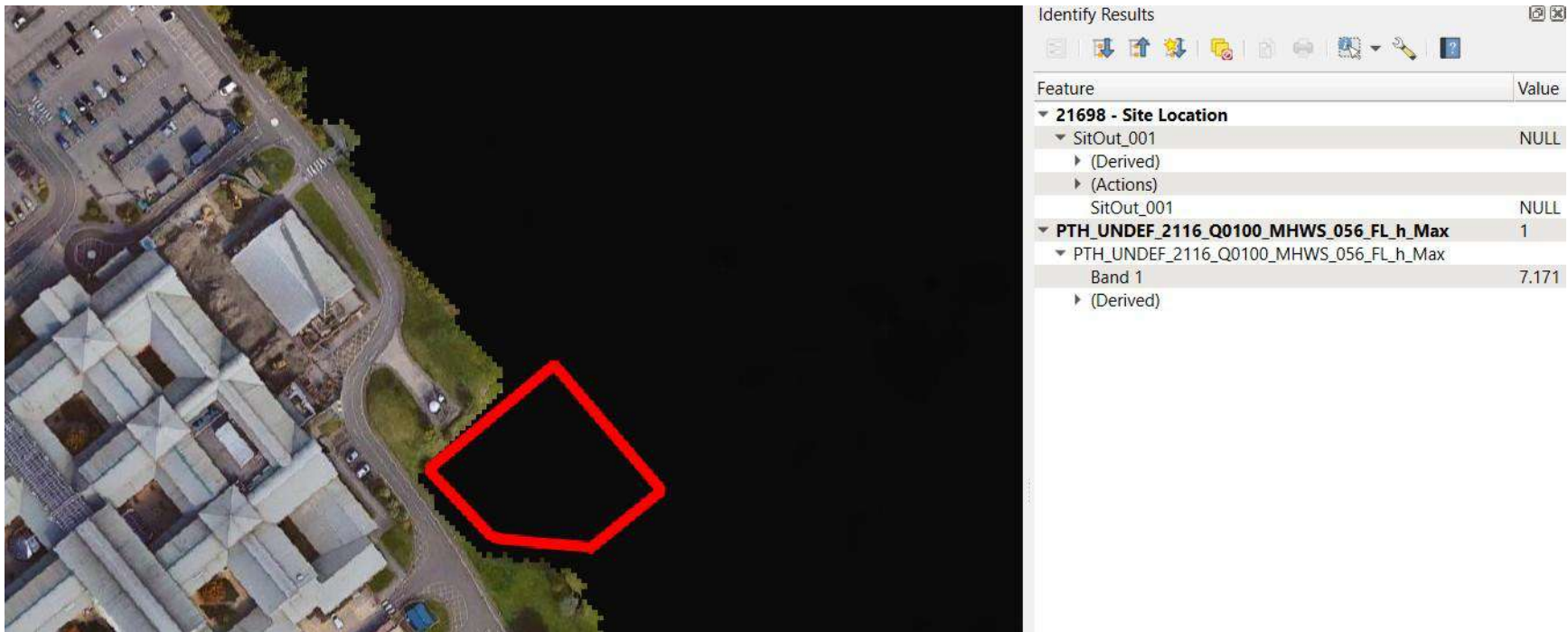
Port Talbot 2021 and 2022 Model Results
21698 - DEF_2116_Q1000_MHWS - Velocity



