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MBH Design Studio Ltd

MFG MORRISONS BAGLAN MOOR

Flood Risk Assessment

Revision B

 Independent, multidisciplinary engineering
and environmental consultants

MFG MORRISONS BAGLAN MOOR

Flood Risk Assessment

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1.0 INTRODUCTION

- 1.1 Create Consulting Engineers Ltd was instructed by MBH Design Studio to undertake a Flood Risk Assessment (FRA) for a proposed extension to the Morrisons fuel station sales building and associated infrastructure.
- 1.2 The Site under assessment in this report is 0.1167 ha and is located at the junction of Village Road and Christchurch Road in Port Talbot. The Site forms part of the Morrisons petrol station and car park associated with the supermarket. This can be seen in Figure 1.1
- 1.3 The Site is located within the jurisdiction of Neath Port Talbot Council (NPTC). NPTC acts as the local planning authority (LPA) and the Lead Local Flood Authority (LLFA).
- 1.4 The Site is located in Flood Zone 3 of the Flood Map for Planning (Figure 1.1), and as such any planning application at the Site is required to submit an FRA at planning. This report covers the FRA for the Site and the proposed development.

Objectives

- 1.5 The following objectives for this report are:
 - Provide a Flood Risk Assessment of the site, compliant with the guidelines set out in the Planning Policy Wales (PPW)¹ and associated Technical Advice Note 15 (TAN 15)²;
 - The Flood Consequences Assessments: Climate Change Allowances (September 2021)³
 - Assess the risk and implications of flooding on the site including flooding from tidal, fluvial, groundwater, surface water runoff, and artificial sources.
 - Provide advice on the site layout and design that will ensure the safe operation of the site in any flood event; and
 - Consider the potential future impacts of climate change over the lifetime of the proposed development.

Planning Policy Requirements

National Policy

- 1.6 The Planning Policy Wales (updated July 2024) and TAN 15 (Updated March 2025) require all development to reduce and not increase flood risk arising from river and/or coastal flooding on and off the development site.
- 1.7 TAN 15 requires that at the planning stages of a development, the developer should provide accurate factual information to allow the decision maker to assess proposals against the requirements of PPW and the TAN15. This information will need to be submitted with a planning application, in order to ensure decisions are taken within statutory timeframes.

¹ Welsh Government, Planning Policy Wales, July 2024 <https://www.gov.wales/sites/default/files/publications/2024-07/planning-policy-wales-edition-12.pdf> [Accessed August, 2025]

² Welsh Government, Technical Advice Note 15 Development, flooding and coastal erosion: <https://www.gov.wales/technical-advice-note-tan-15-development-flooding-and-coastal-erosion> [Accessed August, 2025]

³ Welsh Government, Flood Consequences Assessments: Climate Change Allowances, September 2021 https://www.gov.wales/sites/default/files/publications/2021-09/climate-change-allowances-and-flood-consequence-assessments_0.pdf [Accessed August, 2025]

- 1.8 To comply with the TAN15 and PPW, a flood consequences assessment for planning applications should be prepared for any new development proposal located fully or partly in Flood Zones 2 and 3 – Surface water and small watercourses.
- 1.9 The flood consequence assessments: Climate Change Allowances³ show that the Site sits in the Western Wales catchment. This recommends that the central estimate or change factor for the 2080s is used for the potential climate change. The peak river flow allowances central estimate for the West Wales catchment is 30%. The peak rainfall intensity upper estimate is 40%. Therefore, the 1% AEP + 30% climate change and 0.1% AEP + 40% climate change have been included in the fluvial flood modelling.
- 1.10 An FRA should be appropriate to the scale, nature, and location of the development and should identify and assess the risk from all sources of flooding to and from the development and demonstrate how any flood risks will be managed over the lifetime of the development.
- 1.11 The NPTC Local Development Plan SP1 Climate Change requires all developments to review climate change and flood risk. NPTC Flood Risk Management Plan⁴ provides more clear cut outlines measures to reduce flood risk for developments.
- 1.12 This report will cover flood risk to ensure the development complies with all relevant measures.

Constraints and Limitations

- 1.13 The copyright of this report is vested in Create Consulting Engineers Ltd and the Client, MBH Design Studio Ltd. The Client, or their appointed representatives, may copy the report in connection with the development described herein. It shall not be copied by any other party or used for any other purposes without the written consent of Create Consulting Engineers Ltd or the Client.
- 1.14 Create Consulting Engineers Ltd accepts no responsibility whatsoever to other parties to whom this report, or any part thereof, is made known. Any such other parties rely upon the report at their own risk.
- 1.15 The Flood Risk Assessment addresses the flood risk posed to and from the proposed development, the extent of which is shown by the Site boundary, as indicated on the attached drawings.
- 1.16 This report has been undertaken with the assumption that the Site will be developed in by with the above proposals without significant change. The conclusions resulting from this study are not necessarily indicative of future conditions or operating practices at or adjacent to the Site.
- 1.17 Create Consulting Engineers Ltd has endeavoured to assess all information provided to them during this appraisal. The report summarises information from several external sources and cannot offer any guarantees or warranties for the completeness or accuracy of the information relied upon. Information from third parties has not been verified by Create Consulting Engineers Ltd unless otherwise stated in this report.
- 1.18 The revised Construction (Design and Management) Regulations 2015⁵ (CDM Regulations) came into force in April 2015 to update certain duties on all parties involved in a construction project, including

⁴ Neath Port Talbot County Borough Council Flood Risk Management Plan 2015 Accessed August, 2025
<https://www.npt.gov.uk/media/5399/floodriskmanagementplan15.pdf?v=20170627002320>

⁵ Health and Safety Executive., 2015. *Construction (Design and Management) Regulations*. [Online]. Available at: <http://www.hse.gov.uk/pubns/indg411.pdf> [Accessed August, 2025].

those promoting the development. One of the designer's responsibilities is to ensure that the client organisation, in this instance MBH Design Studio Ltd, is made aware of their duties under the CDM Regulations. Further information on the CDM Regulations is provided in the client guide and is available online. It has been assumed for this assessment that the lead designer will be responsible for advising the Client.

- 1.19 The approach to this FRA follows the ethos of the CDM Regulation, since during the assessment process the development is considered and any foreseeable associated health and safety flood risks are identified. It is then considered how these flood risks can be eliminated, or mitigations identified to reduce or control them. The outcome of this assessment process is presented in this report. While preparing this FRA no other noteworthy or unquiet health and safety risks have been identified.

2.0 SOURCES OF INFORMATION

- 2.1 The information contained in this report is based on a review of existing information and consultation with interested parties.
- 2.2 Key reports and websites reviewed as part of this study are listed in Table 2.1 below.

Document/Website	Author/Publisher	Date
Flood Map for Planning - https://flood-map-for-planning.service.gov.uk/	GOV.UK	Accessed August 2025
Long Term Flood Risk Maps - https://flood-warning-information.service.gov.uk/long-term-flood-risk/map	GOV.UK	Accessed August 2025
BGS GeoIndex – Geology and borehole records - https://mapapps.bgs.ac.uk/geologyofbritain/home.html	British Geological Survey	Accessed August 2025
Sustainable Drainage (SuDS) Statutory Guidance	Welsh Government	2019
Local Development Plan 2011-2026	Neath Port Talbot County Borough Council	Adopted January 2016
Section 19 Flood investigation reports	Neath Port Talbot County Borough Council	2016, 2018, 2020
Flood Risk Management Strategy 2015 (including Preliminary Flood Risk Assessment)	Neath Port Talbot County Borough Council	Accessed October 2024
Current, proposed and site location plans	MBH Design Studio	August 2024
Natural Resources Wales Product 5 and 6 Flood Levels Data	Natural Resources Wales	October 2024

Table 2.1: Key Information Sources

3.0 SITE SETTING AND PROPOSED SCHEME

Site Location and Description

- 3.1 The development Site measures 0.1167 ha in size and is located at the junction of Village Road and Christchurch Road in Port Talbot and is as part of the Morrisons petrol station and car park associated with the supermarket. The Site lies approximately 1.0 km south of Baglan Train Station, at Ordnance Survey grid reference 274655, 191113. The Site is as shown in Figure 1.1 and drawing 14314-2096-LP in the Appendix.
- 3.2 The Site is situated within a predominantly commercial area and is bound by car parking for the Morrisons supermarket store to the northeast and southeast. Residential properties are located to the northwest.
- 3.3 The Site is predominantly comprised of hard standing, with some small areas of permeable landscaping on the western boundary.
- 3.4 The nearest watercourse to the Site is the River Afan approximately 1.8 km southeast of the Site.

The Proposed Scheme

- 3.5 The proposals for the Site are to extend the Morrisons fuel station sales building from 66 m² to 153 m². This results in an additional 87 m² in plan area for the sales building.
- 3.6 The proposed extension to the sales building therefore falls under minor development (less than 250 m²) for commercial properties and can be assessed against the Environment Agency standing advice for minor developments.
- 3.7 The proposed scheme is shown on the MBH Design Studio Ltd drawings within the Appendix.

Site Levels

- 3.8 A topographic survey of the Site has yet to be undertaken.
- 3.9 The Site levels have been based on the publicly available LiDAR data maps. We have used the Welsh 1 m resolution LiDAR data for the assessment.
- 3.10 Assessing the LiDAR, it shows the Site is nominally flat sitting around 7 m AOD.

4.0 FLOOD RISK ASSESSMENT

Scope of Work

- 4.1 The scope of this FRA was refined to meet the brief outlined in Chapter 1 of this report and considers the following:
- Flood risk to the development from all sources for the lifetime of the development.
 - Potential for the design, construction, and operation of the Site to increase the risk of flooding to neighbouring properties; and
 - Any necessary mitigation measures to mitigate identified potential flood risks.
- 4.2 This FRA has reviewed data from the Environment Agency (EA)⁶, NPTC Preliminary Flood Risk Assessment⁷ (PFRA), and Flood Risk Management Strategy⁸.
- 4.3 The design flood event is the 1% Annual Exceedance Probability (AEP) in any given year plus an allowance for climate change. Climate change uplifts are variable depending on the source of flooding. This is outlined in the TAN15 and explained in this report.
- 4.4 The approach is consistent with the PPW¹ and its associated TAN 15² along with the requirements of local planning policy.

Flood History

- 4.5 The PFRA provided historic flood events in the Port Talbot area. The PFRA shows no flood records within the vicinity of the Site.
- 4.6 Natural Resources Wales (NRW) online datasets provide details of historic flooding, and this no records of historic flooding. The NPTC website also has no records of tidal or fluvial flooding for the site⁹.
- 4.7 No other records of historic flooding were found at the time of writing this FRA.

Flood Risk from Fluvial and Tidal Sources

- 4.8 The Flood Map for Planning shows the site to be in Flood Zone 2, as shown in Figure 4.1.
- 4.9 For context within the Flood Map for Planning, Flood Zone 1 is land which has been assessed as susceptible to less than 0.1% AEP (Annual Exceedance Potential) risk of flooding from rivers or the sea in any given year. Flood Zone 2 comprises land assessed as having between a 1% (1 in 100 year) and 0.1% (1 in 1000 year) chance of flooding from rivers or between a 0.5% (1 in 200 year) and 0.1% chance of flooding from the sea in any one year. Flood Zone 3 is land which has a 1% or greater chance of river

⁶ Environment Agency Product 4, Reference 372570-WX

⁷ Neath Port Talbot Borough County Council. Preliminary Flood Risk Assessment. [Online]. Available at: <https://beta.npt.gov.uk/parking-roads-and-travel/flood-and-coastal-defence/flood-management-plan/> [Accessed August, 2025].

⁸ Neath Port Talbot Borough County Council. Flood Risk Management Strategy 2015 Available at: <https://beta.npt.gov.uk/parking-roads-and-travel/flood-and-coastal-defence/flood-management-plan/> [Accessed August, 2025].

⁹ Neath Port Talbot Borough County Council Flood Investigation Reports. Available at: <https://beta.npt.gov.uk/parking-roads-and-travel/flood-and-coastal-defence/investigations-into-flooding/#:-:text=Section%2019%20of%20the%20Flood,flood%20risk%20management%20functions%2C%20and> [Accessed August, 2025]

or a 0.5% or greater risk of flooding from the sea in any given year. These classes are often contextually referred to as 'High', 'Medium' and 'Low' flood risk respectively.

- 4.10 The NRW was contacted and the detailed hydraulic modelling for the area was provided which is appended to this report. The data from the Data map Wales details the Port Talbot Harbourside PAR Project Report, May 2016 (updated 2022) which is discussed in the subsequent fluvial and tidal flood risk sections.

Fluvial Flood Risk

- 4.11 The design fluvial flood event is the 1% AEP event plus an allowance for climate change. Climate change allowances are determined by the type of development proposed, the longevity of the development, and the catchment the developed is located within for fluvial sources. This is outlined within the 'Flood Risk Assessments: Climate Change Allowances'¹⁰ document published on GOV.UK.
- 4.12 The climate change allowances are based on the GOV.WALES 'Climate change allowance sand flood consequences assessment'¹¹ document. The document states that a non-residential development has a lifetime of 75 years, putting it in the 2080's Epoch for climate change allowance. The central estimate for the West Wales Basin, which is recommended for the Site, is 30% Climate Change.
- 4.13 While the Flood Map for Planning (Figure 4.1) shows the site to be within Flood Zone 2, this equates to 0.1% AEP undefended fluvial event. This provides the worst-case scenario of flooding for the development. The corresponding undefended 0.1% AEP fluvial event from NRW is presented in Figure 4.2, which confirms that the site is not at risk of fluvial flooding in this event. The Site is shown not to be at risk from fluvial flooding in the data sets sent by NRW. .

