



+44(0) 1443 803 540
info@ashfieldsolutions.com
ashfieldsolutions.com

Planning & Development

Flood Consequence Assessment

Kyle Morgan

39 Margan Road, Port Talbot, SA13 2BN

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Executive Summary

Ashfield Flood Risk Solutions ("Ashfield") were commissioned by Atrium Planning Consultants on behalf of Kyle Morgan ("the client") to undertake a Flood Consequence Assessment ("FCA") for 39 Margan Road, Port Talbot, SA13 2BN ("the site"). This FCA has been prepared in support of a planning application for the conversion of an existing church into a residential property. Ashfield has undertaken this FCA in-line with the most up to date local and national policies on development and flood risk in Wales. These included Planning Policy Wales, TAN15 and Welsh Climate Change (CC) allowance advice.

The nearest Natural Resources Wales (NRW) designated Main River to the site is the tidally influenced Ffrwd-Wyllt, which is located approximately 650m to the north-west. This flows in a westerly direction before discharging into the tidally influenced Afon Afan approximately 2.5km to the west of the site. The nearest ordinary watercourse to the site is the Arnallt Brook, which is located approximately 85m to the west of the site. This flows in a north-westerly direction before discharging into the Ffrwd-Wyllt approximately 648m to the north-west of the site.

The NRW Flood Risk Assessment Wales (FRAW) mapping for rivers indicates that the western section of the existing building footprint is located within an area at low risk of river flooding. Low risk denotes an area with a flooding probability between 1 in 1000 (0.1%) and 1 in 100 (1%). The rest of the site is located outside of an area at risk of river flooding. NRW Product 6 flood model data indicates that the assumed floor level of the building is elevated approximately 0.84m above the flood level associated with the fluvial 1 in 1000 year event and 1.23m above the flood level at the fluvial 1 in 100 year +30% CC (2116) event. The risk of fluvial flooding to the site is therefore considered to be low at both the present day and future Climate Change scenarios.

The risk of flooding from surface water, groundwater, reservoir failure and artificial sources is considered to be low, with the risk of flooding from tidal sources deemed negligible.

This report has outlined a series of recommendations that should be considered to mitigate against residual flood risk on site, and to demonstrate that the consequences of flooding can be managed to a level which is acceptable for the nature/type of development being proposed. This is discussed further in Section 3.

Although the Development Advice Map (DAM) shows Zone C2 on site, the floor levels of the building are elevated 0.92m above the undefended 1 in 1000 year flood extent. Zone C2 is typically associated with this extent, therefore the site should not be considered under the typical Zone C2 classification (where residential development would normally not be permissible) and is deemed appropriate in its location.

This report therefore demonstrates, in-line with TAN 15 development policy that the proposed dwelling:

- Is suitable in the location proposed and will be adequately flood resistant and resilient;
- Is unlikely to place additional persons at risk of flooding due to the floor levels being elevated above the 1 in 100 year + 30% CC and 1 in 1000 year flood levels associated with the extent, and through the use of an appropriate Personal Flood Plan; and

- Is unlikely to increase flood risk elsewhere as a result of the proposed change of use through the loss of floodplain storage, impedance of flood flows or increase in surface water runoff.

1 Introduction

1.1 Authorisation and Context

Ashfield Flood Risk Solutions ("Ashfield") were commissioned by Atrium Planning Consultants on behalf of Kyle Morgan ("the client") to undertake a Flood Consequence Assessment ("FCA"), for 39 Margan Road, Port Talbot, SA13 2BN ("the site"). The site location can be seen in Appendix A and Drawing 01 for reference. This report has been prepared in support of a planning application at the site, for which the development proposals are discussed further in Section 1.6 of this FCA. No site survey has been undertaken as part of this commission.

1.2 Aims and Objectives

The aims of this report are to address the requirements of the Planning Policy Wales and TAN 15 by:

- Assessing whether the site is likely to be affected by flooding from different sources.
- Providing an assessment of the vulnerability of the proposed development and its suitability in relation to the identified flood risks;
- Providing an opinion in relation to the likely impacts of the proposed development on flooding elsewhere; and,
- Where required, presenting flood risk mitigation measures necessary to ensure that the proposed development and occupants will be safe, whilst ensuring flood risk is not increased elsewhere.

1.3 Information Sources Used

In order to prepare this FCA, the following information sources and general guidance documents have been used:

- Planning Policy Wales, Edition 11 – February 2021¹;
- Planning Policy Wales TAN15 – Welsh Assembly Government, July 2004;
- Site Location Plan (Drawing No. 2342 - AL(00)01) – Atrium Planning Consultants, June 2023;
- Proposed Ground Floor Plan (Drawing No. 2342 – AL(2-)01) – Atrium Planning Consultants, June 2023;
- Proposed First Floor Plans (Drawing No. 2342 – AL(2-)02) – Atrium Planning Consultants, June 2023;
- Natural Resources Wales Product 6 Flood Model Data – received October 2023;
- Neath Port Talbot Strategic Flood Consequences Assessment Stage 1 & 2 (SFCA) – Neath Port Talbot County Borough Council, September 2014²;
- Neath Port Talbot Preliminary Flood Risk Assessment (PFRA) – Streetcare, December 2011³;
- Neath Port Talbot Preliminary Flood Risk Assessment Addendum – Neath Port Talbot County Borough Council, December 2017⁴;

¹ https://www.gov.wales/sites/default/files/publications/2021-02/planning-policy-wales-edition-11_0.pdf

² https://www.npt.gov.uk/media/5137/ldp_submission_eb01.pdf

³ <https://www.npt.gov.uk/2389>

⁴ <https://www.npt.gov.uk/2389>

- Neath Port Talbot Flood Risk Management Plan (FRMP) – Neath Port Talbot County Borough Council, December 2015⁵;
- Western Wales River Basin Preliminary Flood Risk Assessment (PFRA) – Natural Resources Wales, December 2018⁶;
- Western Wales River Basin Flood Risk Management Plan (FRMP) – Natural Resources Wales, April 2013⁷;
- British Geological Survey (BGS) Drift & Geology Maps – accessed online October 2023;
- 1m resolution LiDAR data – downloaded online October 2023; and,
- Natural Resources Wales interactive flood maps – accessed online October 2023.

1.4 Report Limitations

This assessment of flood risk has looked to use the most accurate and up to date flood mapping for the location. The site boundary has been supplied by the client and the assessment of risk is based on this. This report has been prepared with due care and diligence in accordance with industry best practice and guidance. The conclusions in this report are valid only to the extent that the information provided to Ashfield was accurate and complete at time of receipt.

1.5 Site Setting

The site is located at coordinates XY: 277699, 188447 (nearest post code: SA13 2BN) and occupies an area of approximately 820m². The site is located in the southern region of the town of Port Talbot, approximately 1.5km south-east of Port Talbot Train Station. The site currently comprises a church building and an adjoining building to the rear of the site. The site is accessed via Margan Road to the east. The site is bound by residential dwellings to the north and south, Margan Road to the east and Duke Street to the west.

1.6 Development Proposals

The development proposals at the site comprise the conversion of the existing church building into a residential property. The proposed plans can be seen within Appendix B, which indicate that the ground floor of the main building (existing church) will include a kitchen and dining room, a lounge area, a quiet room, a cinema room, a toilet. The first floor will comprise two bedrooms, an ensuite and a study/home office. The adjoining building to the rear of the site will comprise a playroom.

1.7 Topographic Mapping

In absence of a site-specific topographical survey, freely available 1m resolution Light Detection and Ranging (LiDAR) data has been downloaded for the site and local area. A visual illustration of the LiDAR is presented on Drawing 02.

From review of the LiDAR data, the ground within the site boundary is shown to generally slope from the highest point in the east of the site (approximately 7.49mAOD) to the lowest topographical point in the south-west of the site (approximately 6.36mAOD). This is a difference of 1.13m across the site. The ground level at the entrance of the building is shown to be 7.39mAOD.

⁵ <https://www.npt.gov.uk/6789>

⁶ <https://naturalresources.wales/media/687969/pfra-report-western-wales.pdf>

⁷ https://naturalresources.wales/media/675146/final_frmp_-western-wales_pk26b82.pdf

The assumed floor level of the building has been determined to be 7.79mAOD. This has been calculated using a combination of the LiDAR derived ground level at the entrance of the building (7.39mAOD) and the approximate threshold level of the front entrance (400mm).

1.8 Local Hydrology

The nearest Natural Resources Wales (NRW) designated Main River to the site is the tidally influenced Ffrwd-Wyllt, which is located approximately 650m to the north-west. This flows in a westerly direction before discharging into the tidally influenced Afon Afan approximately 2.5km to the west of the site.

The nearest ordinary watercourse to the site is the Arnallt Brook, which is located approximately 85m to the west of the site (as shown on Drawing 03). This flows in a north-westerly direction before discharging into the Ffrwd-Wyllt approximately 648m to the north-west of the site.