Port Talbot 2021 and 2022 Model Results
21698 - DEF_2116_Q1000_MHWS - Hazard



21698 – Land at Rhodes Avenue , Port Talbot

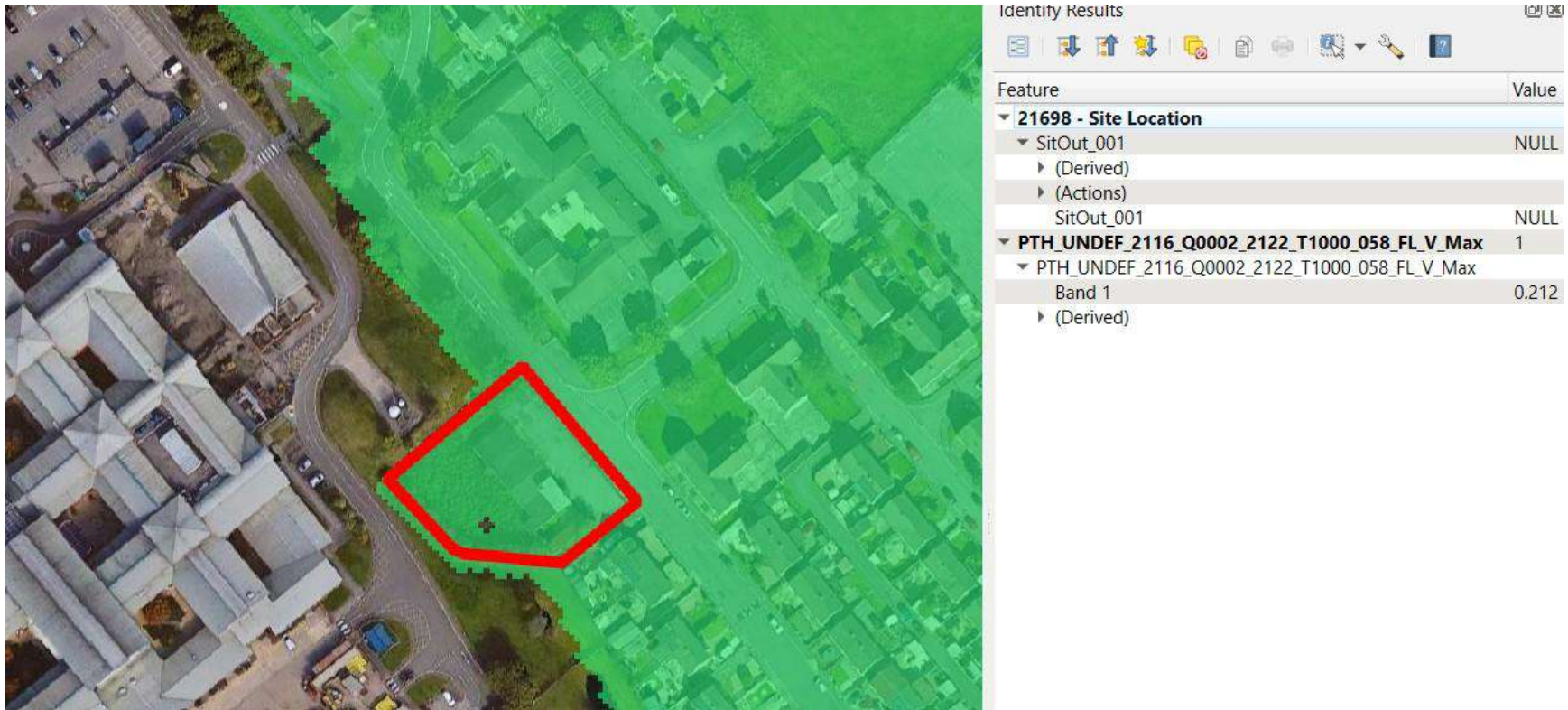


Mapped Modelled Outputs



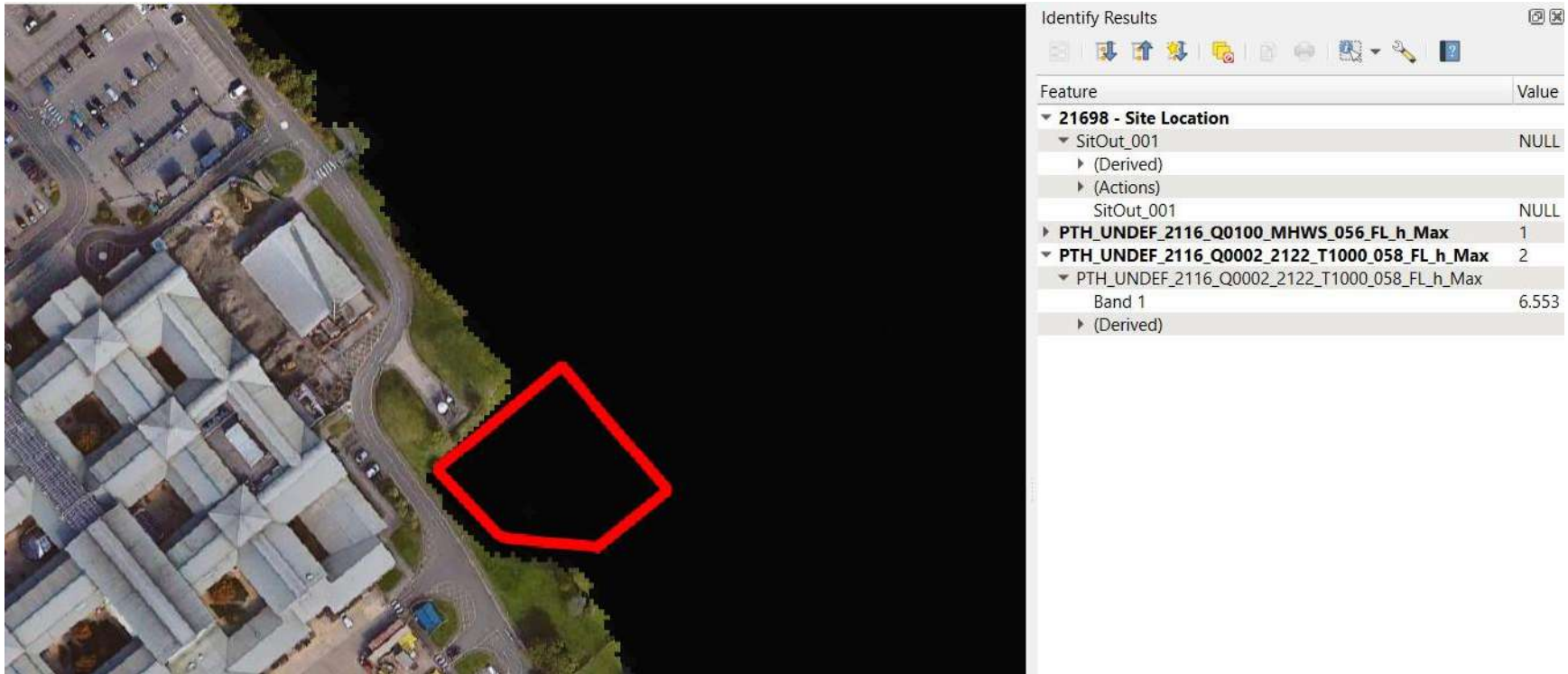
Mapped Modelled Outputs

21698 – Land at Rhodes Avenue , Port Talbot



Mapped Modelled Outputs

21698 – Land at Rhodes Avenue , Port Talbot