Tidal Flood Risk

- 4.14 This report takes the upper estimate of the climate change shown in the tidal model of the 0.1% AEP defended event to assess the worst case scenario of flooding for the development.
- 4.15 This data, shown in Figure 4.3, shows the Site to not be at risk of fluvial flooding.
- 4.16 Further to this, TAN 15¹² was updated in May, 2025. The update included a new map showing areas that were defended from flood risk from rivers and sea, which is included as Figure 4.4. The figure shows areas that benefit from Risk Management Authority managed and maintained flood defences with the following minimum Standard of Protection: 1 in 100 year (present day) for rivers and 1 in 200 year (present day) for the sea. The figure shows the Site to be within the area that is defended.

Flood Risk from Surface Water (Rainfall)

- 4.17 Flooding from surface water comes from intense rainfall events that are unable to infiltrate into the ground or enter open channel watercourses such as ditches or sewers. Flood events are typically of short duration, subject to no blockages, but they can be severe and should not be underestimated.

¹⁰ GOV.Wales., 2021. Climate change allowance sand flood consequences assessment'. [Online]. Available at: <https://www.gov.wales/climate-change-allowances-and-flood-consequence-assessments> [Accessed August, 2025].

¹¹ DEFRA, 2024. Climate change allowances for peak river flow in England. [Online]. Available at: <https://environment.data.gov.uk/hydrology/climate-change-allowances/river-flow> [Accessed August, 2025].

¹² Gov.Wales 2025 TAN 15 Defended Areas [Online] Available at: https://datamap.gov.wales/layers/inspire-nrw:NRW_TAN15_DEFENDED_ZONES [Accessed August 2025]

- 4.18 The site is in an urban setting and the risk of flooding surface water can be intrinsically linked to surcharged sewers.
- 4.19 The Long-Term Flood Risk for Surface Water – Extents¹³, is shown in Figure 4.5. The surface water flood maps show the highest risk area being the dark blue area with a 3.3% AEP, the light blue area shows the medium risk – 1% AEP; and the pale blue area shows the risk from 1% AEP to 0.1% AEP. Those areas not coloured up, are at very low risk and are defined as less than 0.1% AEP.
- 4.20 The Long-Term Flood Risk Map for surface water shows the Site is mostly at very low risk of surface water flooding however there is an area to the east, outside of the Site boundary, which is shown to have a low risk (0.1% AEP) of surface water flooding.
- 4.21 The 0.1% AEP surface water depth map is used as a surrogate for the 1% AEP plus climate change event. This is because the surface water maps have not been modelled for the design event.
- 4.22 Further interrogation of the surface water maps shows the expected depths of surface water at the Site. The 0.1% AEP event (Figure 4.6) shows there to be no flood depths on the Site.
- 4.23 Comparing the 0.1% AEP flood events to the proposed plans, the proposals (kiosks and substation) are not located in an area of surface water. The proposed development is not shown to be at risk of surface water flooding.
- 4.24 The Site is at not at risk of surface water flooding and the proposed development is not located in an area of surface water flood risk. That said, the sales building is raised above the forecourt ground levels which provide some flood resilience. Likewise, the substation is raised above the car parking levels and had an internal plinth which provided some flood resilience in an exceedance event.

Geology and Flood Risk from Groundwater

- 4.25 Groundwater flooding occurs when groundwater rises through permeable strata to reach the surface.
- 4.26 No onsite ground investigation was undertaken for this assessment and therefore these third-party datasets were used to determine the geological setting of the Site.
- 4.27 The Department for Farming, Environment, and Rural Affairs (DEFRA) Magic Maps¹⁴ defines the Site's underlining bedrock as an 'Secondary A' aquifer these are defined by the Environment Agency as having:
- 'Secondary A aquifers comprise permeable layers that can support local water supplies, and may form an important source of base flow to rivers'*
- 4.28 British Geological Survey (BGS) mapping (1:50,000 scale)¹⁵ identifies the bedrock geology (Figure 4.7) at the Site as the South Wales Middle Coal Measures formation (Mudstone, Siltstone and Sandstone)
- 4.29 The BGS mapping shows the superficial deposits on Site (Figure 4.8) are composed of both Tidal Flat Deposits (Clay, Silt and Sand) and Blown Sand (Sand).

¹³ GOV.WALES., 2024. *Risk of Flooding from Surface Water* [Online]. Available at: https://datamap.gov.wales/layers/inspire-nrw:NRW_FLOOD_RISK_FROM_SURFACE_WATER_SMALL_WATERCOURSES [Accessed August, 2025].

¹⁴ DEFRA., 2024. Magic Map. [Online]. Available at: <https://magic.defra.gov.uk/MagicMap.aspx> [Accessed August, 2025].

¹⁵ British Geological Survey (BGS) Onshore GeolIndex., 2021. *DiGMapGB-50 Bedrock Geology and Superficial Deposits*. [Online]. Available at: <https://mapapps.bgs.ac.uk/geologyofbritain/home.html> [Accessed August, 2025].

- 4.30 BGS borehole records¹⁶ show that there is a borehole located where the sales building is located currently, 5m southwest of the Site. Borehole SS79SW746 comprises of made ground to 2.2 m below ground level (bgl) underlain by peat to 2.4 m bgl, then sand and clay to 2.8 m bgl. Groundwater was struck at 2.7 m bgl.
- 4.31 The urban nature of the site and surrounding land uses with hard paved surfaces also reduce the risk of groundwater emergence. If groundwater were to emerge at the surface, groundwater would likely be intercepted by the local drainage infrastructure.
- 4.32 The risk of flooding from groundwater to the Site and proposed development is low.

Flood Risk from Sewers

- 4.33 Sewer flooding occurs when sewers surcharge due to reaching capacity within the network. This typically occurs during intense rainfall events that exceed the capacity of the sewers (private, adopted, or highway sewers). Flooding from sewers and highways is linked to surface water in urban areas, with the source of flooding being the same; surface water/rainfall events.
- 4.34 Welsh Water (WW) is the statutory sewerage undertaker for the area and is responsible for the operation and maintenance of public sewers serving the Site.
- 4.35 If the WW sewers were to surcharge, the flood water would follow the local topography and likely remain within the highways around the Site.
- 4.36 The Site and development are at low risk of sewer flooding.

Flood Risk from Artificial Water Bodies

- 4.37 All reservoirs are inspected regularly, and essential maintenance is undertaken as per the Reservoirs 1975 Act. NRW are the governing body in Wales to ensure the safety of reservoirs. Specialist engineers, called Panel Engineers must undertake the surveys. From these procedures, there has been no loss of life in the UK from reservoir failure since 1925.
- 4.38 The treat of reservoir failure and flood risk from a failure are deemed a residual risk.

¹⁶ British Geological Survey (BGS) Onshore GeoIndex., 2021. *Borehole records*. [Online]. Available at: <https://mapapps.bgs.ac.uk/geologyofbritain/home.html> [Accessed August, 2025].

5.0 CONCLUSIONS AND RECOMMENDATIONS

- 5.1 Based on our understanding of the Site setting and the development proposals, it is considered that the risk of flooding is generally low from most sources.
- 5.2 The Site is located in Flood Zone 2. However, the flood data provided by NRW shows the Site is not located in a defended or undefended flood extent from fluvial or tidal sources for the 0.1% AEP. The Site is shown not at risk of fluvial or tidal flooding in the datasets.
- 5.3 Surface water flood maps show there to be surface water flooding at the Site in the 0.1% AEP. This is within the car parking areas on the eastern side of the Site. However, the proposed development (EV kiosk and substation) is not located in the area at risk of flooding.
- 5.4 All other sources of direct flooding are deemed to be low risk.
- 5.5 This report has determined the proposed development can be operated safely and without significantly increasing flood risk elsewhere with the mitigation measures mentioned.
- 5.6 The proposed development is compliant with the PPW, TAN15, and local planning policy regarding flood risk and is therefore considered appropriate development in this location.

FIGURES

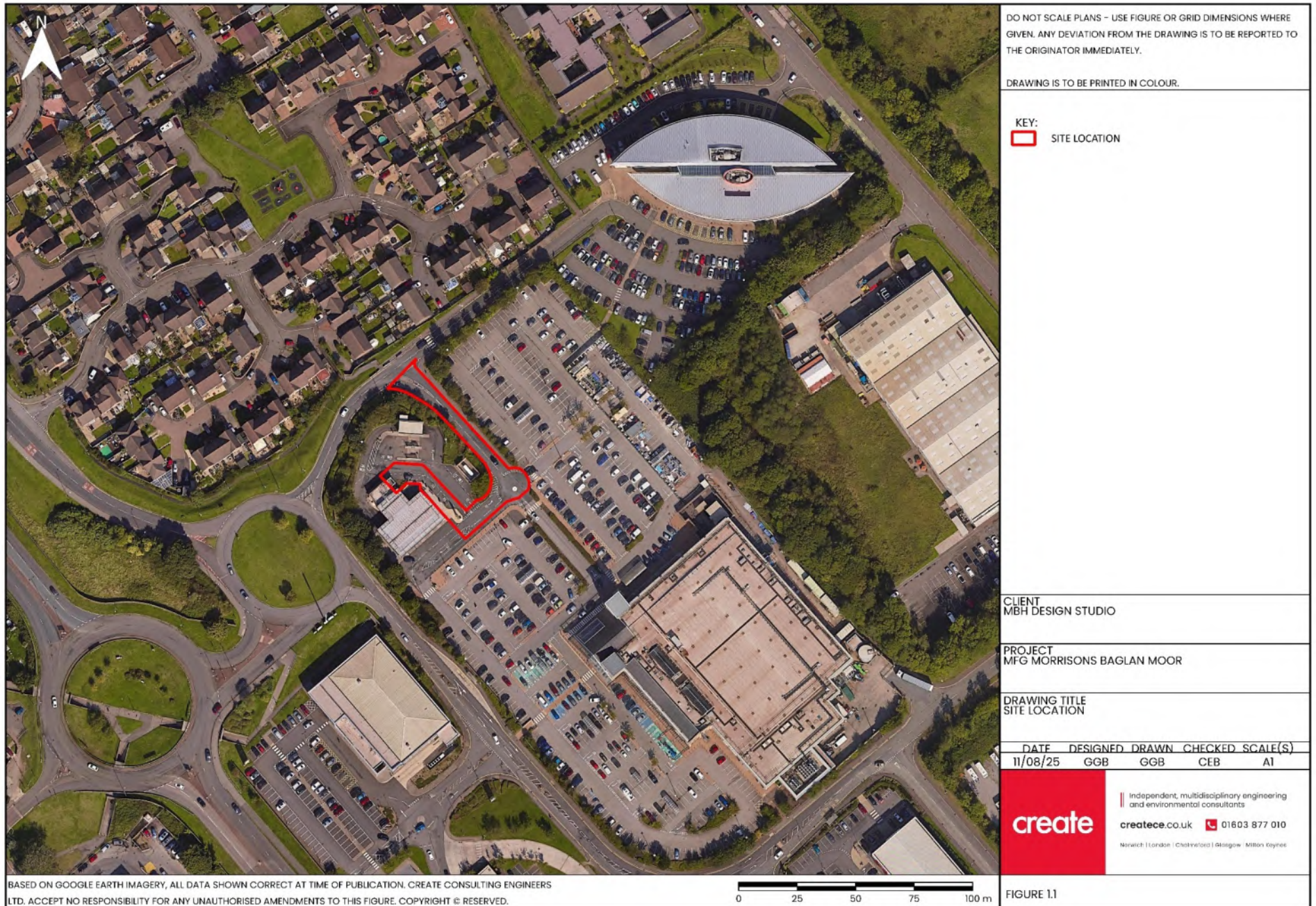


Figure 1.1: Site Location Source: Google Earth Mapping (2025)