1.9 Local Drainage

There were no site drainage plans made available to Ashfield to inform this report. It is assumed that the private drainage on site connects into the nearest public sewers beneath Margan Road; however, this cannot be confirmed.

1.10 Flood History

The NRW Recorded Flood Extents data indicates that there are no recorded flood outlines at the site seen in this dataset. The nearest recorded incident occurred in May 2008, approximately 2.9km to the west of the site. The source of this flooding was tidal.

From review of the following documents, it was indicated that although several incidents of flooding have occurred within the county, no such records were identified at or within the vicinity of the site:

- Neath Port Talbot Strategic Flood Consequences Assessment (SFCA) (2014);
- Neath Port Talbot Preliminary Flood Risk Assessment (PFRA) (2011);
- Neath Port Talbot PFRA Addendum (2017);
- Western Wales River Basin PFRA (2018); and,
- Western Wales River Basin Flood Risk Management Plan (2013).

The Neath Port Talbot FRMP (2015) indicates that there have been more than 430 sewer flooding incidents reported by the local water companies within Neath Port Talbot. A total of 355 of these were identified to be at high risk, with a further 34 reported to have caused internal flooding. However, no further information was provided regarding the location and date of the incidents; therefore, it could not be confirmed if the site was affected. There are no reportable incidents of fluvial, surface water or groundwater flooding identified at or within the vicinity of the site within this document.

1.11 TAN15 – Flood Frequency Threshold

Part A1.14 of TAN15 states that new development should be designed to be flood free during the 1% fluvial flood (a fluvial flood with a 1 in 100 probability of occurring in any year) and the 0.5% tidal flood (a tidal flood with a 1 in 200 probability of occurring in any year).

Part A1.15 of TAN15 states that beyond the threshold frequency, proposed development would be expected to flood under extreme conditions. The definition of 'extreme conditions' is typically known as the 0.1% fluvial or tidal flood event (a fluvial or tidal flood with a 1 in 1000 probability of occurring in any year). For residential (habitable rooms), the maximum depth of flooding is 0.6m.

The aforementioned flood events shall be considered further in Sections 2 and 3.

1.12 Climate Change

In September 2021, NRW published the Climate Change Allowance guidance for FCAs⁸. This includes predicted future change in peak river flows which replaced the previous national 20% allowance, with a range of projections applied to regionalised river basin districts. The guidance also includes allowances for sea level rise, which has been updated to reflect a higher central allowance and upper end allowance.

Peak River Flow Allowance

The site falls within the Western Wales River Basin District. Table 1 identifies the relevant peak river flow allowances from this river basin district.

Table 1 – Peak River Flow Allowance for the Western Wales River Basin

Allowance Category	Total potential change anticipated for the '2020s' (2015 to 2039)	Total potential change anticipated for the '2050s' (2040 to 2069)	Total potential change anticipated for the '2080s' (2070 to 2115)
Upper Estimate	25%	40%	75%
Central Estimate	15%	25%	30%
Lower Estimate	5%	10%	15%

When determining the appropriate allowance for use in a Flood Consequence Assessment, the guidance from the Welsh Government recommends that the central estimate for the 2080s is used for the relevant river basin district.

Sea Level Rise Allowances

The Product 6 flood model data accounts for sea level rise in the tidal modelling. This will be discussed further in Section 2.

Climate Change impacts on peak river flows and sea level rise are assessed further at the 1 in 100 year fluvial and 1 in 200 year tidal events in section 2.

⁸ https://www.gov.wales/sites/default/files/publications/2021-09/climate-change-allowances-and-flood-consequence-assessments_0.pdf

2 Flood Risk Evaluation

The following sections provide an evaluation of the risk posed by the key flood risk sources in relation to the site location. Consideration is given to the severity of flood risk to the site as a whole, making use of existing flood mapping, detailed flood modelling, high-level local strategic studies, and available topographic information.

2.1 Fluvial Flood Risk

Fluvial flood risk originates from a watercourse of any size that may affect a site when the channel capacity is exceeded. This type of flooding often occurs following an extreme rainstorm event or a prolonged period of wet weather. Flood events often coincide with high rainfall events or other natural phenomena, which can lead to water levels covering low-lying land or exceeding natural or man-made defences.

As discussed in Section 1.8, the nearest NRW designated Main River to the site is the Ffrwd-Wyllt, which is located approximately 650m to the north-west. This flows in a westerly direction before discharging into the Afon Afan approximately 2.5km to the west of the site. The nearest ordinary watercourse to the site is the Arnallt Brook, which is located approximately 85m to the west.

NRW Mapping

The NRW Flood Risk Assessment Wales (FRAW) divides the floodplain into risk based categories and provides an indication of flood risk for the site. The FRAW mapping for rivers (Drawing 03) indicates that the western region of the site is located within an area at low risk of river flooding. This is shown to affect the western region of the existing property. The risk designations are as follows:

- **High Risk** – each year, this area has a chance of flooding of greater than 1 in 30 (3.3%).
- **Medium Risk** – each year, this area has a chance of flooding of between 1 in 100 (1%) and 1 in 30 (3.3%); and,
- **Low Risk** – each year, this area has a chance of flooding of between 1 in 1000 (0.1%) and 1 in 100 (1%).

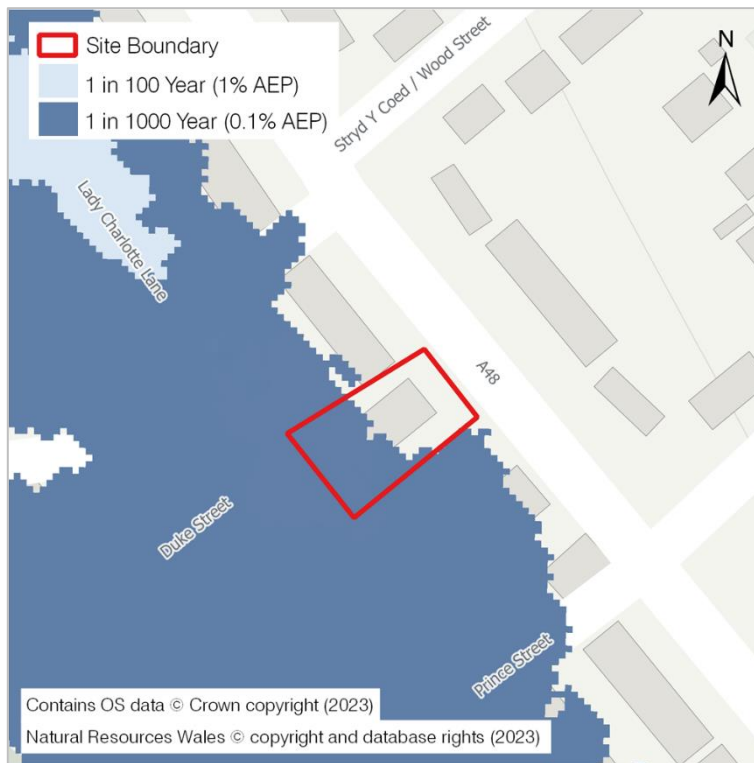
No flood defences have been identified along the Afon Afan. The nearest flood defences are located approximately 650m north-west of the site, along the southern bank of the Ffrwd-Wyllt. From interrogation of the open-source layer for flood defences in a GIS viewer, this is identified to comprise a flood wall. The wall is approximately 82m in length and has a Standard of Protection (SOP) to a 1 in 100-year (1% AEP) fluvial event. The current condition of the defence is 'fair'.

NRW Product 6 Data

To inform this report, Product 6 data was requested from NRW. The Product 6 information comprises 1D-2D ESTRY-TUFLOW flood model data for the Afon Afan and the Ffrwd Wyllt undertaken by JBA Consulting in 2016.

As shown in Figure 1, at the present day scenario, only the 1 in 1000 year flood event is shown to affect the site.

Figure 1 – 1 in 1000 year Fluvial Flood Extent



As per the guidance from the Welsh Government, an allowance of 30% has been applied to the 1 in 100 year event (2116 epoch). As shown in Figure 2, the 1 in 100 year +30% Climate Change (CC) event is shown to encroach upon the western boundary of the site.