Mapped Modelled Outputs

21698 – Land at Rhodes Avenue , Port Talbot



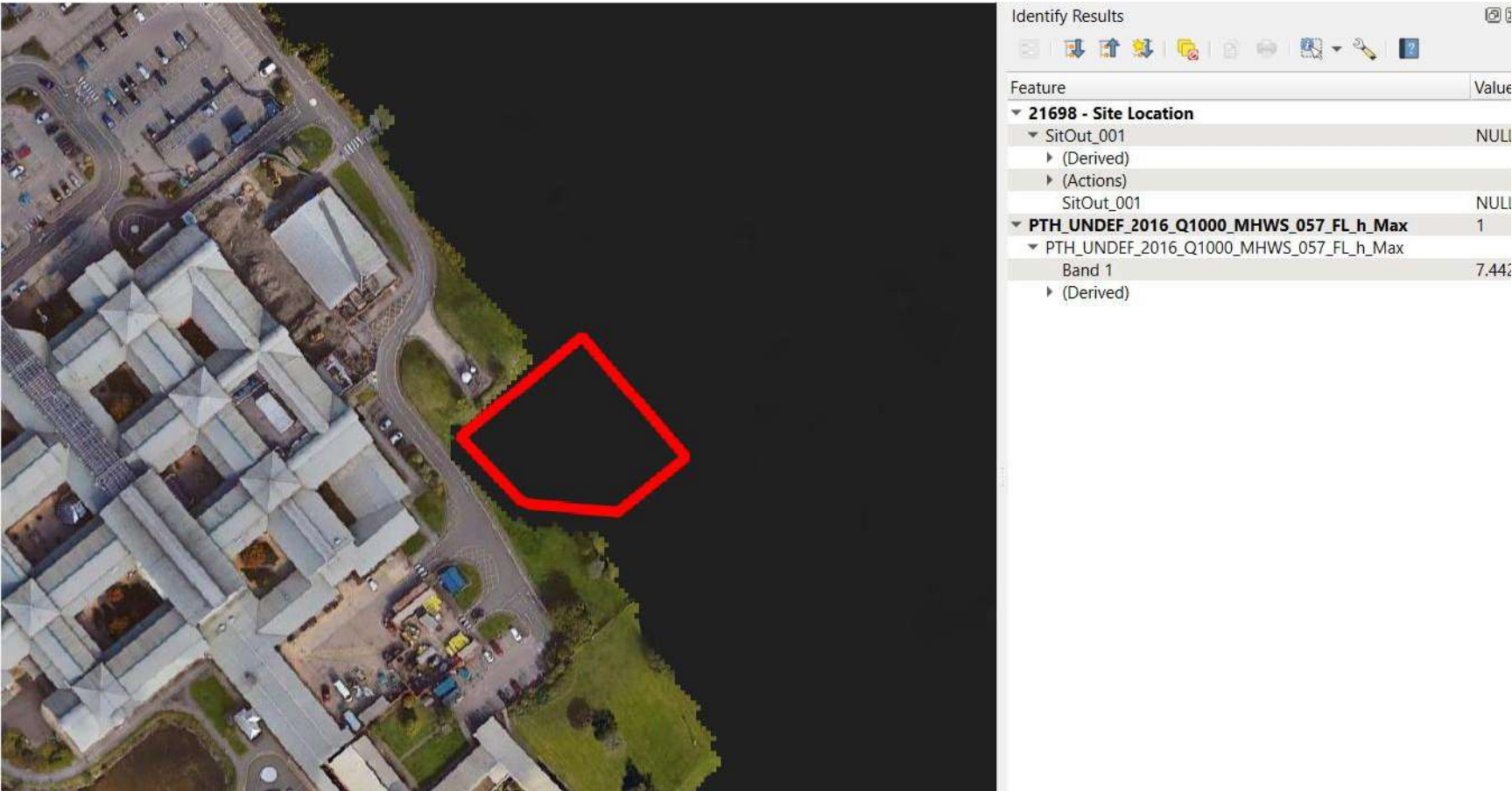
Mapped Modelled Outputs

21698 – Land at Rhodes Avenue , Port Talbot



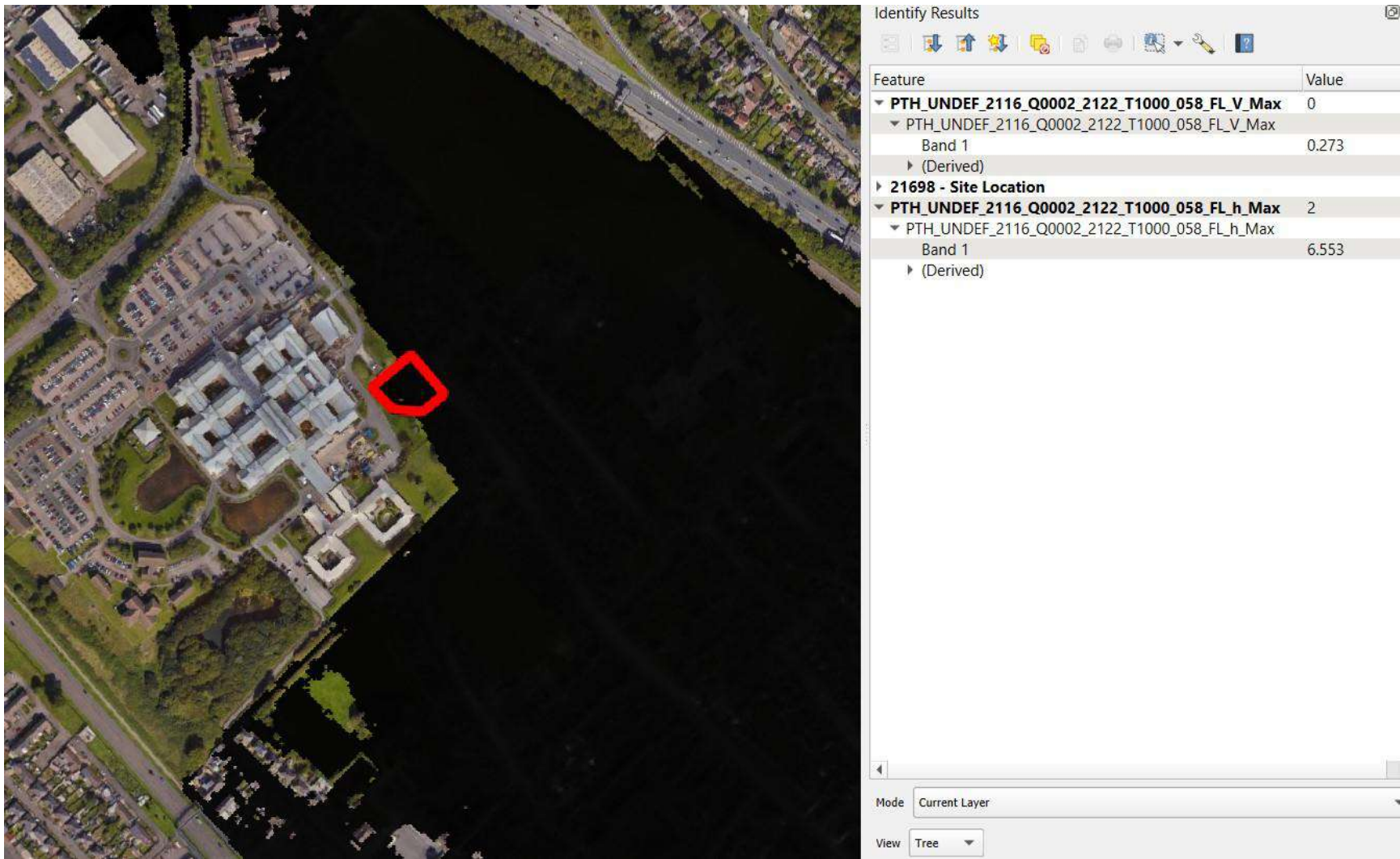
Mapped Modelled Outputs

21698 – Land at Rhodes Avenue , Port Talbot



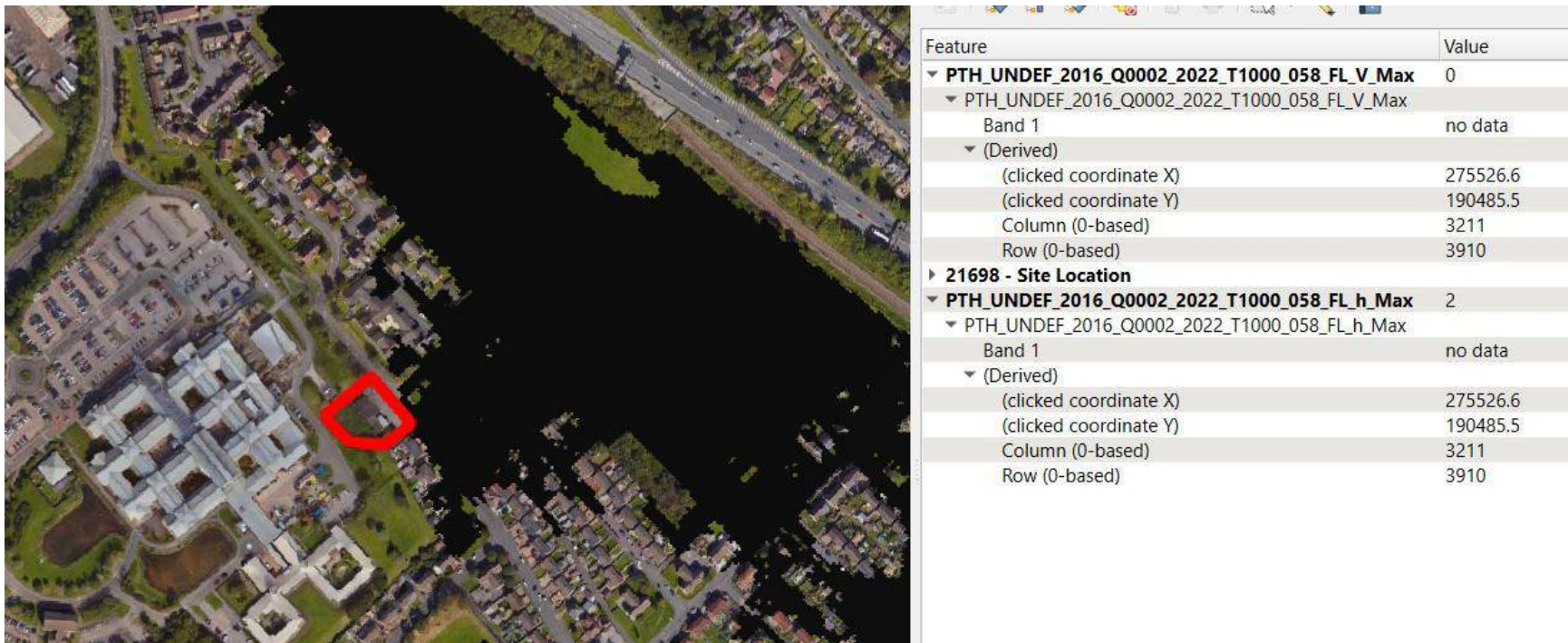
Mapped Modelled Outputs