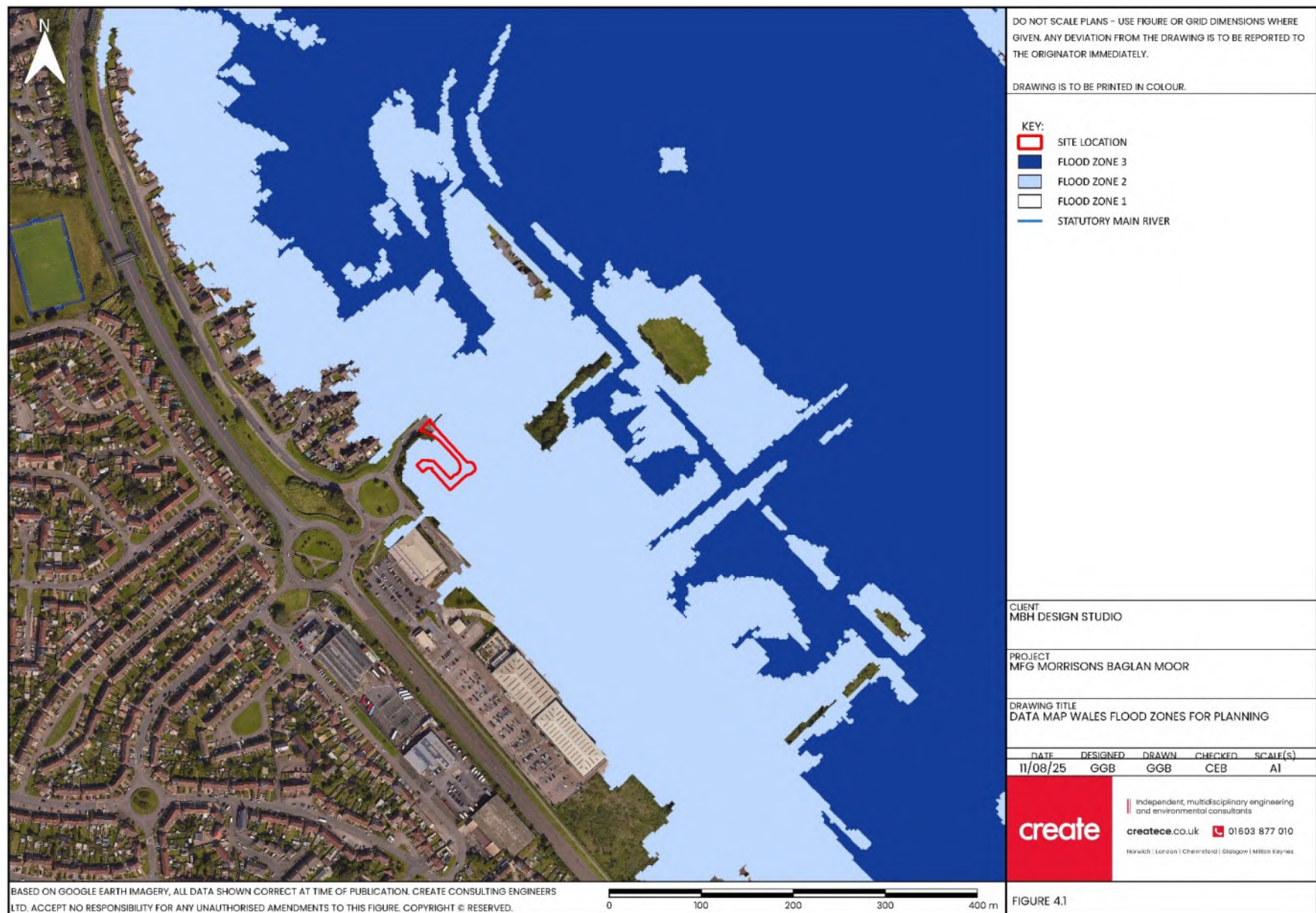


Figure 4.1: Data Map Wales Fluvial/Tidal Flood Map

Source: Data map wales Data Services Platform (<https://datamap.gov.wales/>).

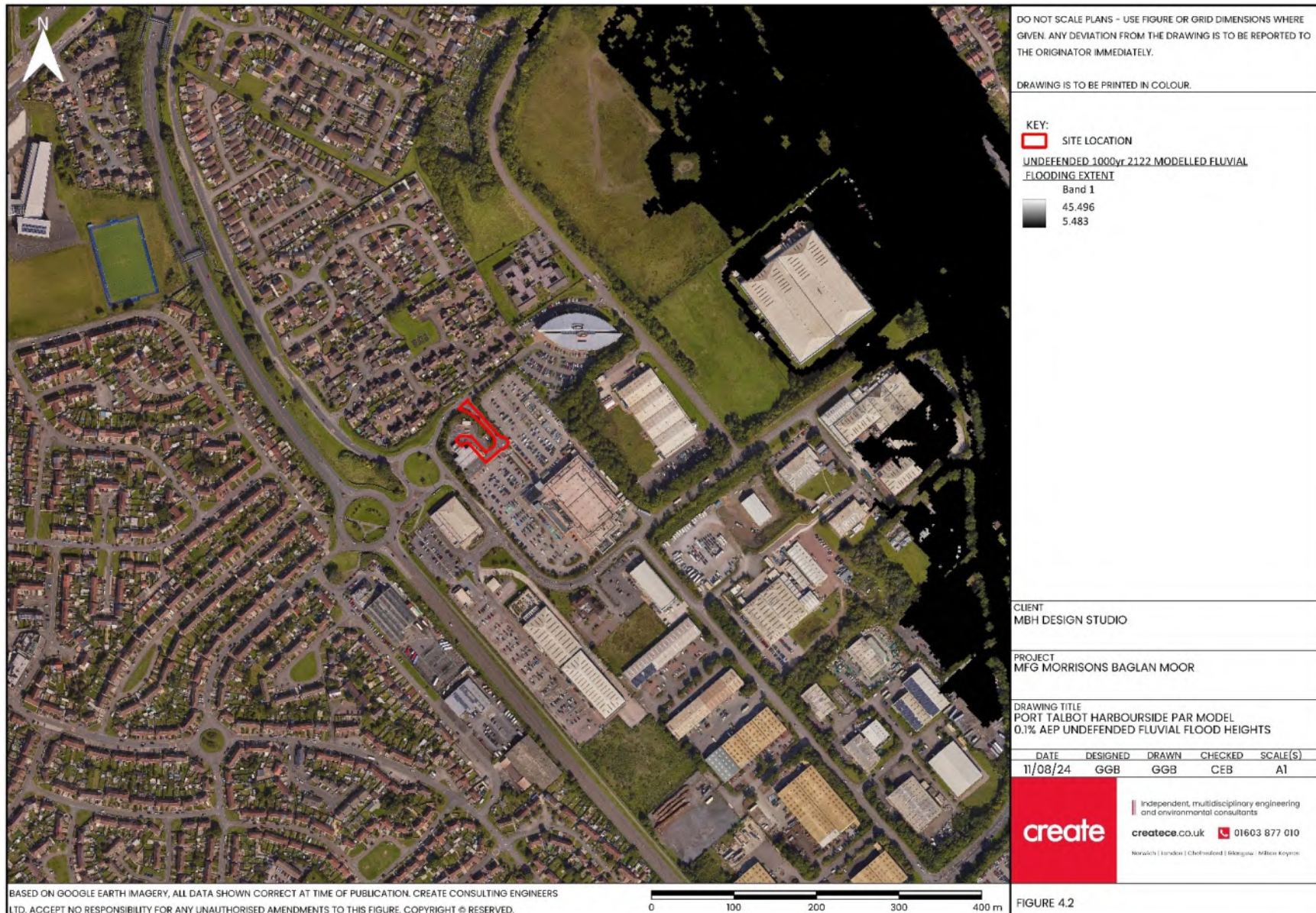


Figure 4.2: Port Talbot Harbourside Par Model 0.1% AEP Undefended Fluvial Flood Heights

Source: Data map wales Data Services Platform (<https://datamap.gov.wales/>).

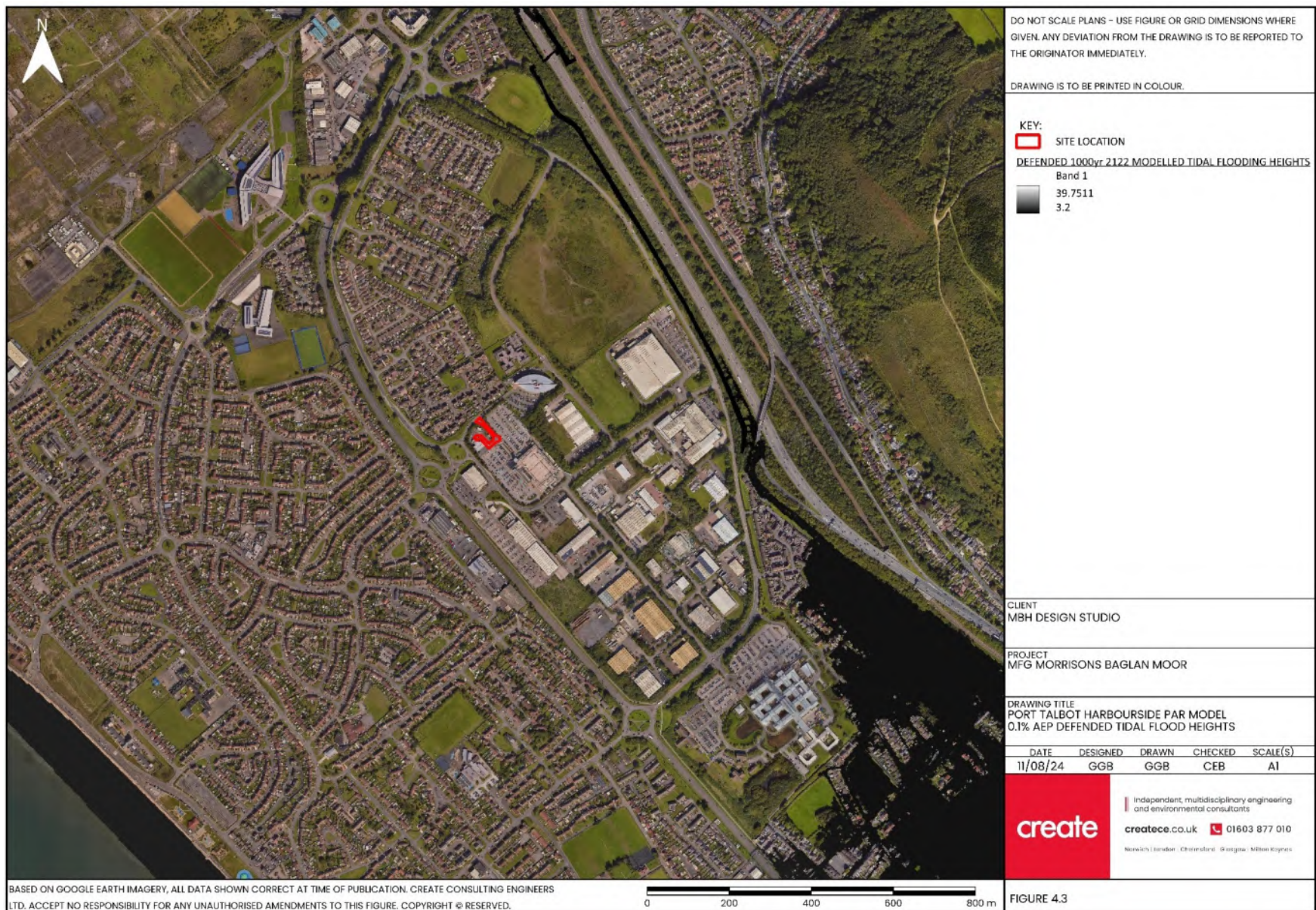


Figure 4.3: Port Talbot Harbourside Par Model 0.1% AEP Defended Tidal Flood Heights

Source: Data map wales Data Services Platform (<https://datamap.gov.wales/>).



Figure 4.4: TAN 15 Defended Areas

Source: Data map wales Data Services Platform (<https://datamap.gov.wales/>).

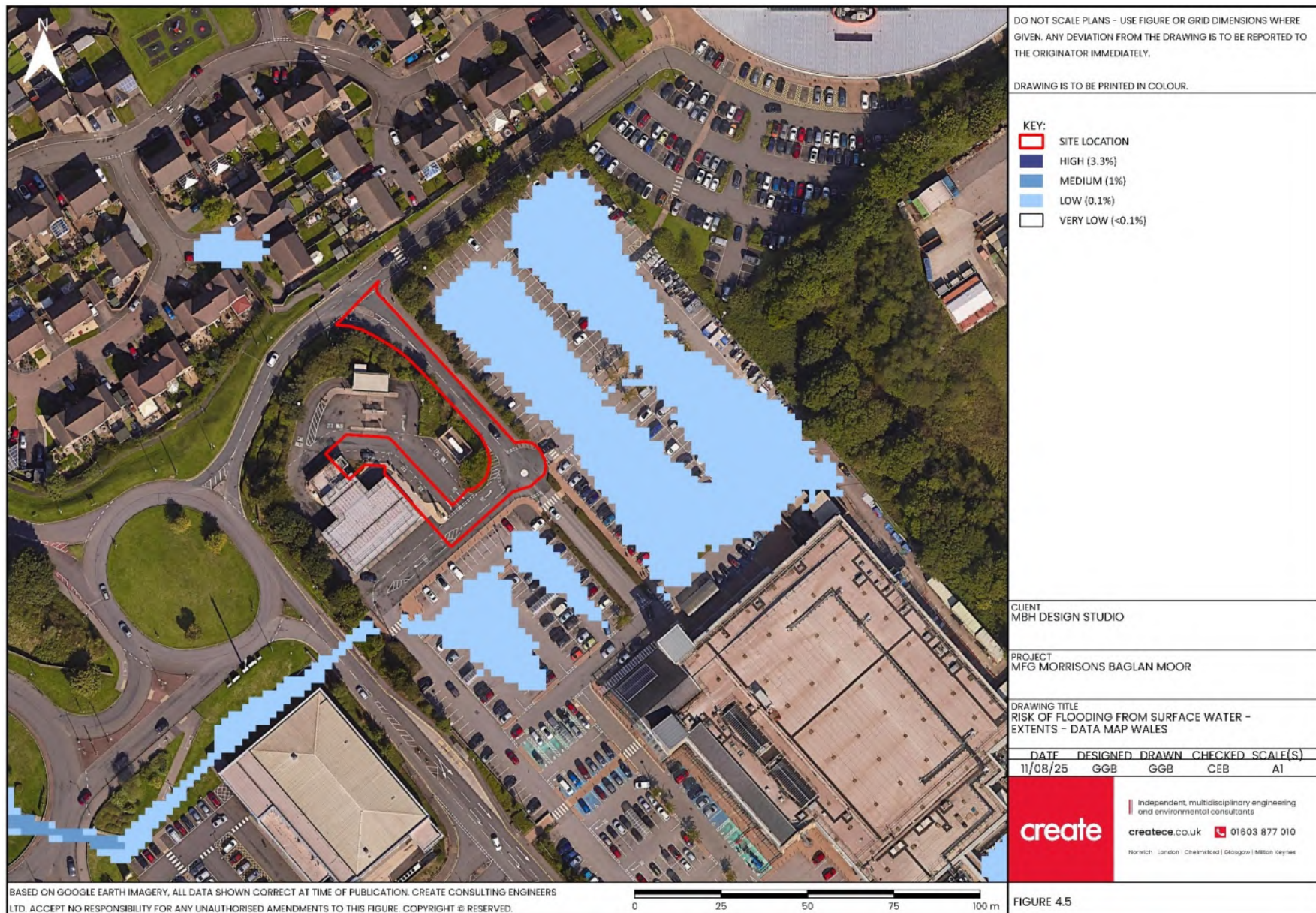


Figure 4.5: Data Map Wales Surface Water Flood Extent Map

Source: Data map wales Data Services Platform (<https://datamap.gov.wales/>).