Figure 2 – 1 in 100 year +30% CC Fluvial Flood Extent

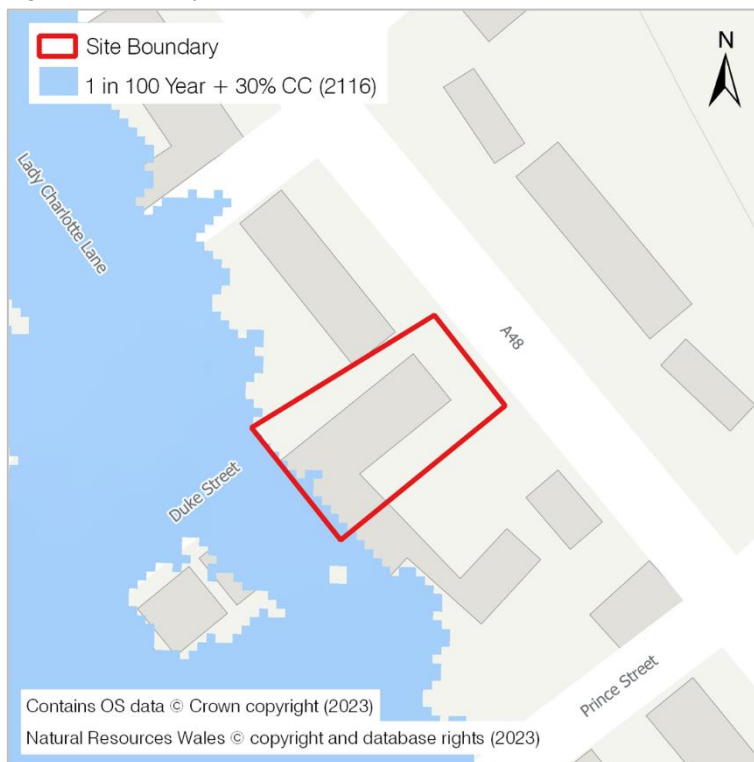


Table 2 outlines the predicted flood depth at the 1 in 1000 year and 1 in 100 + 30% CC event based upon the maximum modelled flood levels compared directly against the assumed floor level of the building (7.79mAOD).

Table 2 – Modelled Flood Levels and Calculated Elevations at the site

Return Period (Fluvial Defended)	Maximum Modelled Flood Level (mAOD)	Calculated Elevation Above Flood Level (m)
1 in 1000 year	6.95	0.84*
1 in 100 year +30% CC (2116)	6.56	1.23*

*This has been calculated using the assumed floor level of the building (7.79mAOD)

Table 2 shows that there is no risk of flooding at the site from 1 in 100 year fluvial event. The assumed floor level of the building is elevated approximately 0.84m above the modelled flood level associated with the 1 in 1000 year fluvial event and approximately 1.23m above the modelled flood level at the 1 in 100 year +30% CC (2116) event.

The overall risk of fluvial flooding to the site is **Low** at both the present day and future Climate Change scenarios. Further considerations are made within Section 3 in relation to keeping this risk to a low designation in the long-term.

2.2 Tidal Flooding

Tidal flood risk can affect the coastline as well as estuaries and rivers that are tidally influenced. Flood events often coincide with the tidal regime, high rainfall events or other natural phenomena, which can lead to water levels covering low-lying land or exceeding natural or man-made defences.

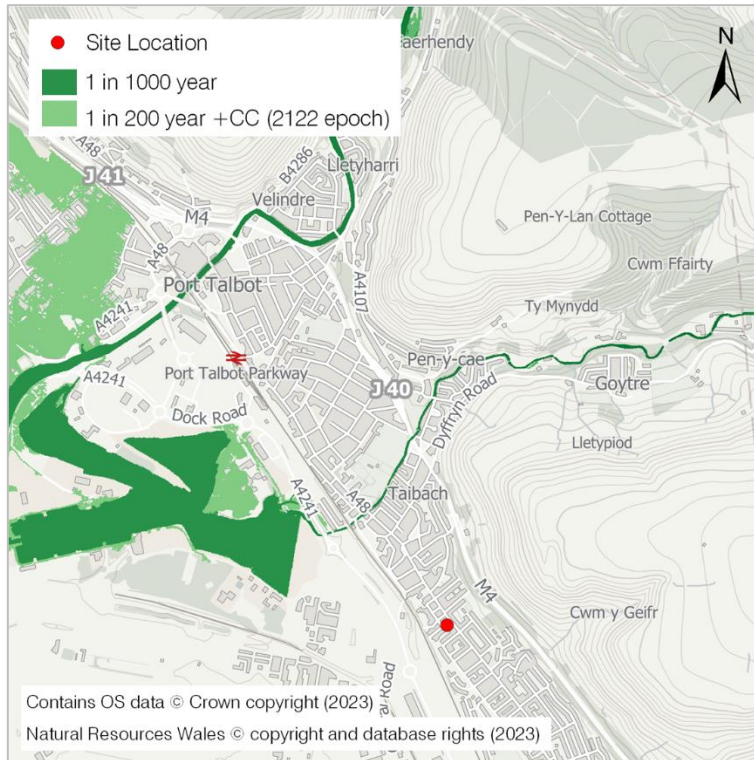
NRW Mapping

Drawing 04 indicates that the site is not located within an area at risk of flooding from the sea. The nearest area to the site at risk from the sea is located approximately 760m to the west, along the tidal extent of the Ffrwd-Wyllt. This is an area of high risk, which is defined as land with a greater than 1 in 30 (3.3%) annual probability of flooding from the sea.

NRW Product 6 Data

The fluvial modelling discussed in Section 2.1 is linked with tidal modelling which accounts for sea level rise to the year 2122. As shown in Figure 3, the present day 1 in 1000 year and the future 1 in 200 year + CC (2122 epoch) are not shown to affect the site. Both extents are located approximately 650m away from the site, within the channel of the Ffrwd-Wyllt.

Figure 3 – 1 in 1000 year and 1 in 200 year +CC (2122) Tidal Flood Extents



The overall risk of tidal flooding is therefore considered to be **Negligible**. No further consideration of this source is deemed necessary as part of this FCA.

2.3 Surface Water Flooding

Surface water flooding occurs when local drainage networks are overwhelmed during an extreme rainfall event, causing water to flow over the surface and follow gravity to the lowest point where it often pools. This flood source is increasingly becoming one of the major contributors of flood risk, due to changing weather patterns and increased extreme rainfall events occurring across the UK. This places more pressure than ever on drainage systems, which are often overwhelmed during flash flood events, normally only designed to take between a 1 in 20 and a 1 in 30 return period event. When interpreting the surface water flood map information, it needs to be taken into account that surface water mapping is generated from information that is largely high-level. The flood mapping must be correctly interpreted in order to give a fair representation of the site's surface water flood risk and used only as a guide.

The NRW Surface Water and Small Watercourses Mapping indicates that an area at low risk of surface water flooding is shown to encroach marginally upon the western boundary of the site. This is shown to affect the western section of the adjoining building at the rear of the site up to depths of 0.3-0.9. The main building (existing church) is not shown to be affected by an area of surface water flooding. The definitions of these extents are provided below:

- **High** means that each year, this area has a chance of flooding of greater than 1 in 30 (3.3%).
- **Medium** means that each year, this area has a chance of flooding between 1 in 100 (1%) and 1 in 30 (3.3%).

- **Low** means that each year, this area has a chance of flooding between 1 in 1000 (0.1%) and 1 in 100 (1%).

Upon review of the documents mentioned in Section 1.10 of this report, it was indicated that there are no reportable incidents of surface water flooding identified at or within the vicinity of the site.

The overall risk of surface water flooding affecting the site is considered to be **Low**. Further considerations are made within Section 3 in relation to keeping this risk to a low designation in the long-term.

2.4 Reservoir Failure

Assessment of risk of a reservoir failure may be interpreted as the extent of flooding that would occur, should any reservoir that has a capacity larger than 25,000m³, suffer a catastrophic failure. Mapping of this nature is described by Natural Resources Wales as a very worst case scenario, with a flood event of this type being extremely unlikely to occur.

The Risk of Flooding from Reservoirs Map (Drawing 06) shows that the site is located within an area at risk of flooding from reservoir failure. Despite this, current legislation ensures that reservoirs are inspected regularly, and essential safety work is carried out as required. Furthermore, the eastern side of the building is not shown to be projected at risk in such an event and when taking into account the raised threshold level (400mm), safe dry access/egress is understood to be achievable.

Upon review of the documents mentioned in Section 1.10 of this report, it was indicated that there are four large scale reservoirs within the Neath Port Talbot area (Gnoll Park, Goytre Valley, Eglwys Nunydd and Longford). The nearest reservoir to the site is the Eglwys Nunydd Reservoir, located approximately 3.2km to the south-east. However, there are no reportable incidents of flooding at or within the vicinity of the site from this source.

The overall risk from this source is therefore considered to be **Low**. No further consideration of this source is deemed necessary as part of this FRA.

2.5 Groundwater

Flooding from a groundwater source often occurs during or following a period of prolonged wet weather within areas that are low lying underlain by permeable rocks (aquifers). When aquifers are at their maximum holding potential, flooding at surface level can occur from beneath the ground.