21698 – Land at Rhodes Avenue , Port Talbot



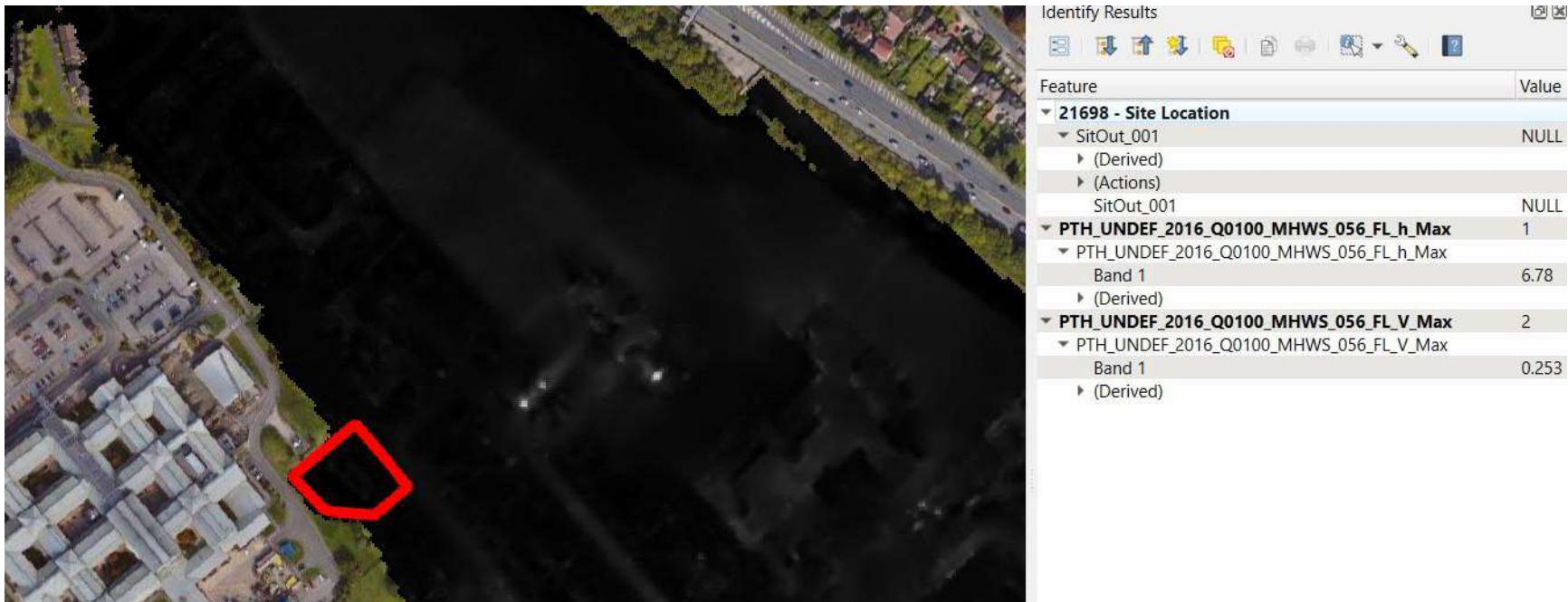
Mapped Modelled Outputs

21698 – Land at Rhodes Avenue , Port Talbot



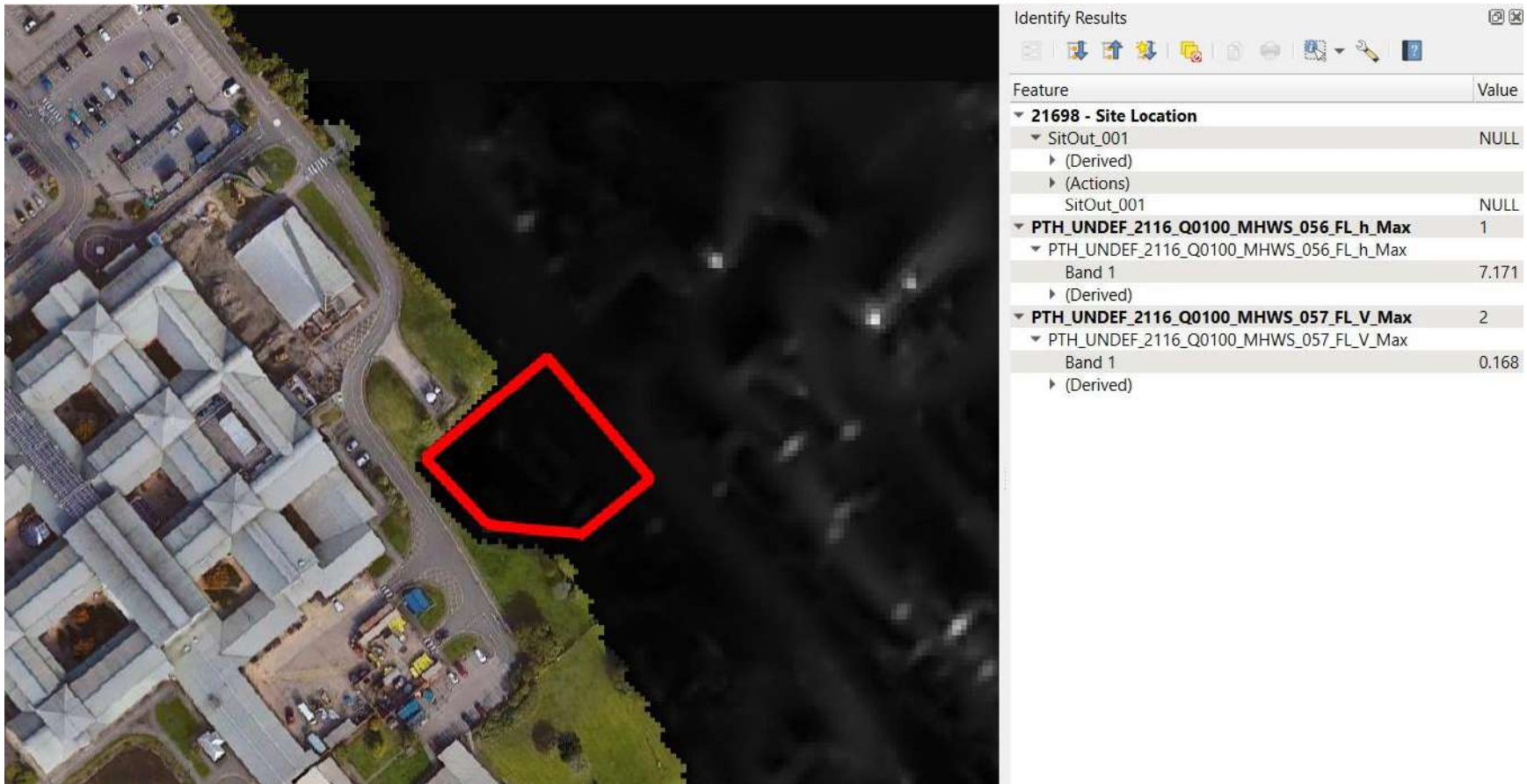
Mapped Modelled Outputs

21698 – Land at Rhodes Avenue , Port Talbot

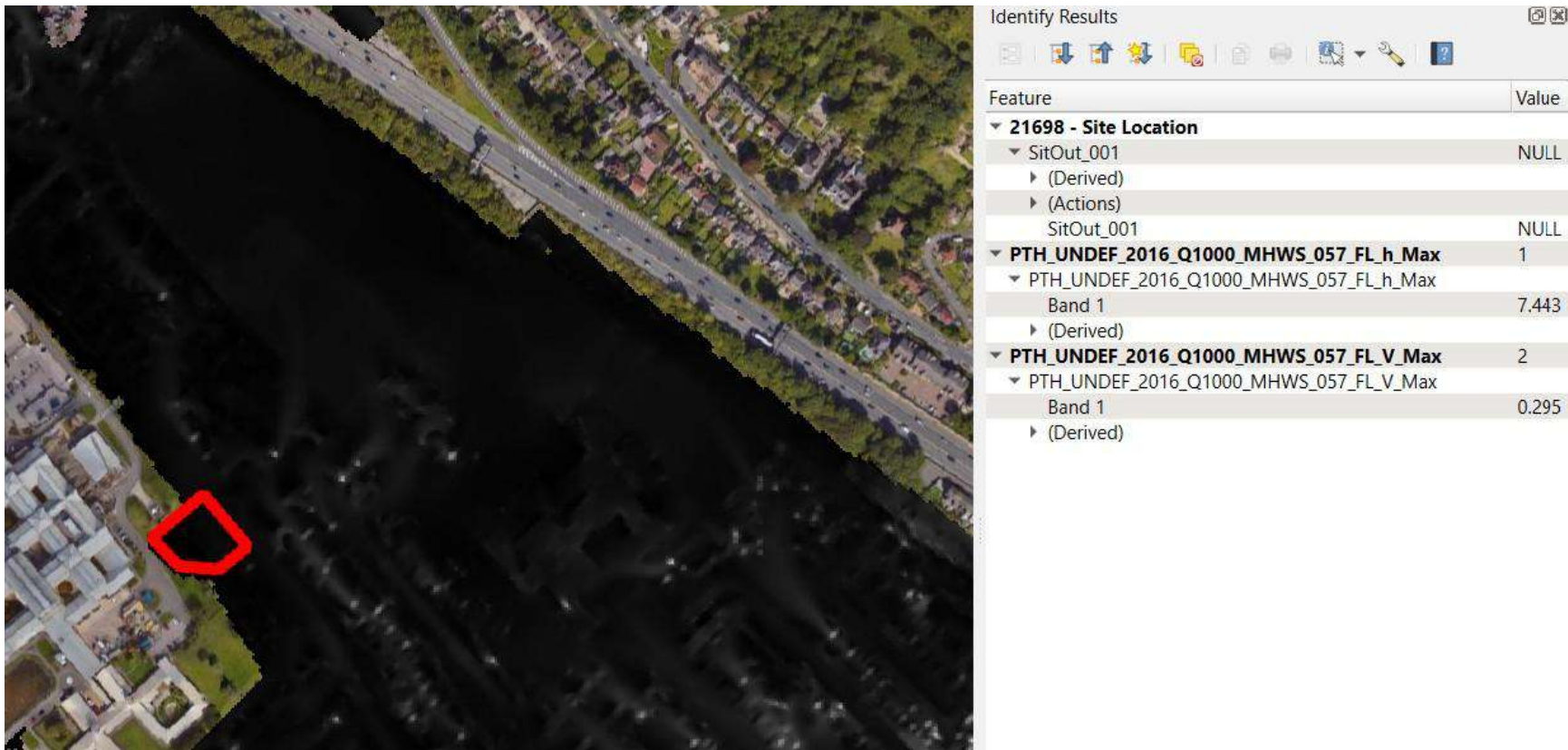


Mapped Modelled Outputs

21698 – Land at Rhodes Avenue , Port Talbot