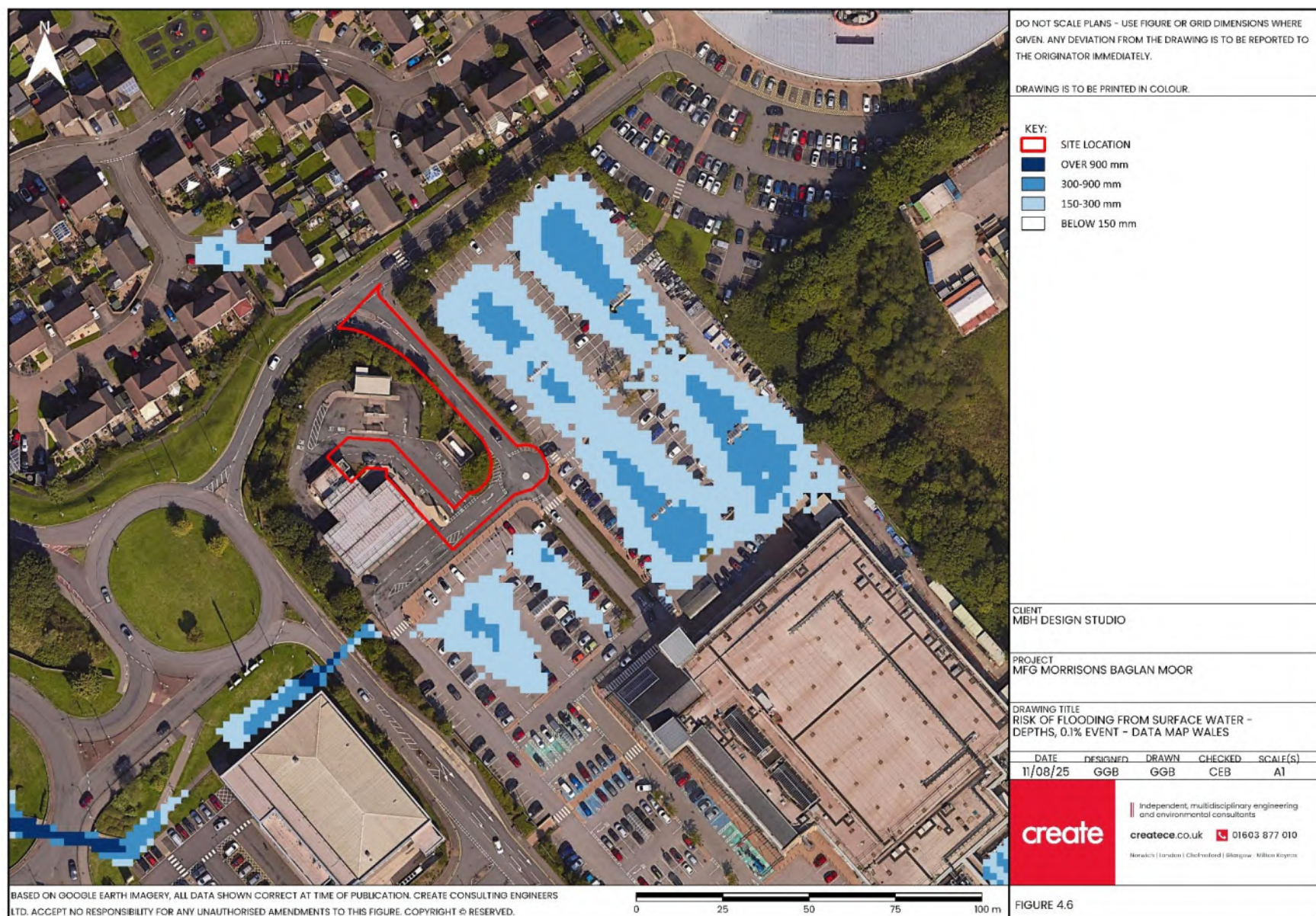


Figure 4.6: Data Map Wales Surface Water Flood Depths Map 1 in 1000 Year Event (0.1%)

Source: Data map wales Data Services Platform (<https://datamap.gov.wales/>).

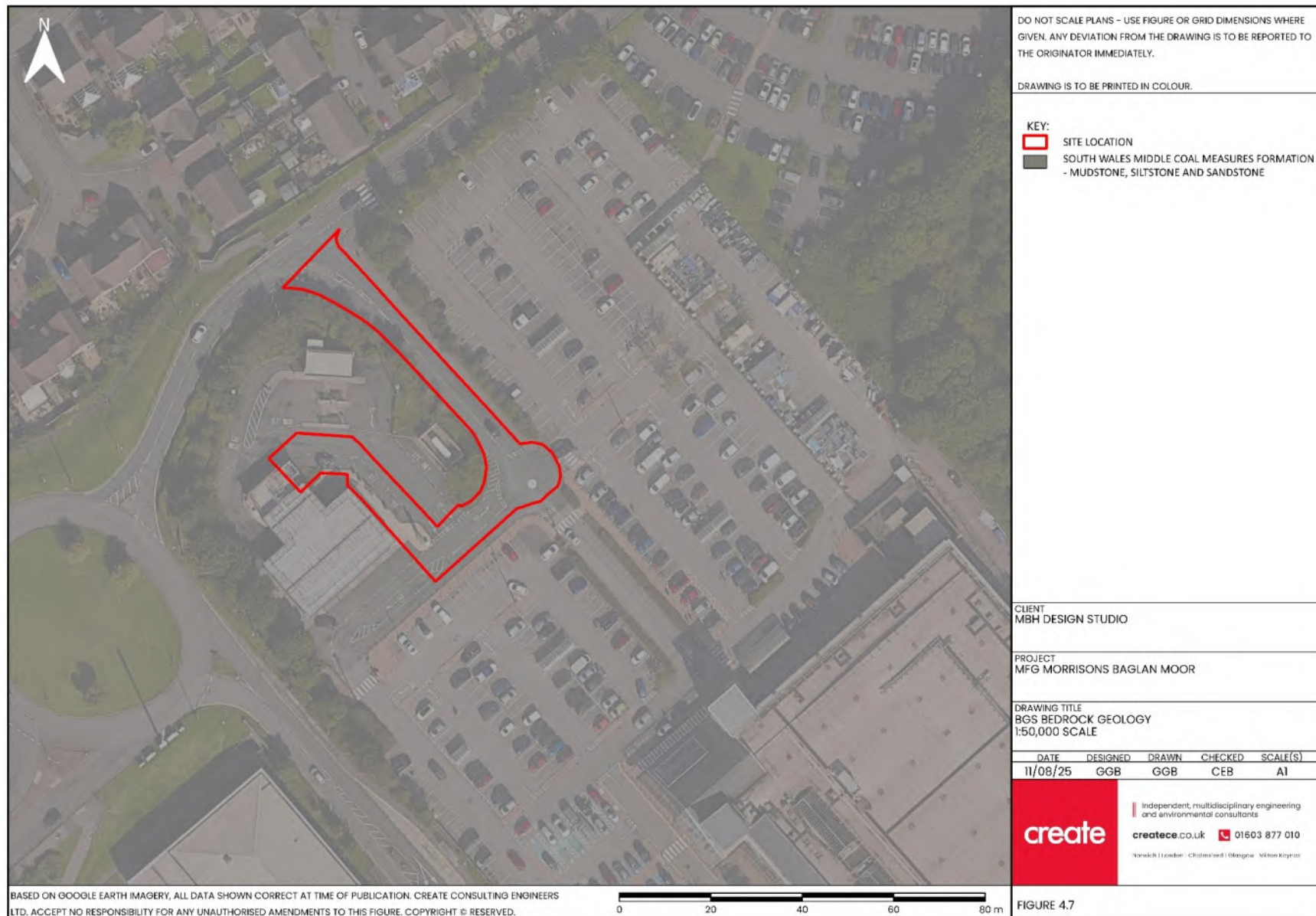


Figure 4.7 British Geological Survey Bedrock Geology Mapping Extract (1:50,000 scale)

Source: BGS Web Map Services (<https://www.bgs.ac.uk/data/services/wms.html>)

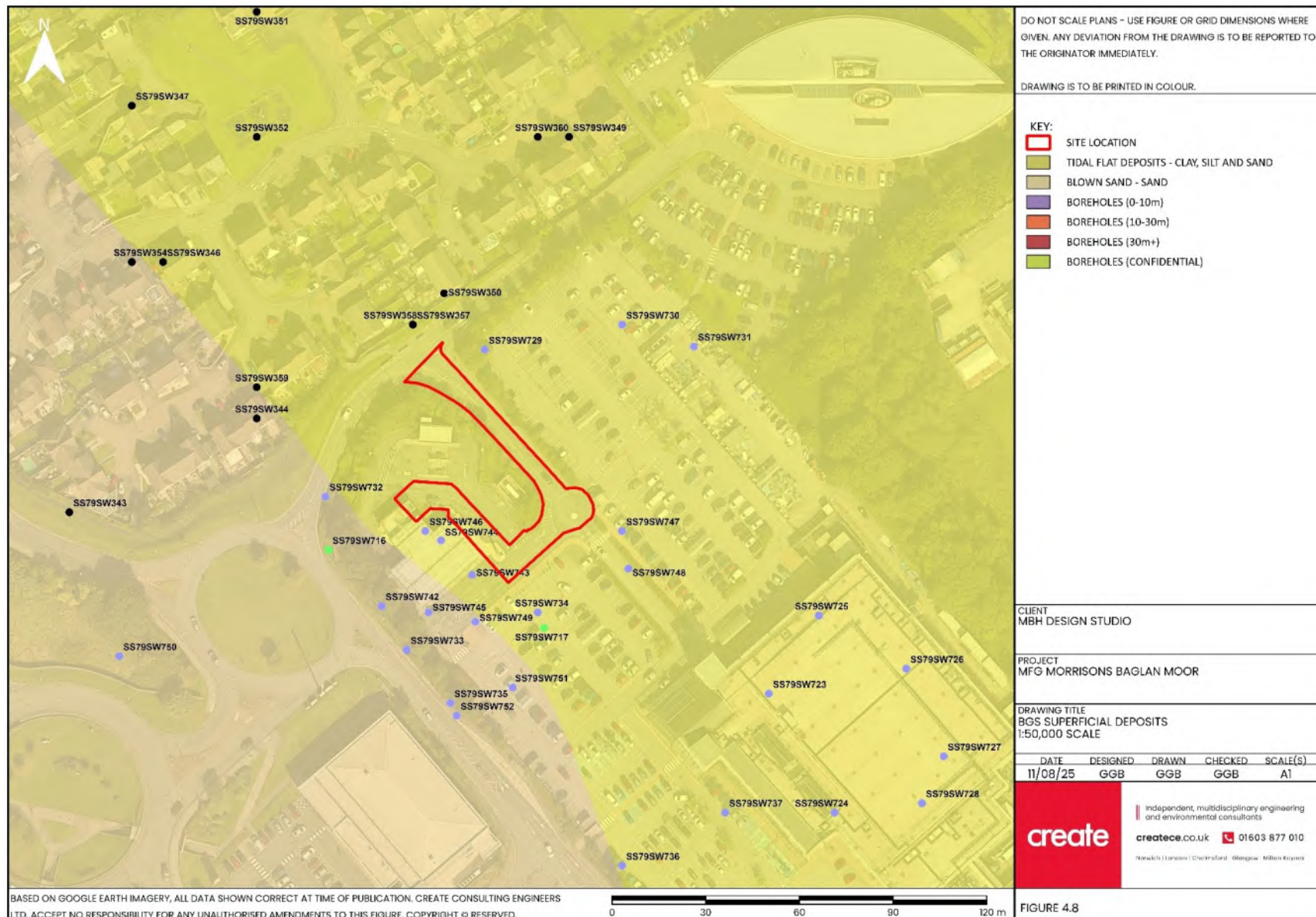


Figure 4.8: British Geological Survey Superficial Geology Mapping Extract (1:50,000 scale)

Source: BGS Web Map Services (<https://www.bgs.ac.uk/data/services/wms.html>)

APPENDIX A

Environment Agency Flood Level Data
(Product 4, 5 and 6)

Port Talbot Harbourside PAR Project Report

May 2016



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Revision History

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v1.0		Ken Stacey

Contract

This report describes work commissioned by Ken Stacey, on behalf of Neath Port Talbot County Borough Council, September 2016. Adrian Kolander, Paul Redbourne and George Baker of JBA Consulting carried out this work.

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Purpose

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1 Introduction

JBA Consulting has been commissioned by Neath Port Talbot County Borough Council (NPTCBC) to assess flood risk in Port Talbot using hydraulic modelling with the aim to support a Project Appraisal Report for the Harbourside Strategic Regeneration Area and Baglan Energy Park. The project also aims to provide a unified detailed flood model of Port Talbot to support NPTCBC wider consideration of flood risk management.