Groundwater as a sole flooding mechanism is often regarded as low risk as it often relies on a coinciding rainfall, or flood event from an additional source to become a flood risk. The main contributory factor that will enhance the risk of groundwater flooding, is prolonged periods of high rainfall, which result in the groundwater saturation level rising to the point where it reaches the surface.

Online BGS mapping shows the bedrock geology beneath the property to comprise of South Wales Middle Coal Measures Formation – Mudstone, Siltstone and Sandstone. This is classified as a

'Secondary A' aquifer. These are permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers.

The bedrock is overlain by Glaciofluvial Ice Contact Deposits, Devensian – Sand and Gravel. However, no further information was provided regarding its classification.

BGS mapping shows that the nearest borehole to the site with groundwater information is located approximately 130m to the north-west (Ref: SS78NE102), which has a depth of approximately 10.65m below ground level (bgl). It was indicated that groundwater struck at 3.50m and 8.25m bgl. The underlying bedrock at this borehole is the same as that at the of the site location. However, the bedrock in the location of the borehole is located is overlain by Tidal Flat Deposits – Clay, Silt and Sand. This is defined as an 'Unproductive' aquifer.

Upon review of all online documents, it was indicated that there are no reportable incidents of groundwater flooding identified at or within the vicinity of the site. The Neath Port Talbot SFCA noted that groundwater flooding is not considered to be a significant risk within the Neath Port Talbot area. Susceptibility mapping within the North Port Talbot PFRA indicates that the site is located within an area more than 75% susceptible to groundwater flooding. Susceptibility does not necessarily define the likelihood of groundwater flooding, but rather the susceptibility of the underlying geology to groundwater. Despite this, the building has a raised threshold level which provides a level of protection against any residual groundwater emergence at ground surface level.

The overall risk of flooding from groundwater sources is considered to be **Low**. Further considerations are made within Section 3 in relation to keeping this risk to a low designation in the long-term.

2.6 Artificial Flood Sources

Flood risk from artificial sources would include the failure of man-made drainage or water supply network. Although the likelihood of such an occurrence is highly unpredictable, it is recommended that any proposed designs for the site take into account the location of any existing below ground services, in order to avoid any inadvertent flooding taking place during the construction phase and in the future.

Upon review of the documents mentioned in Section 1.10 of this report, there are several reports of sewer flooding incidents within the wider area that the site is located. Water companies identified 430 sewer flooding incidents within the Neath Port Talbot area. As previously mentioned in Section 1.9 of this report, 355 of these incidents were reported to be high risk, with a further 34 reported to have caused internal flooding. However, no further information was provided in regard to the location or date of these incidents, therefore, it could not be confirmed if the site was affected by any of these sewer flooding incidents.

The overall risk of flooding from artificial sources is considered to be **Low**. Further considerations are made within Section 3 in relation to keeping this risk to a low designation in the long-term.

2.7 Summary

Table 3 provides a summary of the classification of risk to the site from all flood sources and indicates where further considerations are required in the context of the proposed development.

Table 3 – Flood Risk Source Summary

Flood Risk Source	Overall Risk Classification	Additional Considerations
Fluvial	Low	See Section 3.
Tidal	Negligible	None.
Surface Water	Low	See Section 3.
Reservoir Failure	Low	None.
Groundwater	Low	See Section 3.
Artificial Sources	Low.	See Section 3.

3 Justification Test & Acceptability of Flood Consequences

This report has so far evaluated all potential flood risk sources that may affect the site. The following sections describe the identified flood risks in the context of the proposed development and provide recommendations, where required, for the mitigation or reduction of those risks to enable safe development.

3.1 Flood Risk Status

Figure 4 shows that the western region of the site is located within Zone C2 of the Development Advice Map (DAM). This is described within Section 4.2 of TAN15 as 'areas of the floodplain without significant flood defence infrastructure' and 'used to indicate that only less vulnerable development should be considered subject to application of justification test, including acceptability of consequences. Emergency services and highly vulnerable development should not be considered.'

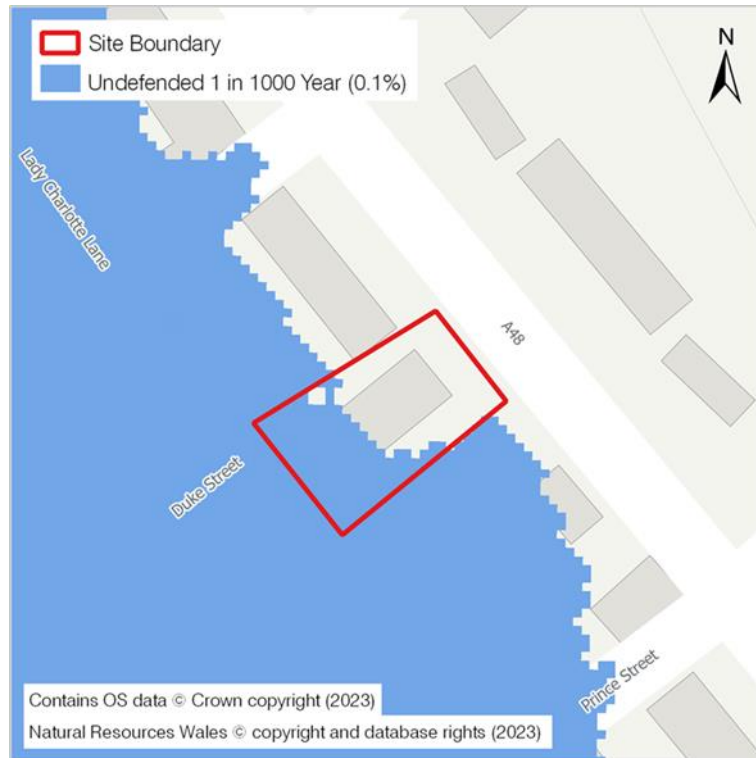
Figure 4 – Location of the site in the Development Advice Map (DAM)



Based on NRW vulnerability classification system outlined in Figure 2 within TAN15, the proposed development would be classed as highly vulnerable development. Based on the vulnerability classification and the site's location within Zone C2, the development would not normally be permissible. Zone C2 is typically associated with the undefended 1 in 1000 year flood extent (fluvial in this instance) (Figure 5). The modelled flood level at this event on site is 6.87mAOD. Therefore, the floor level of the building is considered to be elevated approximately 0.92m above the flood level

associated with this event. The site should therefore not be considered under the typical Zone C2 classification (where residential development would normally not be permissible) and is deemed appropriate in its location.

Figure 5 – Undefended 1 in 1000 year Fluvial Flood Extent



3.2 TAN 15 Requirements

This section outlines how the proposed development is suitable in its location, in-line with the requirements of TAN15.

“Section 5” Nature of development or land use.

This section outlines how the proposed development is suitable in its location, in-line with the requirements of TAN15 “Section 5” – Nature of development or land use. As mentioned in Section 3.1, the site should not be considered as under Zone C2 and is therefore deemed acceptable in its location.

“Section 6” – Justifying the location of the development.

Section 6.2 of TAN15 outlines that development in Zone C2 should be justified in its location. Our assessment of flood risk within Section 2 indicates that the floor level of the development is elevated above the modelled 1 in 100 year + 30% CC and 1 in 1000 year flood levels to mitigate against any residual flooding.

“Section 7” & “Appendix 1” – Assessing flooding consequences.

Section 7 of TAN15 indicates that the potential consequences of a flooding event for the new development should be considered and found to be acceptable.

Section 7.2 of TAN15 states that whether a development should proceed or not will depend upon whether the consequences of flooding of that development can be managed down to a level which is acceptable for the nature/type of development being proposed, including its effects on existing development. Therefore, considerations have been outlined within Section 3.3 of this FCA to demonstrate how the development can be made as safe as possible with minimal risk to life and minimal damage to property.

It is recommended that the future occupiers of the proposed dwelling have a Personal Flood Plan in use. A template of this is included as Appendix C for reference. This is in line with A1.12 of Appendix 1 of TAN15. Access/egress is discussed in Section 3.3 of this FCA.

3.3 Design Principles for Development

It is recommended that the following design principles should be incorporated to demonstrate its long-term resilience and resistance to residual flood risk. These recommendations are in line with Communities and Local Government guidance: Flood Resilient Construction of New Buildings.

Flood Resilience & Recoverability

The following recommendations are made to bolster the proposed developments resilience and accelerate its recoverability immediately following any localised flooding.

External fixtures such as cable/duct entries or airbricks below the assumed floor level (7.79mAOD) should be either sealed (cables/ducts) or use a self-closing equivalent in the case of airbricks. Furthermore, Non-Return Valves (NRVs) should be installed to all drainage outlets to mitigate against residual risk of surcharge from the public sewer. Where the floor level of the adjoining building at the rear of the site is lower than that of the main building (existing church) it is recommended that wooden skirting should be avoided where possible or treated with an adequate flood resilient sealant, flood-resilient wall renders and sealants should be used up to the design flood level (6.95mAOD) in order to reduce the impacts of any residual flooding. Wherever possible, the raising of low-level electrical equipment to above 6.95mAOD should be undertaken to mitigate against any residual flood risk. This includes isolation points, sockets, and fuse boards. The storage of any mobile electrical items should also be made above this level where possible.