Mapped Modelled Outputs



Mapped Modelled Outputs

Ein cyf/Our ref: CAS-279551-Q8P2

Mr Robert Bowen
Robert Bowen Planning & Development Ltd.
info@rbplanning.co.uk

Dyddiad/Date: 23 May 2025

Annwyl Syr/Madam/Dear Sir/Madam,

BWRIAD/PROPOSAL: CHANGE OF USE FROM SINGLE STOREY DETACHED FORMER CHANGING ROOMS TO PROPOSED 8NO. RESIDENTIAL UNITS – 6NO. 1 BED FLATS (ASSISTED LIVING), 2NO. 1 BED BUNGALOWS (100% AFFORDABLE)

LLEOLIAD/LOCATION: FORMER CHANGING ROOM, RHODES AVENUE, ABERAFON, SA12 6UT

Thank you for consulting Cyfoeth Naturiol Cymru (CNC) / Natural Resources Wales (NRW) about the above pre-application enquiry, which we received on 27th April 2025.

We have considered your enquiry in relation to our Development Planning [Consultations Topics](#) document (September 2018). We advise the following matters are relevant to your proposal and suggest you consider these further prior to the submission of any planning application.

Flood Risk

The proposal is for a redevelopment of a parcel of land at Rhodes Avenue from changing rooms (LVD) to the erection of 8 residential units consisting of 6no 1 bed flats and 2 no 1 bed bungalows (HVD).