The project has been undertaken with the full support of Natural Resources Wales (NRW) who have provided the original Port Talbot flood model, survey data and extensive technical support.

Some of the work of the project incorporates and builds upon recently work completed by JBA Consulting for the Glan Afan School Flood Consequence Assessment (FCA).

1.1 Study Scope

The agreed study scope of the study is as follows:

- Start-up meeting and site walkover.
- Undertake new hydrology flood estimates for Ffrwd Wyllt and Baglan Brook in accordance with the latest guidance. Also, incorporate new hydrological estimates for the River Afan based on the Glan Afan FCA.
- Undertake a full review of the existing model and undertake any necessary updates so that the model uses the latest best practice and technical guidance.
- Construct a new 1D-2D model of Ffrwd Wyllt using the latest channel survey data.
- Construct a new 1D-2D model of Baglan Brook using new channel survey data.
- Update the flood model of the town centre with new survey data.
- Undertake a full suite of tidal and fluvial runs.
- Prepare detailed model reporting, producing a Model User Report and Project Report.

1.2 Available Data

- Afon Afan and Ffrwd Wyllt channel survey (Environment Agency Wales, 2009)
- Topographic survey of selected locations on Afon Afan and Ffrwd Wyllt as well as in floodplain (NRW, 2016)
- Baglan Brook channel survey (Storm, 2016)
- Hydraulic model for Port Talbot (NRW, 2013)
- 1D-2D hydraulic Model for Afon Afan (JBA Consulting, 2016)
- 1D ISIS model for the Baglan Brook (Edenvale Young, 2013)
- As built drawings of Port Talbot Peripheral Distributor Road (PDR) culvert and relief channel (Arup, 2014)
- Latest OS Mastermap data (NRW, 2016)
- Latest LiDAR DTM data (NRW, 2016)
- Operation of Seaway Parade pumping station in Baglan (Welsh Water, 2017)

1.3 Previous studies

1.3.1 Natural Resources Wales model

Basis for this project was NRW's Afon Afan 1D-2D ESTRY-TUFLOW model developed in 2013. This model in turn was based on a Hyder Consulting (2010) model and has been continuously amended since. The model domain extends from the River Neath in the north-west to the Tata Steel works in the south-east and includes the watercourses Afon Afan and Ffrwd Wyllt. Tidal and fluvial scenarios were simulated using different model schematisations with the model domain being smaller for fluvial scenarios. In general, NRW and NPTCBC had concerns over the quality of the modelling.

1.3.2 Afon Afan model

In 2016, JBA Consulting used the original Afon Afan modelling and updated it for the purpose of assessing flood risk around the Glanafan School in Port Talbot. At the time, the Ffrwd Wyllt was excluded from the study as no risk was posed to the site this watercourse. Main changes included revised hydrology, new survey data, and using a recently introduced bridge modelling approach where bridge losses are calculated automatically by TUFLOW.

1.3.3 Baglan Brook model

A 1D ISIS model developed by Edenvale Young Consulting in 2013 was provided for the Baglan Brook. The model domain extends from the River Neath in the north-west to Baglan Moors in the south-east. However, following a review it was found that the cross-section data was poor and of unknown source. Further, the definition of the Seaway Parade pumping station in Baglan dates back to information sourced in the early 2000s and its provenance/accuracy is unknown. JBA and NRW both expressed significant concerns with this model and it was decided that it would not be directly used in the new Port Talbot model.

2 Methodology

2.1 Overview

The project has the aim of developing a robust hydraulic model which can be used for both tidal and fluvial scenarios and allows the assessment of flood risk in Port Talbot. Hence, the modelling must include the three watercourses Afon Afan, Ffrwd Wylt and Baglan Brook as well as tidal conditions to additionally account for potential interactions.

To achieve the aim, the following modelling objectives were set:

- Review of previous modelling - A series of hydraulic models for Port Talbot have been developed over the last ten years, by a range of organisations and for a variety of uses. Whilst efforts have been made to build upon these previous studies, it is important that best available data, latest guidance and modelling best practice is followed to achieve an appropriate model accuracy/performance.
- Ensure consistent modelling approach - Given the history and patchwork of past flood modelling a range of software and modelling techniques have been adopted. For this study, data from all models is to be merged into a single comprehensive model developed to ensure consistency throughout.
- Incorporate best available data - Since the previous study additional and revised data such as topographic information, improved hydrology and changed tidal conditions have become available. Integration of best data is an important component of this modelling study.
- Assess model performance - With any large flood modelling study care is required to ensure adequate performance of the hydraulic model. This is achieved through thorough model review processes, ground truthing and validation against historical records.



Figure 2-1 Modelled extent of watercourses in this commission

2.2 Boundary Conditions

2.2.1 Hydrology

A new hydrological assessment for this commission was undertaken by JBA. Hydrographs were generated for all watercourses for a range of annual exceedance probability (AEP) events.

All fluvial inflows peak according to the critical storm duration for their catchments. The critical storm duration for the Afon Afan is 10.5hrs, 6.5hrs for the Ffrwd Wylt and 4.25hrs for the Baglan Brook.

Figure 2-2 shows the inflows for the 1% AEP event. The timing of the tide has been adjusted so that peak tide levels coincide with the peak of fluvial events on the Afon Afan.

Full details of the hydrological assessment are provided in the FEH Calculation Records (Appendix B – FEH Calculation Records) and Model User Report (Appendix A – Model User Report).

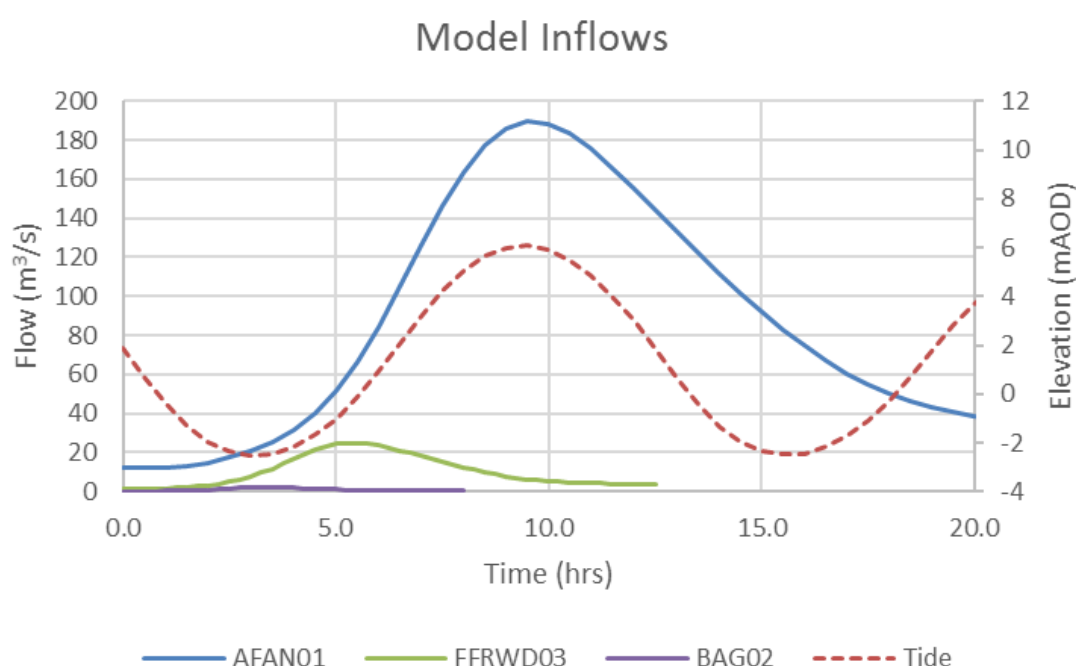


Figure 2-2 Selected inflows for modelled watercourses and tide levels

2.2.2 Tidal conditions:

The tidal boundary conditions have been updated to a base year of 2016. This has been done by adjusting the Mean High Water Spring (MHWS) tide curve at Port Talbot which was obtained from the Admiralty Tide software and was corrected to Ordnance Datum. The MHWS curve was updated by using extreme sea level estimates near Port Talbot for sea level point CH480 (FID 240) and applying the design surge profile shape for Mumbles (Surge Number 23).

2.2.3 Climate change allowance:

Climate change was considered by applying additional estimates in line with latest guidance for Flood Consequence Assessments (FCAs)¹. The tidal boundary has been updated using the estimated annual increase for different epochs. For instance, it is assumed that peak tide levels increase by approximately 1.06m over the next 100 years. The fluvial inflows were increased by 30% when 2116 scenarios were investigated.

Table 2-1 Extreme sea level estimates for Port Talbot

Return period (AEP)	0.5%	0.1%
---------------------	------	------

¹ Flood Consequence Assessments: Climate change allowances
<http://gov.wales/docs/desh/publications/160831guidance-for-flood-consequence-assessments-climate-change-allowances-en.pdf>
 2016s4827 Harbourside - Project Report v1.docx

2008 extreme sea levels (mAOD)	6.18	6.45
2016 extreme sea levels (mAOD)	6.21	6.48
2116 extreme sea levels (mAOD)	7.41	7.54

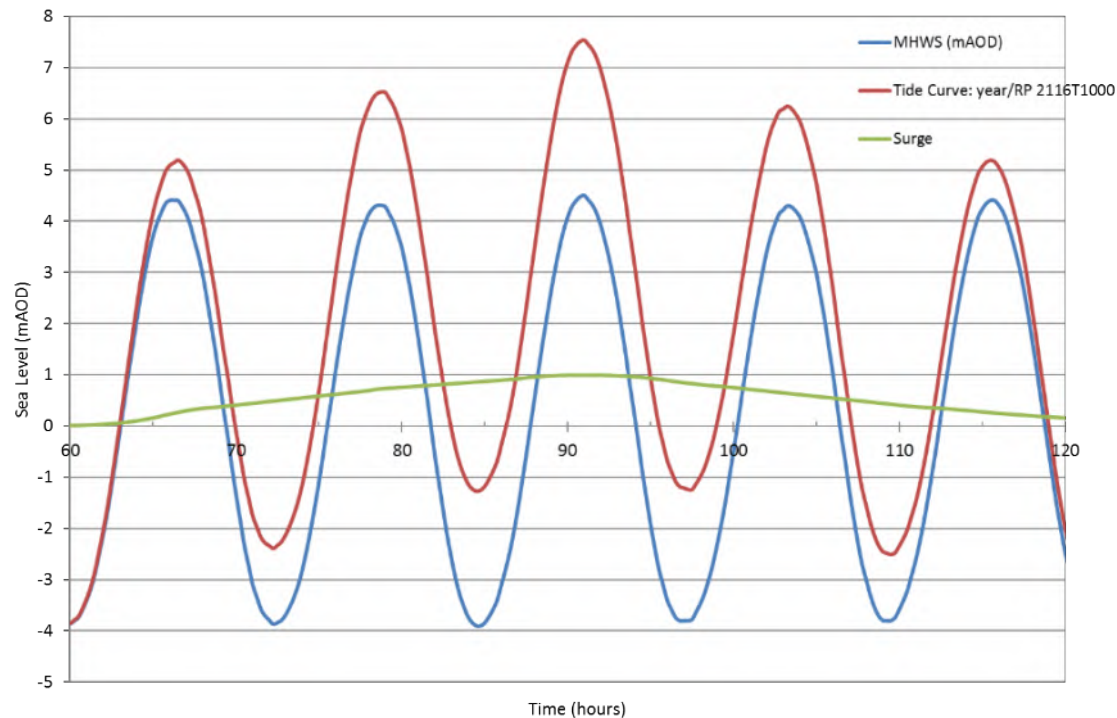


Figure 2-3 Tide curve example

2.3 Model review and harmonisation

Using existing models which have been developed at different times by different organisations, required harmonisation of the models. During the process, most model files have been modified, and updated with new data, latest guidance and latest best practice.

Structure geometry:

All structures have been checked and were updated if necessary using latest topographic survey information. This included numerous updates to opening areas, invert levels and if applicable form losses, Manning's roughness values and structure lengths.

1D-2D linkage:

The model has a 1D domain for detailed watercourse representation and a 2D domain for the flood plain. The link between the two domains is crucial to the quality of the model performance and model results. The linkage of the model has been revised and thoroughly checked. Furthermore, additional flood plain structures have been modelled to allow for appropriate flow route representations particularly underpasses around the Aberafan Centre (SS 76459 90170) on the right bank of the Afon Afan.

Bridge modelling approach:

TUFLOW introduced a new approach to model bridge losses within the 2016-AA version. Bridge losses can now be calculated automatically by TUFLOW due to flow contraction and expansion, and the occurrence of pressure flow (BB bridges). previously, loss tables had to be manually generated and associate bridge losses. With the latest approach, the only loss coefficients required to be specified are those due to any piers, and the bridge deck when it is submerged and not under pressure flow. Additionally, TUFLOW now requires a default form loss value greater than zero for bridges. For this study, this was set to 0.005. Correct application and testing of this new approach was found to be critical to the model results on the Afan, and consequently extensive work was carried out by both NRW and JBA to agree on an accepted methodology for modelling bridges.

Baglan Brook inclusion:

The Baglan Brook was not included in NRW's hydraulic model. To include an accurate representation of this feature in the Port Talbot flood model it was necessary to collect new channel survey of the Baglan Brook. The watercourse is now included in the modelling which allows the accurate assessment of flood risk in Baglan. A key feature of this watercourse is the Seaway Parade Pumping Station (near Baglan train station). This pumping station regulates upstream water levels and flow passing downstream. At the downstream extent of the watercourse, the Baglan Brook flows into the River Neath estuary via a tidal outfall.