In line with the Welsh Government's National Standards for Sustainable Drainage Systems (SuDS), approval from the SuDS Approving Body (SAB) is not required (as there is no construction area). However, it is recommended that positive drainage should be confirmed.

Flood Awareness

As stated previously, a Personal Flood Plan should be in use to ensure that the client is aware of the potential risks from flooding in the locality, as well as understanding what to do in the instance of a potential flood event. The NRW Personal Flood Plan template can be seen within Appendix C. It is also

recommended that the residents of the proposed change of use dwelling register to the NRW Flood Alert service⁹ as a precaution.

In the event of flooding in the locality, safe access/egress is achievable away to the south-east of the site along Margan Road (the A48), as seen in Figure 6.

Figure 6 – Potential access/egress route for the site



⁹ <https://naturalresources.wales/flooding/sign-up-to-receive-flood-warnings/?lang=en>

4 Conclusion

The site has been assessed for flood risk from a variety of flood sources and based upon detailed analysis of anecdotal and modelled flood risk information, this FCA has identified that fluvial risk is considered low. The risk of flooding from surface water, groundwater, reservoir failure and artificial sources is considered to be low. Tidal flood risk is deemed negligible.

This report has outlined a series of recommendations that should be considered to mitigate against residual flood risk on site, and to demonstrate that the consequences of flooding can be managed down to a level which is acceptable for the nature/type of development being proposed. This primarily focused on flood resilience measures and the creation of a Personal Flood Plan (which should be informed by registration to the NRW Flood Alert Service).

This report therefore demonstrates, in-line with TAN 15 development policy that the proposed dwelling:

- Is suitable in the location proposed and will be adequately flood resistant and resilient;
- Is unlikely to place additional persons at risk of flooding due to the floor levels being elevated above the 1 in 100 year + 30% CC and 1 in 1000 year flood levels associated with the extent, and through the use of an appropriate Personal Flood Plan; and,
- Is unlikely to increase flood risk elsewhere as a result of the proposed change of use through the loss of floodplain storage, impedance of flood flows or increase in surface water runoff.

Limitations of this report

This report has been prepared by Ashfield Flood Risk Solutions Limited (Ashfield) for the sole benefit of the client.

This report has been prepared solely for the benefit of Kyle Morgan (the “Client”) and has not been assigned to any other third parties. If reliance on this report was required by a third party, this could be arranged for an agreed fee. This report should not be used by the client in relation to any other matters not covered specifically by the scope of the report. If this report does not contain a signature in the Document Control window, then this is an uncontrolled electronic copy and should not be relied upon by the client or any other recipient, as Ashfield cannot give assurances on the source or content of the document. Ashfield has used all reasonable skill, care and diligence in the preparation of this report.

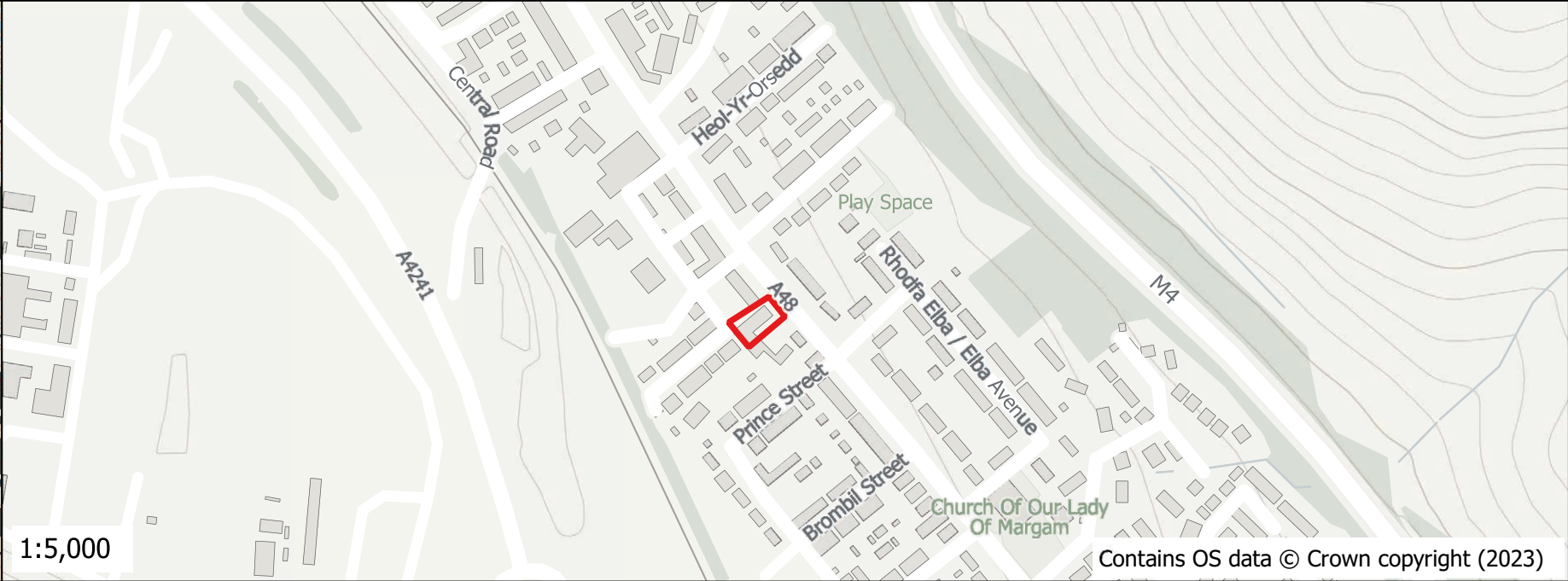
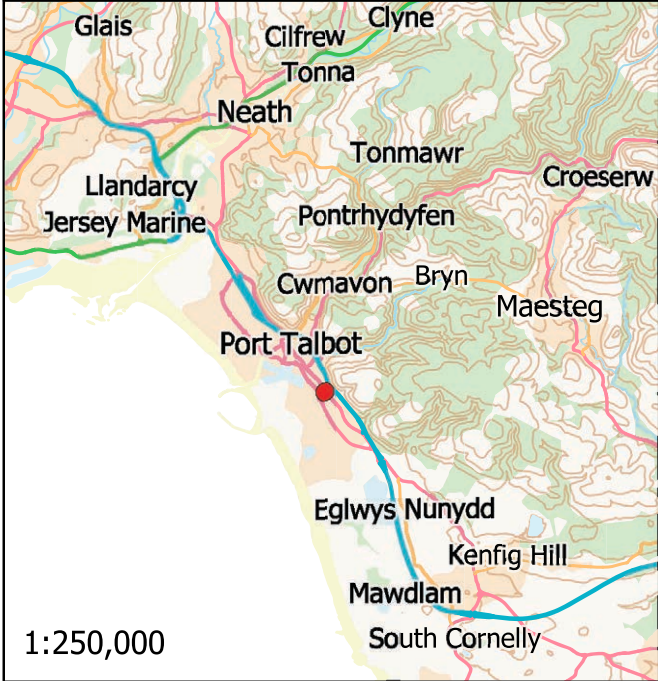
The Flood Risk Assessment report has been designed to satisfy planning requirements, as outlined in Section 1. It is a desktop review of information provided by the client and from selected private and public databases. It only includes a site investigation where specifically referenced. This report does not make a detailed site-specific assessment of the suitability of the existing drainage on the Site. Ashfield accepts no responsibility for the accuracy or completeness of third party data reviewed within this assessment.

This report is provided under Ashfield Solutions Limited Standard Terms and Conditions.