We have reviewed the Flood Consequences Assessment (FCA) ('Flood Consequence Assessment – Former Changing Room, Rhodes Avenue, Aberavon, Neath Port Talbot, SA12 6UT' by Vale Consultancy, dated 11/04/2025, report reference: 21698-FCA-01, issue 01).

The FCA refers to NRW's Flood Risk Assessment Wales (FRAW) Flood Maps, however these hold no relevance nor are considered suitable to inform FCA's and therefore this information has been disregarded.

The application site is located wholly within Flood Map for Planning (FMfP) Flood Zones 2 and 3, and within an TAN15 defended zone. However, it should be noted that defences are to protect existing property rather than justification of new developments.

The FCA has utilized NRW's flood model for Port Talbot to assess the flood risk to the site and reports that in the Q100+cc (Defended Scenario) the site is flood free. The Q1000+cc

(Defended Scenario) has not been assessed. We therefore cannot confirm compliance with Figure 6 of TAN15 and this information should be provided should formal planning permission be sought. In the T200+cc (Defended Scenario) the site is reported to be flood free, however in the T1000+cc (Defended Scenario) the site is shown to flood to depths exceeding the guidance contained with Figure 6 of TAN15.

The FCA has not undertaken any analysis of failure of the defences, and this should also be addressed in any future FCA supporting a formal application.

Section 5.5 of the FCA looks at the impact of flood risk elsewhere as result of the proposed development, however even though the site has been identified to be at risk of flooding in both the fluvial and tidal scenarios, the FCA has assumed that any displaced flood waters will remain on the application site and not affect any 3rd parties. There is no quantifiable evidence to support this claim, and we cannot concur with the report's findings at present.

In summary, the FCA fails to satisfy the requirements of TAN15 and further information would need to be provided for review, especially given the that the Q1000+cc has not been assessed, nor the impact should the defences in place fail. At present we could not provide a response that is supportive of introducing highly vulnerable development with ground floor sleeping into an area considered to be at flood risk.

Groundwater Protection and Land Contamination

Advice on environmental considerations and the assessments needed to support your planning application can be found on our external website.

- For advice on how to deal with possible land contamination on your development visit: <http://naturalresources.wales/guidance-and-advice/business-sectors/planning-and-development/advice-for-developers/land-contamination/?lang=en>
- For advice on how to protect groundwater at your development visit: <http://naturalresources.wales/guidance-and-advice/business-sectors/planning-and-development/advice-for-developers/protecting-groundwater/?lang=en>

Other Matters

Please note, the view expressed in this letter is a response to a pre-planning enquiry only. We trust these comments will prove helpful, but they should not set a precedent for any future Natural Resources Wales' response to any formal application for planning permission or other legal consent. Such applications shall be assessed on the information submitted and regulations of relevance at that time. The details contained in this letter are based on the information available to date.

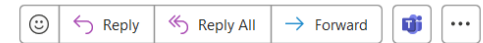
As part of our discretionary advice service we can provide further advice relating to land contamination, groundwater and flood risk prior to your planning application being submitted. There is a charge for this service. Further details are available on our [website](#).

If you have any queries on the above, please do not hesitate to contact us.

Yn gywir / Yours faithfully,

A Fracchiolla

FW: Former Changing Room - Rhodes Avenue ABERAVON (Pre-app Free) - NRW Response NRW:08691533



Mon 09/06/2025 12:33

From: SW Planning <swplanning@cyfoethnaturiolcymru.gov.uk>

Sent: 17 April 2025 15:19

To: Liam Davies

Subject: Former Changing Room - Rhodes Avenue ABERAVON (Pre-app Free) - NRW Response NRW:08691533

FAO Liam Davies

Annwyl / Dear Liam,

Thank you for your email. As noted within your pre-app request form, the site is located within Flood Zone 3 Rivers and Sea and the TAN15 defended zone in the Flood Map for Planning. The flood risk to the site will need to be assessed in line with the updated TAN15 document (Technical Advice Note 15: Development, Flooding and Coastal Erosion (TAN15) (March 2025). In the first instance I would refer you to Section 10 of TAN15, and advise you liaise with the Local Planning Authority to confirm whether they consider the status of the land as greenfield or brownfield, and whether it is allocated within the Local Development Plan (LDP).

Cofion Cynnes / Kind Regards

A Fracchiolla

Tim Cynllunio Datblygu / Development Planning Team

Cyfoeth Naturiol Cymru / Natural Resources Wales

www.cyfoethnaturiolcymru.gov.uk / www.naturalresourceswales.gov.uk

Yn falch o arwain y ffordd at ddyfodol gwell i Gymru trwy reoli'r amgylchedd ac adnoddau naturiol yn gynaliadwy / Proud to be leading the way to a better future for Wales by managing the environment and natural resources sustainably.

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.

Cynghorydd - Cynllunio Datblygu/Advisor - Development Planning
Cyfoeth Naturiol Cymru/Natural Resources Wales

E-bost/E-mail: swplanning@cyfoethnaturiolcymru.gov.uk

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.