2.3.1 Topographic information update**Ground elevation:**

Digital Terrain Models (DTM) were available and data was obtained from the NRW Lie Geo-Portal at 1m resolution. The collection dates of the LiDAR tiles vary between 12th March 2014 and 31st March 2014 which was after the development of the original hydraulic model for Port Talbot. In the small areas where 1m LiDAR coverage was not available, 2m DTM LiDAR was used. Furthermore, LiDAR filtering issues were found in the latest DTM at the mouth of the Afon Afan. To improve the elevation data, ground level information was extracted from the previous modelling and locally enforced.

Manning's roughness values:

New OS MasterMap data was used to define floodplain features such as roads, vegetation, gardens and pathways. OS MasterMap data was compared to aerial imagery to ensure the accuracy of the data was fit for purpose across the study region. Buildings have been represented by a high Manning's n roughness value of 0.1 in combination with a 90% flow constriction across building footprints.

Flood defences:

Existing flood defence files have been carefully revised and were only applied where banks and embankments were surveyed. TUFLOW has been set-up to interpolate bank levels between surveyed cross section. This approach resulted in a significant reduction in some bank heights set within the model. In discussion with NRW, it was agreed to change this so that bank elevations are taken from LiDAR.

2.3.2 Key structures**PDR offtake culvert and overflow:**

On the Ffrwd Wylt there is a large a complex arrangement of culverts, trash screen, and channels that take flow under the Peripheral Distributor Road (PDR). This structure is an important feature in defining flood risk in this area of Port Talbot. Further details of the structure are contained in Appendix E – Peripheral Distributor Road.

Three schematisations of the complex structure have been tested. The selected option delivers the best model performance and was agreed with NRW. Appendix A – Model User Report contains a full description of the model setup and testing.



Figure 2-4: Culvert inlet and overflow upstream of PDR

A48 road bridge:

Significant flooding on the Ffrwd Wylt is predicted to occur upstream of the A48 bridge which restricts downstream flow, forcing water out-of-bank into the adjacent Port Talbot Memorial Park. The capacity of the bridge is possibly influenced by the pipe-crossing immediately upstream of the structure. However, the actual impact is unknown and calibration of the structure has not been possible due to lack of data. However, the impact of the pipe-crossing on the model results has been tested. For this testing the opening area of the structure was reduced by 0%, 50% and 100% of the area covered by the pipe-crossing. In the baseline model, a 50% blockage was assumed. For more details, please refer to the Model User Report (Appendix A – Model User Report).



Figure 2-5 Upstream face of A48 bridge

Seaway Parade pumping station:

Considerable efforts have been made to update the model setup of the Seaway Parade pumping station. The asset is critical to the assessment of flooding on the Baglan Brook.

Previous modelling of the Baglan Brook and Seaway Parade pumping station dates back to the early 2000s and its provenance is unknown. Comparisons of trigger water levels with topographic survey indicated that the previous setup of the model must have been incorrect and clarification was sought from Welsh Water on the true and current setup/operation. As a result, the model schematisation and operating regime was completely overhauled in the new Baglan Brook model to incorporate latest findings (Appendix A – Model User Report, Appendix D – Seaway Parade Pumping Station). Table 2-2 summarises the operating regime applied to the model.

Table 2-2 Operation regime of Seaway Parade pumping station

Pump	Trigger Level (mAOD)	Pump Rate (m ³ /s)
Dry weather pump	Start = 3.15 ; Stop = 3.00	0.5
Storm pump 1	Start = 3.20 ; Stop = 3.00	2.0
Storm pump 2	Start = 3.45 ; Stop = 3.10	2.0
Storm pump 3	Start = 3.50 ; Stop = 3.20	2.0

2.4 Assumptions and limitations

A significant limitation associated with the flood mapping comes from the flow estimates applied to the model. For further details refer to the FEH Calculation Records (Appendix B – FEH Calculation Records). Similarly, a limitation for the tidal model scenarios is the accuracy of the tidal boundary and estimates of extreme sea levels. In both instances the latest technical guidance has been applied to this study.

Flooding on the Ffrwd Wylt was initially simulated during the 20% AEP event upstream of the A48 road bridge. However, such frequent flooding was not supported by historical information on flooding at this location and was therefore regarded as unlikely. Consequently, additional survey information was gathered and bank levels along Talbot Memorial Park were enforced in the model with survey points. This had the result of increasing the standard of protection. Flooding is now initiated during the 5% AEP event. To improve the representation of the bank further, collection of additional water level calibration data would be required.

The Ffrwd Wylt right bank, upstream of the A48, was raised to simulate the patchwork of boundary walls along this reach. This bank representation was inherited from the original modelling. The wall is not a formal flood defence and no consideration has been given to the actual performance of the wall under flood loading. Furthermore, the wall is discontinuous for at least one property due to a garden gate into the watercourse. This was not included in the model.

Model calibration was not possible due to the absence of historical flooding data / information. Additional water level and flow monitoring within the study area would be very useful in improving confidence in the model results.

3 Results

3.1 Fluvial Results

3.1.1 Afon Afan

The Afon Afan through Port Talbot first experiences flooding in the 1% AEP plus climate change (2116) event. During this event spilling occurs near the Aberafan Centre on both riverbanks where water levels are raised by the hydraulic constriction of the triple arch bridge on Station Road. Flooding on the right bank propagates via underpasses to the north and west. Flooding on the left bank extends further south and merges with floodwater from the Ffrwd Wylt near the Port Talbot train station, as shown in Figure 3-1.

A further spilling location is downstream of the town city, immediately upstream of Green Park weir, where water flows north into the residential area. The onset of flooding at the sites occurs almost simultaneously.

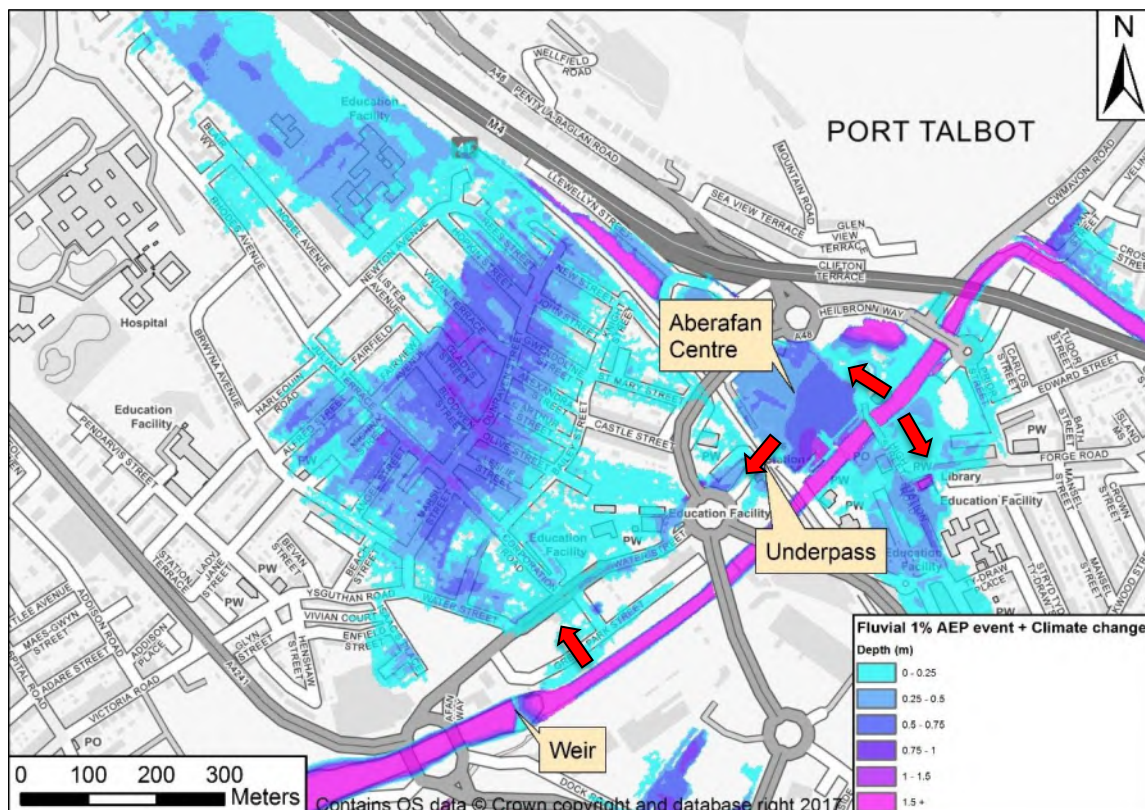


Figure 3-1 Afon Afan with 1% AEP event + Climate Change

3.1.2 Ffrwd Wylt

The Ffrwd Wylt first break out-of-bank during the 20% AEP event. This occurs immediately upstream of the A48 road bridge, with flooding entering the Port Talbot Memorial park on the right bank.

Initially, the main overland flow route is west via Central Road and underneath the railway line to West End. At higher return periods large volumes of floodwater flow north towards Port Talbot train station and into the Harbourside area as seen in Figure 3-2.

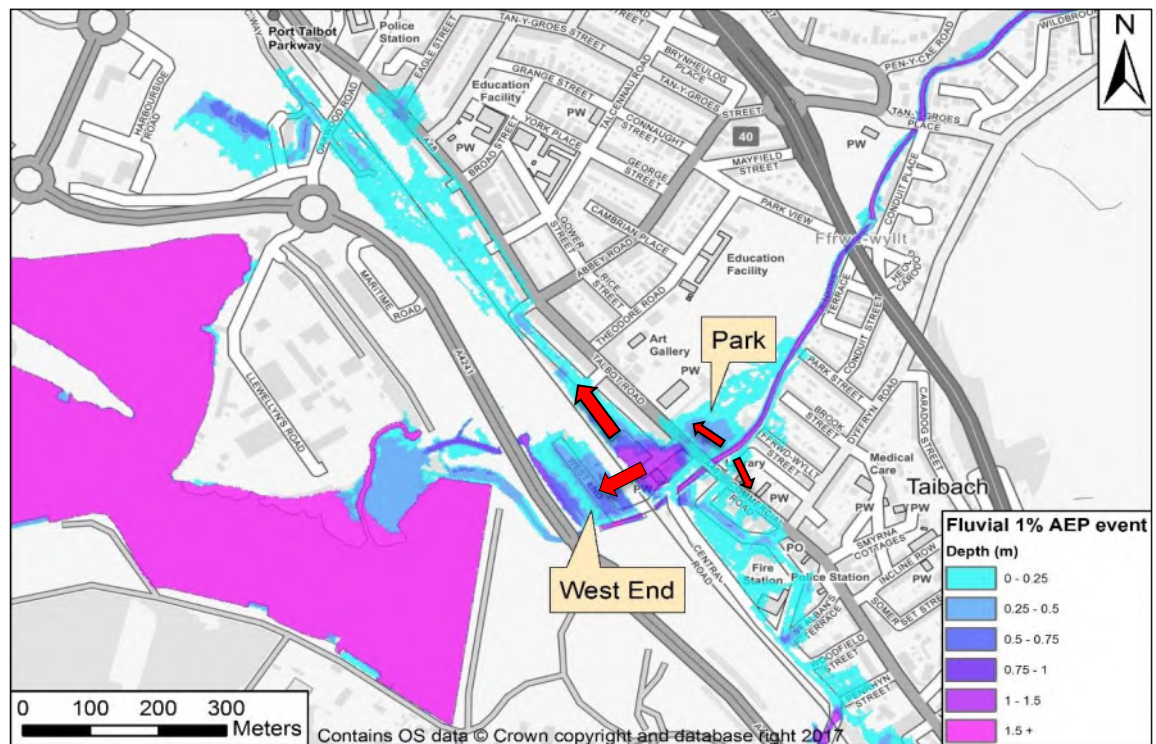


Figure 3-2 Ffrwd Wylt during 1% AEP event

3.1.3 Baglan Brook

The fluvial flood risk from the Baglan Brook is low, and was only simulated for the 0.1% AEP event seen in Figure 3-3. The Seaway Parade pumping station prevents flooding upstream of the pumping station. However, floodwater is predicted to flow onto the M4 over a relatively long section downstream of the pumping station.

The tidal outfall is modelled as open and tidal water propagate upstream, increasing water levels.

During the 0.1% AEP event, overland flows of the Afon Afan is predicted to reach the upstream extent of the Baglan Brook. This is represented in the model and has limited impact on predictions of flood risk on the Baglan Brook.