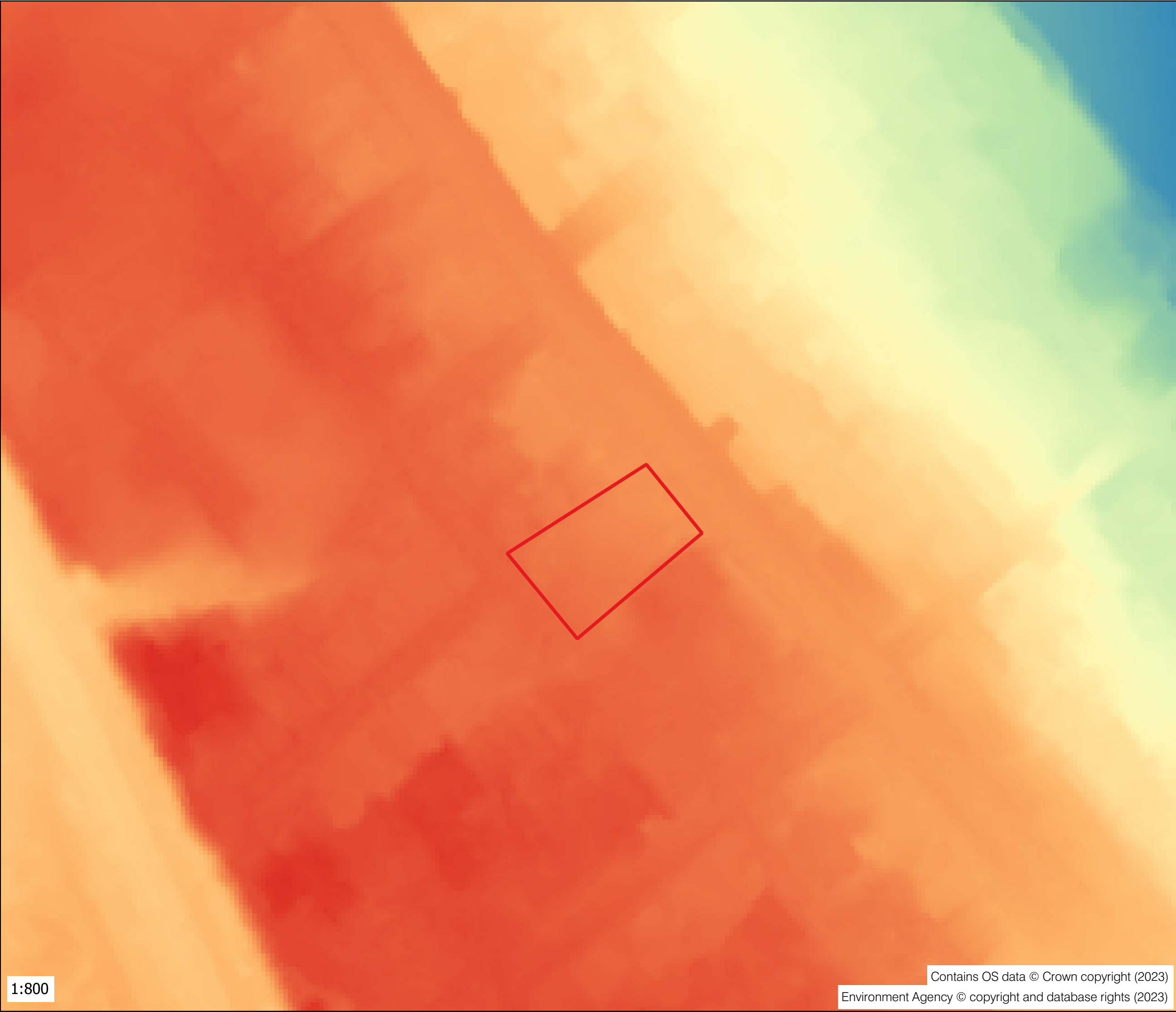
Drawings



- Legend
- Site Boundary
 - Site Location



Client			Kyle Morgan		
Project			39 Margan Road, Port Talbot, SA13 2BN		
Title			Site Location Plan		
Report No.	Drawing No.	Revision			
184623-F01	01	-			
Scale	Date	Frame Size			
As Shown	09/10/2023	A3			
Produced By	Drawn By	Approved By			
LC	LC	HP			
ASHFIELD SOLUTIONS GROUP					



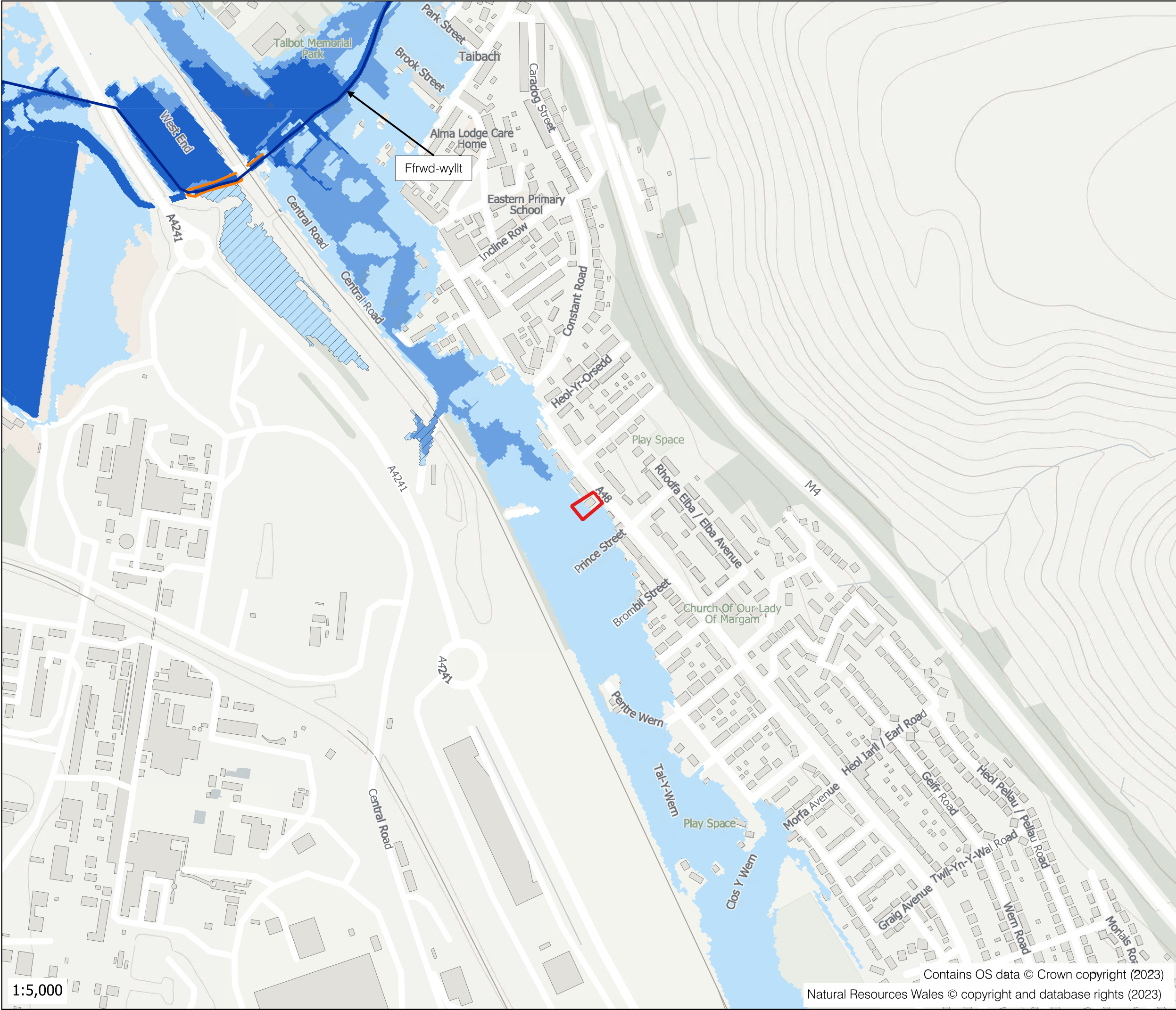
Legend

 Site Boundary

LiDAR Derived Ground Levels (mAOD)

	= < 45.00
	55.00
	65.00
	75.00
	85.00
	95.00
	105.00
	115.00
	125.00
	135.00
	145.00
	155.00
	165.00
	175.00
	185.00
	= > 195.00

Client		
Kyle Morgan		
Project		
39 Margan Road, Port Talbot, SA13 2BN		
Title		
LiDAR Derived Ground Levels Plan		
Report No.	Drawing No.	Revision
184623-F01	02	-
Scale	Date	Frame Size
As Shown	09/10/2023	A3
Produced By	Drawn By	Approved By
LC	LC	HP



Legend

- Site Boundary
- Main Rivers
- Flood Defences
- Areas Benefiting from Flood Defences

NRW Flood Risk from Rivers

- High
- Medium
- Low

Client		
Kyle Morgan		
Project		
39 Margan Road, Port Talbot, SA13 2BN		
Title		
NRW Flood Map for Planning (Rivers)		
Report No.	Drawing No.	Revision
184623-F01	03	-
Scale	Date	Frame Size
As Shown	09/10/2023	A3
Produced By	Drawn By	Approved By
LC	LC	HP

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Legend

 Site Boundary

NRW Flood Risk from Sea

 High

 Medium

 Low

Client

Kyle Morgan

Project

39 Margan Road, Port Talbot, SA13 2BN

Title

NRW Flood Map for Planning (Sea)

Report No.

184623-F01

Drawing No.

04

Revision

-

Scale

As Shown

Date

09/10/2023

Frame Size

A3

Produced By

LC

Drawn By

LC

Approved By

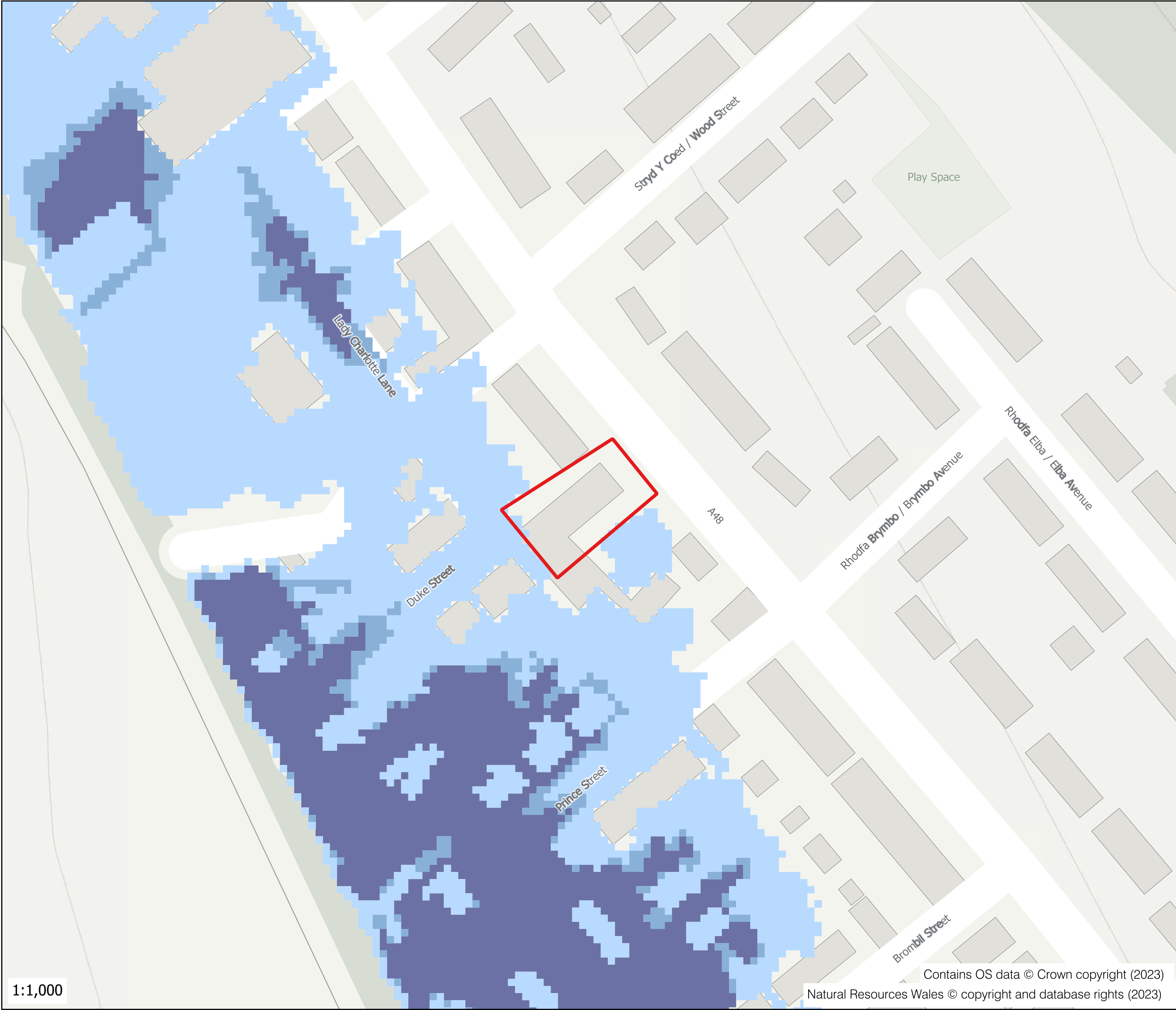
HP



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1:5,000



Legend

Site Boundary

NRW Flood Risk from Surface Water and Small Watercourses

High

Medium

Low

Client			Kyle Morgan		
Project			39 Margan Road, Port Talbot, SA13 2BN		
Title			NRW Risk of Surface Water		
Report No.		Drawing No.		Revision	
184623-F01		05		-	
Scale		Date		Frame Size	
As Shown		09/10/2023		A3	
Produced By		Drawn By		Approved By	
LC		LC		HP	

1:1,000

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- Legend
- Site Boundary
 - Risk of Reservoir Flooding

Client		
Kyle Morgan		
Project		
39 Margan Road, Port Talbot, SA13 2BN		
Title		
NRW Risk of Flooding from Reservoir Failure		
Report No.	Drawing No.	Revision
184623-F01	06	-
Scale	Date	Frame Size
As Shown	09/10/2023	A3
Produced By	Drawn By	Approved By
LC	LC	HP

Appendices

Appendix A

Site Location Plan



NO.	NOTES
1	All dimensions in millimetres unless otherwise stated.
2	Do not scale off drawing. All dimensions to be checked on site by contractor.
3	Drawings to be used for purposes of Planning Application only.
4	These are not Construction Drawings.
5	The contractor is to set out, check and coordinate all dimensions on site during the course of works.

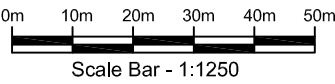
DRAWING NUMBER; 2342 – AL(00)01.



SITE BOUNDARY SHOWN IN RED



BLOCK PLAN – SCALE 1:500



LOCATION PLAN – SCALE 1:1250



REVISIONS :
B. 27/06/23 PLANNING READY
KNJ

SHEET TITLE:
AS SHOWN.

PROJECT DESCRIPTION:
PROPOSED CONVERSION OF EXISTING CHAPEL
TO RESIDENTIAL USE AT 39, MARGAN ROAD,
PORT TALBOT, SA13 2BN.
FOR MR KYLE MORGAN.

atrium
Planning Consultants
MOBILE: 07505 210952
EMAIL: atriumplanning@icloud.com

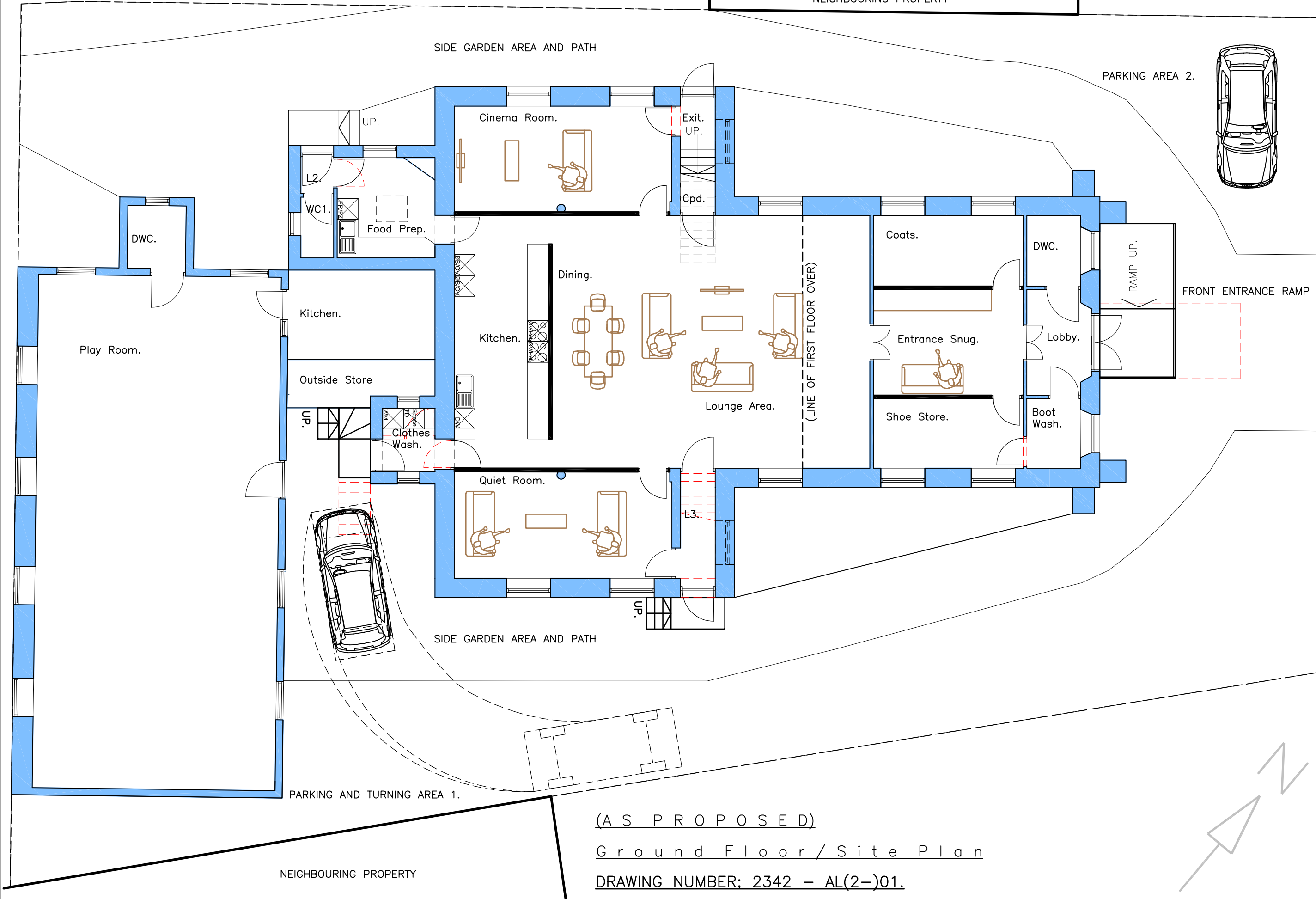
DATE:
JUNE. 23.
SCALE:
AS SHOWN
SHEET:
A-3