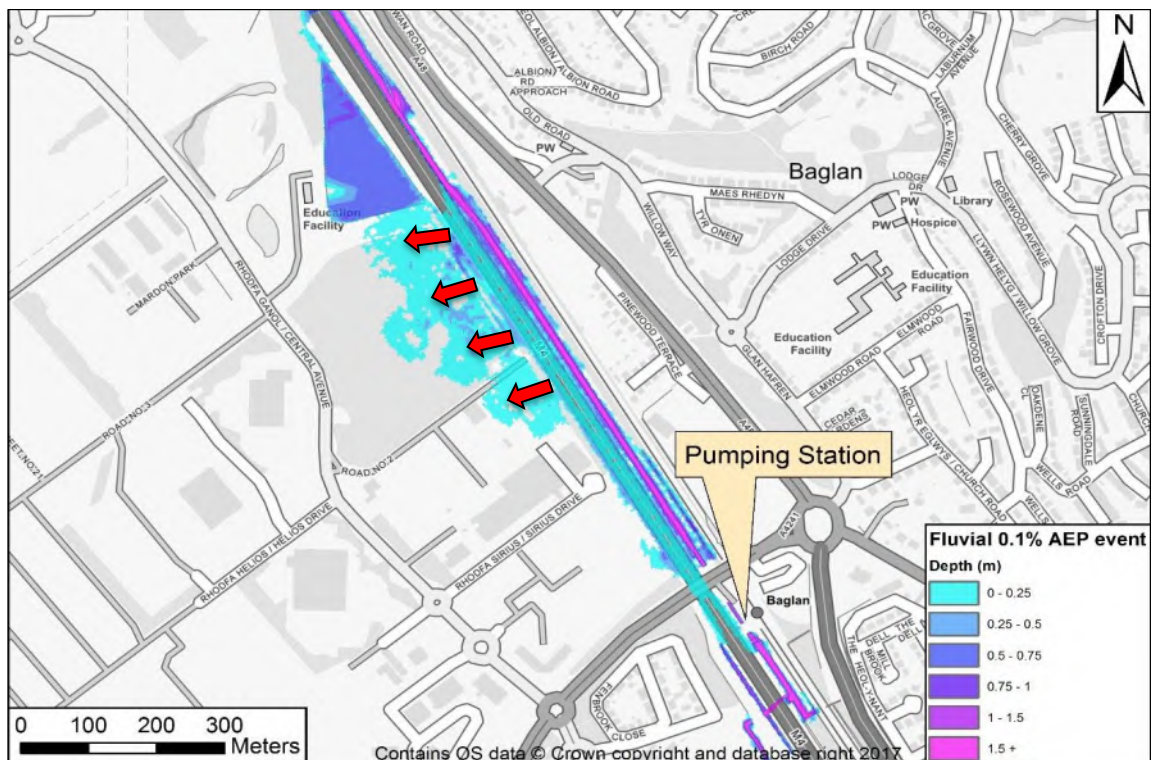


Figure 3-3 Baglan Brook during 0.1% AEP event

3.2 Tidal Results

3.2.1 Afon Afan

Modelling of the present day tidal flood risk suggests that Port Talbot is currently protected for this source of flood risk. However, this changes with the application of 100years of predicted climate change giving results for the year 2116.

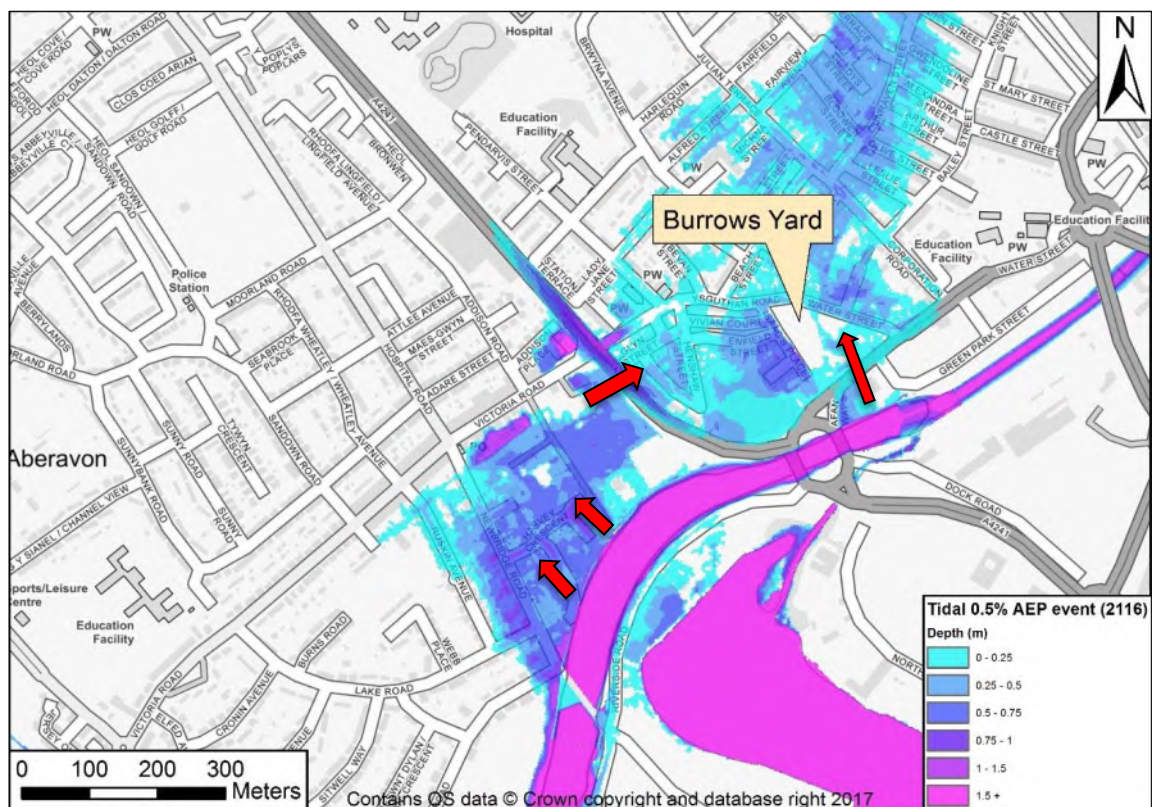


Figure 3-4 Afon Afan Tidal 0.5% AEP event (2116)

Tidal flooding on the Afon Afan was modelled for the 0.5% AEP plus climate change event (2116) as shown in Figure 3-4. The most significant location of overtopping is in the vicinity of Harvey Crescent. A second spilling location is further upstream, where a low point in the riverbank exists adjacent to an area known as Burrows Yard. Overtopping is predicted to last for approximately 1.5hrs. Once overtopped flooding propagates across a significant of Port Talbot to the north, as floodwater is not easily able to drain back to the river.

3.2.2 Ffrwd Wyllt & Docks

The addition of climate change to 2116 is predicted to cause tidal flooding of Port Talbot docks. Such tidal ingress is predicted to flood low lying areas around the docks, such as around Llewellyn's Road. See Figure 3-5.

During the 0.1% AEP plus climate change (2116) event flooding the dock area has the potential cause flooding up the Ffrwd Wyllt flood relief channel into the West End area. Although, this is not predicted to cause property flooding.

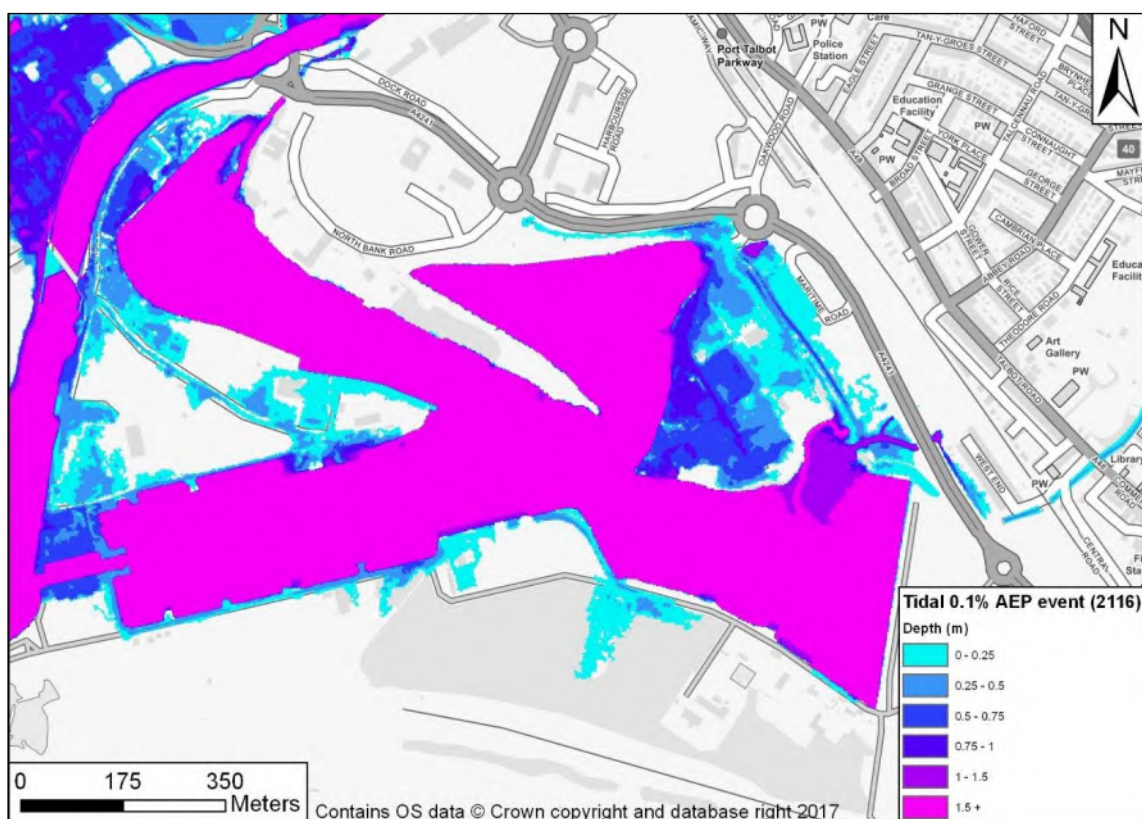


Figure 3-5 Ffrwd Wyllt during Tidal 0.1% AEP event (2116)

3.2.3 Baglan Brook

There is no flood risk in the present day scenario. However, flooding is predicted for the 0.5% AEP plus climate change (2116). The extent of flooding in a tidal event is very similar to the identified during a fluvial event. The highest risk of flooding along the Baglan Brook is at the left bank where water leaves the channel and flows onto the M4, as seen in Figure 3-6.

The flood risk could be minimised by renewing the tidal flap on the outfall of the Baglan Brook into the River Neath. Due to the pumping station areas upstream of the station are not at risk of tidal flooding.

A range of flood maps to support the findings and for further assessment can be found in Appendix C – Mapped Outputs.



Figure 3-6 Baglan Brook Tidal 0.5% AEP event (2116)

4 Conclusion

JBA Consulting has significantly improved the Port Talbot flood model. This has been achieved through a thorough review of the existing models and development of an integrated model of the Afon Afan, Ffrwd Wyllt and Baglan Brook, for both tidal and fluvial risks.

The new model provides a greatly enhanced understanding of the level and extent of flood risk through the town. The model also provides NPTCBC, NRW and future users of the model with greater confidence in the model results.

Although the flood model is based on best available data and techniques, without comprehensive model calibration data there remain some uncertainties in the flood risks. We therefore recommend to that additional water level and flow monitoring within the catchment is considered. Specifically, water level on the Afon Afan through the town centre and flow monitoring on the Ffrwd Wyllt would be extremely helpful.

Throughout the project JBA Consulting have worked closely with NRW, and we gratefully acknowledge their considerable support.

Appendices

Appendix A – Model User Report

Appendix B – FEH Calculation Records

Appendix C – Mapped Outputs

Appendix D – Seaway Parade Pumping Station

Appendix E – Peripheral Distributor Road

Appendix F – Topographical Survey

Appendix G – Model Files & Results

Offices at

Coleshill
Doncaster
Dublin
Edinburgh
Exeter
Glasgow
Haywards Heath
Isle of Man
Limerick
Newcastle upon Tyne
Newport
Peterborough
Saltaire
Skipton
Tadcaster
Thirsk
Wallingford
Warrington

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PLANS



DRAWING NOTES

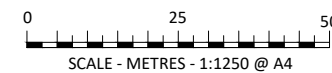
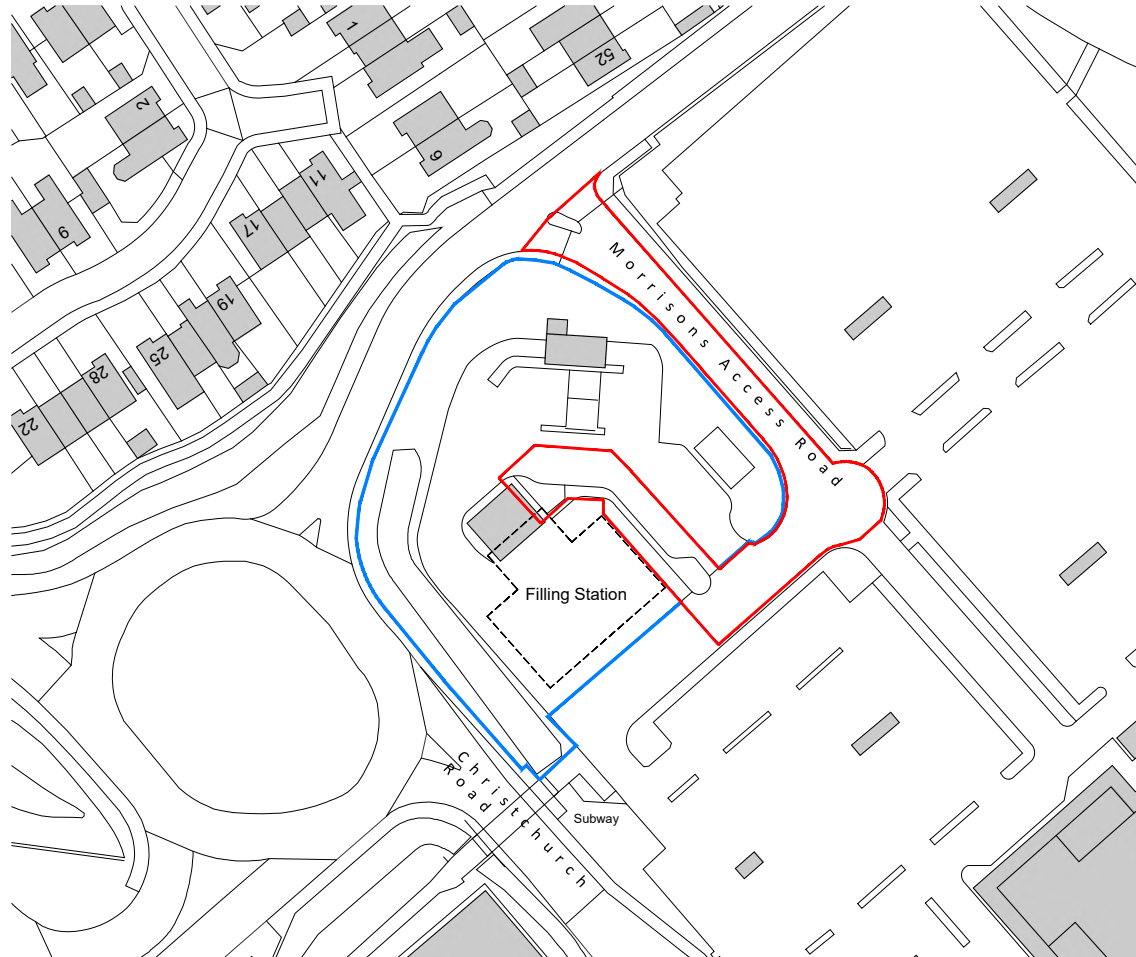
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KEY PLAN:

- APPLICANTS LAND OWNERSHIP LINE
AREA - 4615SQM - 0.4615 HECTARES
- APPLICATION SITE BOUNDARY LINE
AREA - 11675SQM - 0.1167 HECTARES



REV	DATE	DESCRIPTION	DRAWN/CHECKED
REVISION NOTES			
PLANNING			
mbh MBH Design Studio Ltd. Brook House, Apex Court, Campbell Rd, West Byfleet, Surrey, KT14 6SQ www.mbhstd.com t: 01932 352 727 f: 01932 351 545 CLIENT mfg maker food group			
PROJECT			
FS2096 - BAGLAN MOOR MORRISONS CHRISTCHURCH ROAD, BAGLAN INDUSTRIAL PARK, PORT TALBOT SA12 7DA			
DRAWING TITLE			
LOCATION PLAN			
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Scheme Based on OS Map Dated 07.08.2024

- GENERAL NOTES**
- This drawing has been prepared for the sole purpose of obtaining planning permission.
 - This drawing is to be read in conjunction with drawings numbered:

14314-2096-LP	Location Plan
14314-2096-BP	Block Plan
14314-2096-200	Existing Site Plan
14314-2096-201	Proposed Site Plan
14314-2096-202	Existing Sales Building Layout
14314-2096-203	Existing Sales Building Elevations
14314-2096-204	Proposed Sales Building Layout
14314-2096-205	Proposed Sales Building Elevations
14314-2096-206	EV Canopy and Charger Details
14314-2096-207	Substation Enclosure Details
14314-2096-208	LV Enclosure Details
14314-2096-209	Meter Cabinet Details
14314-2096-210	Jet Wash Plan and Elevations
14314-2096-211	Air/Water and Vac Details
14314-2096-212	Plant Room Elevations
 - Any advertisements are indicative and are subject to a separate advertisement application
 - Any neighbouring buildings shown on the elevations are diagrammatic and have been extrapolated from site photographs. They have not been measured.

SCHEDULE OF EXISTING FINISHES

BUILDING EXTERNAL WALLS
Fairfaced Brickwork external wall finish.

BUILDING ROOF
Flat roof.

SHOPFRONT
White aluminum framed glazing with automatic doors.

CANOPY
Traditional steel framed canopy over forecourt w/o signage fascia.

SURFACING
Mixture of concrete and Asphalt, with various drainage channels / gullies.



REV	DATE	DESCRIPTION	DRAWN/CHECKED
REVISION NOTES			

PLANNING

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PROJECT

FS2096 - BAGLAN MOOR MORRISONS
CHRISTCHURCH ROAD,
BAGLAN INDUSTRIAL PARK, PORT TALBOT
SA12 7DA

DRAWING TITLE

EXISTING SITE PLAN

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DT	28.08.2024	1:200	A1
CHECKED BY	DRAWING NUMBER	REV.	
KL	14314-2096-200	-	

SCHEDULE OF AREAS (SQM)		
SHOP	EXISTING	PROPOSED
Site Area	4615 SQM	
GROSS EXTERNAL AREA	76 SQM	163 SQM
GROSS INTERNAL AREA	66 SQM	153 SQM
RETAIL AREA	37 SQM	37 SQM
FTG	N/A	87 SQM
EV	0	0
Parking	42	42
JW	2	2
Valet	3	2

- DRAWING LEGEND
- EXISTING KERB

PROPOSED KERB

PROPOSED DROPPED KERB

DEMOLISHED

EXISTING LINE WORK

PROPOSED LINE WORKS

PROPOSED EV BOLLARD - RAL 5015

EXISTING FLOOD LIGHT

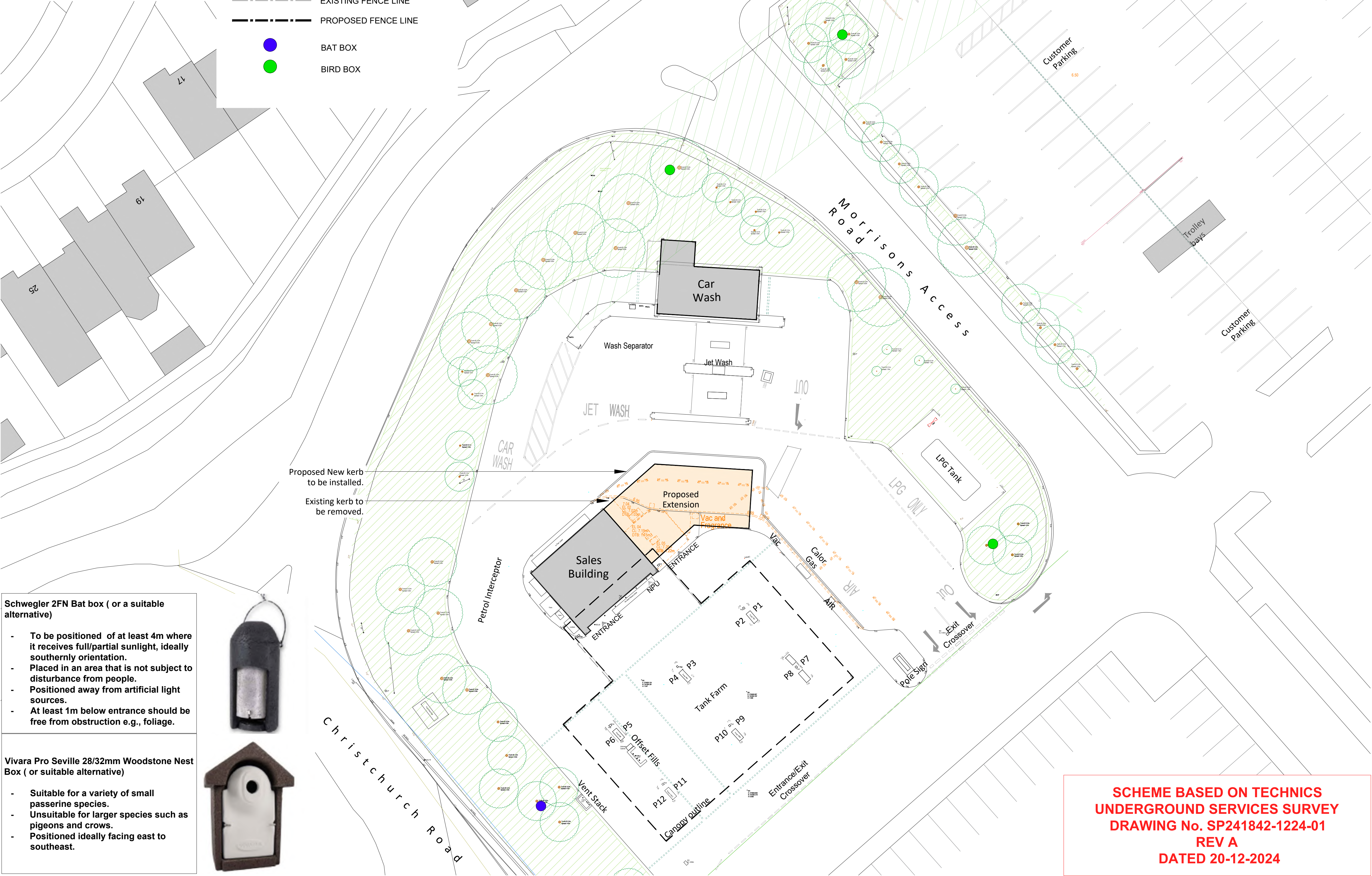
PROPOSED FLOOD LIGHT

EXISTING FENCE LINE

PROPOSED FENCE LINE

BAT BOX

BIRD BOX



- Schwegler 2FN Bat box (or a suitable alternative)

To be positioned of at least 4m where it receives full/partial sunlight, ideally southerly orientation.

Placed in an area that is not subject to disturbance from people.

Positioned away from artificial light sources.

At least 1m below entrance should be free from obstruction e.g., foliage.
- Vivara Pro Seville 28/32mm Woodstone Nest Box (or suitable alternative)

Suitable for a variety of small passerine species.

Unsuitable for larger species such as pigeons and crows.

Positioned ideally facing east to southeast.

DRAWING NOTES

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This drawing is an initial feasibility scheme and is subject to technical review and internal approvals. DNO application process may affect feasibility, provide additional information and require further review of scheme. Feasibility may be affected by other factors as the scheme progresses to working drawing stage and may also be compromised by unforeseen elements encountered on site during installation of works

Scheme Based on OS Map Dated 07.08.2024

GENERAL NOTES

1. This drawing has been prepared for the sole purpose of obtaining planning permission.

2. This drawing is to be read in conjunction with drawings numbered:

14314-2096-LP

14314-2096-BP

14314-2096-200

14314-2096-201

14314-2096-201-1

14314-2096-202

14314-2096-203

14314-2096-204

14314-2096-205

Location Plan

Block Plan

Existing Site Plan

Proposed Site Plan

Proposed Tracking Plan

Existing Sales Building Layout

Existing Sales Building Elevations

Proposed Sales Building Layout

Proposed Sales Building Elevations

3. Any advertisements are indicative and are subject to a separate advertisement application

4. Any neighbouring buildings shown on the elevations are diagrammatic and have been extrapolated from site photographs. They have not been measured.

SCHEDULE OF PROPOSED FINISHES

BUILDING EXTERNAL WALLS

Masonry brickwork to match existing external finish. Entire building to be decorated Grey RAL 7016

BUILDING ROOF

Existing sales building flat roof to be retained. New flat roof to be installed over proposed extension.

SHOPFRONT

Part New Shopfront frames to be finished in Grey (RAL7016)

New fully glazed, single auto-sliding door, frames to be finished in Grey (RAL 7016)

CANOPY

Traditional steel framed canopy over forecourt w/o signage to be retained as is.

SURFACING

Existing forecourt surfacing retained as is. Install Asphalt to new footpath and kerbed areas.

0 10 20

SCALE - METRES - 1:200 @ A1

H

02.09.2025

UPDATED LAYOUT

MO/NS

G

30.05.2025

BIRD BOX AND BAT BOX

MO/NS

F

02.04.2025

PLANNING EDITS

KL/RRB

E

17.03.2025

NOTES AMENDED

KL/RRB

D

19.02.2025

SURVEY DATA REMOVED

KL/RRB

C

14.02.2025

EV LAYOUT AMENDED

KL/RRB

B

20.01.2025

SURVEY ADDED

MO/AM

A

8.10.2024

PLANNING EDITS

KL/RRB

REV

DATE

DESCRIPTION

DRAWN/CHECKED

REVISION NOTES

PLANNING

mbh

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CLIENT

mfg

motor fuel group

PROJECT

FS2096 - BAGLAN MOOR MORRISONS

CHRISTCHURCH ROAD,

BAGLAN INDUSTRIAL PARK, PORT TALBOT

SA12 7DA

DRAWING TITLE

PROPOSED SITE PLAN

DRAWN BY

DT

DATE

28.08.2024

SCALE

1:200

PAPER SIZE

A1

CHECKED BY

KL

DRAWING NUMBER

14314-2096-201

REV.

H

SCHEME BASED ON TECHNICS UNDERGROUND SERVICES SURVEY

DRAWING No. SP241842-1224-01

REV A

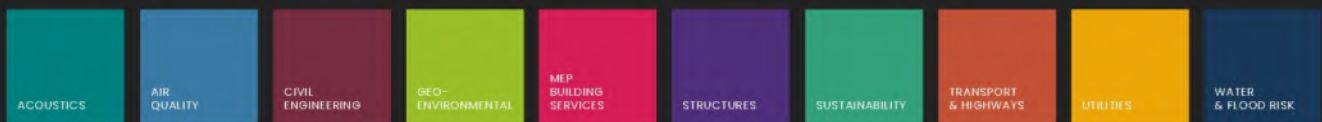
DATED 20-12-2024

MBH Design Studio Ltd

MFG MORRISONS BAGLAN MOOR

Flood Risk Assessment

The information contained within this report and any appendices or supporting information provided are to be treated as confidential.



Independent, multidisciplinary engineering
and environmental consultants

Norwich | London | Chelmsford | Glasgow | Milton Keynes



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