Appendix B

Proposed Plans



NO.	NOTES
1	All dimensions in millimetres unless otherwise stated.
2	Do not scale off drawing. All dimensions to be checked on site by contractor.
3	Drawings to be used for purposes of Planning Application only.
4	These are not Construction Drawings.
5	The contractor is to set out, check and coordinate all dimensions on site during the course of works.



REVISIONS :
B. 27/06/23 PLANNING READY

SHEET TITLE:
AS SHOWN.

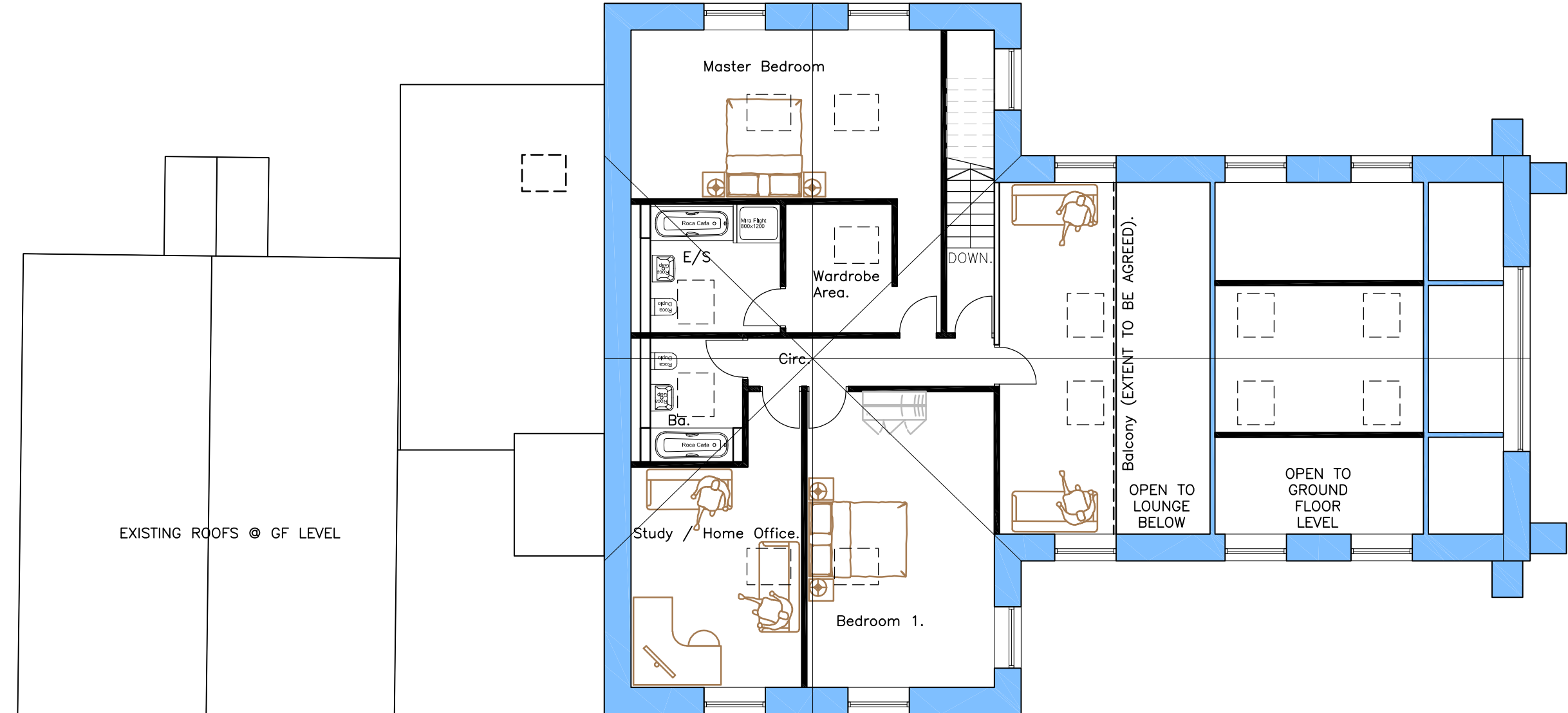
PROJECT DESCRIPTION:
PROPOSED CONVERSION OF EXISTING CHAPEL
TO RESIDENTIAL USE AT 39, MARGAN ROAD,
PORT TALBOT, SA13 2BN.
FOR MR KYLE MORGAN.



DATE:
JUNE. 23.
SCALE:
AS SHOWN
SHEET:
A-3



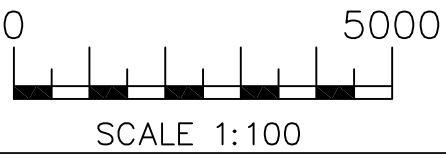
NO.	NOTES
1	All dimensions in millimetres unless otherwise stated.
2	Do not scale off drawing. All dimensions to be checked on site by contractor.
3	Drawings to be used for purposes of Planning Application only.
4	These are not Construction Drawings.
5	The contractor is to set out, check and coordinate all dimensions on site during the course of works.



(A S P R O P O S E D)

F i r s t F l o o r P l a n

DRAWING NUMBER; 2342 – AL(2–)02.



REVISIONS :
B. 27/06/23 PLANNING READY
KNJ

SHEET TITLE:
AS SHOWN.

PROJECT DESCRIPTION:
PROPOSED CONVERSION OF EXISTING CHAPEL
TO RESIDENTIAL USE AT 39, MARGAN ROAD,
PORT TALBOT, SA13 2BN.
FOR MR KYLE MORGAN.



DATE:
JUNE. 23.
SCALE:
AS SHOWN
SHEET:
A-3

Appendix C

NRW Personal Flood Plan Template



Personal Flood Plan

Name:

Useful numbers:

General contact list	Company name	Contact name	Telephone
Floodline	Natural Resources Wales		0345 988 1188
Electricity provider			
Gas provider			
Water company			
Telephone provider			
Insurance company & policy number			
Local council			
Local radio station			
Travel / weather info			

Key locations:

Service cut-off	Description of location
Electricity	
Gas	
Water	

Who can help / who can you help?

Relationship	Name	Contact details	How can they / you help?
Relative			
Friend or neighbour			

What can you do if a flood is expected in your area?

Actions	Location
Home Move furniture and electrical items to safety	
Put flood boards, polythene and sandbags in place	
Make a list now of what you can move away from the risk	
Turn off electricity, water and gas supplies	
Roll up carpets and rugs	
Unless you have time to remove them hang curtains over the rods	
Move sentimental items to safety	
Put important documents in polythene bags and move to safety	
Garden and outside Move your car out of the flood risk area	
Move any large or loose items or weigh them down	
Business Move important documents, computers and stock	
Alert staff and request their help	
Farmers move animals and livestock to safety	
Evacuation – prepare a flood kit in advance Inform your family or friends that you may need to leave your home	
Get your flood kit together and include a torch, warm and waterproof clothing, water, food, medication, toys for children and pets, rubber gloves and wellingtons	

What can I do now?

Put important documents out of flood risk and protect in polythene ☐	Look at the best way of stopping floodwater entering your property ☐
Check your insurance covers you for flooding ☐	Make a flood plan and prepare a flood kit ☐
Find out where you can get sandbags ☐	Identify what you would need to take with you if you had to leave your home ☐
Identify who can help you / who you can help ☐	Understand the flood warning codes ☐

Are you signed up to receive flood warnings?

☐ If not call Floodline on **0345 988 1188** to see if your area receives free flood warnings.

Let us know when you've completed your flood plan by calling Floodline on **0345 988 1188**. This will help us learn more about how people are preparing for flooding.

There are a range of flood protection products on the market to help you protect your property from flood damage. A directory of these is available from the National Flood Forum at www.bluepages.org.uk