

Flood Consequence Assessment

33 Furnace Terrace, Melyn, Neath, SA11 2EE

23 April 2026

Quantum Survey & Project Management Ltd



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Distribution

Quantum Survey & Project Management Ltd
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Executive Summary

Ashfield Flood Risk Solutions ("Ashfield") were commissioned by Brennan Architectural Design on behalf of Quantum Survey & Project Management Ltd ("the client") to undertake a Flood Consequence Assessment ("FCA"), for 33 Furnace Terrace, Melyn, Neath, SA11 2EE ("the site"). The proposed development comprises the replacement of an existing building that was damaged by a fire at the property in 2025, with a like-for-like replica. The redevelopment will not alter the existing layout or configuration of the building, and there will be no increase in the overall building footprint.

Natural Resources Wales (NRW) flood maps indicates that the existing dwelling is located within Tidal Flood Zone 3 and has a Medium risk of tidal flooding when accounting for flood defences. Flood model data provided by NRW indicates that the existing dwelling is at risk of tidal flooding in a 1 in 200 year or greater flooding event in both the present day (2023) and when accounting for sea level rise (2123). Flood depths in the present day are projected to range between 0.34m in the 1 in 200 year flooding event, up to 0.62m in the 1 in 1000 year flooding event. When accounting for sea level rise (2123), tidal flood depths at the existing dwelling are projected to exceed 1m in both the 1 in 200 year and 1 in 1000 year flooding events. Therefore, the overall risk to the site from tidal flooding is Low to Moderate in the present day and Moderate to High when accounting for sea level rise.

NRW flood maps indicates that the existing dwelling is located within Fluvial Flood Zone 2 and has a low risk of fluvial flooding when accounting for flood defences. The NRW flood model data indicates that the existing dwelling is elevated above all modelled fluvial flooding scenarios in both the present day and when accounting for a 20% climate change uplift. In summary, the overall risk to the site from fluvial flooding is Low.

The risk of flooding from surface water, groundwater and artificial sources is Low. The risk of reservoir failure is Negligible.

Under Section 9 of Technical Advice Note 15 (TAN15), the proposed like-for-like replacement of a fire-damaged building is classed as 'highly vulnerable' and is located within Tidal Flood Zone 3. While TAN15 advises that such development should only occur in exceptional circumstances, the proposal is considered to comply, as it reinstates the existing building without increasing vulnerability. Although the site is predicted to experience internal flooding exceeding 1m during a 1 in 200 year plus climate change event, TAN15 allows flexibility for redevelopment, and the following appropriate measures will improve the site's flood resistance and resilience:

- Install flood resistance measures, including flood barriers, self-closing airbricks (below 0.6m), non-return valves on drainage/external pipes, and sealing all wall penetrations below 0.6m.
- Implement external waterproofing, raise or adapt electrical installations, use flood-resilient materials for floors, walls, and skirting, and improve fixtures and fittings (e.g., elevated kitchen units and white goods) to enhance recoverability.
- All residents should sign-up for Natural Resources Wales Flood Alerts and Warnings.

This report therefore demonstrates that by incorporating the recommended key principles, the proposed development:

- Is suitable in the location proposed and will be adequately flood resistant and resilient;
- Is unlikely to place additional persons at risk of flooding, and will offer a safe means of access and egress with the use of an appropriate Flood Warning and Evacuation Plan; and,
- Is unlikely to increase flood risk elsewhere as a result of the proposed development 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 Brennan Architectural Design on behalf of Quantum Survey & Project Management Ltd (“the client”) to undertake a Flood Consequence Assessment (“FCA”), for 33 Furnace Terrace, Melyn, Neath, SA11 2EE (“the site”). The site location is illustrated in Figure 1.

This report has been prepared in support of a planning application for the proposed replacement dwelling following fire damage. The existing and proposed plans can be seen within Appendix A for context and will be discussed further in Section 1.3. The details of standard limitations of this report are included within Section 1.5.

Figure 1 - Site Location



1.2 Aim and Objectives

This assessment provides a site-specific appraisal of flood sources, hazards, and mitigation options, aligned with current technical guidance. It follows the Technical Advice Note 15 (TAN15) as the core framework for evaluating and managing flood risk. The objectives of this assessment are:

- Assess whether the proposed development is likely to be affected by flooding now and in the future because of Climate Change;
- Provide an assessment of the vulnerability of the proposed development and its suitability in relation to the identified flood risk, in accordance with the Technical Advice Note 15 (TAN15) and local authority guidance.
- Provide an opinion of the likely impacts of the development on flooding elsewhere;



- Where required, present flood mitigation measures necessary to keep the proposed development and occupants safe.

1.3 Development Proposals

The proposed development, as seen in Appendix A, comprises the replacement of an existing building that was damaged by a fire at the site in 2025, with a like-for-like replica. The redevelopment will not alter the existing layout or configuration of the building, and there will be no increase in the overall building footprint. The proposal is therefore intended to reinstate the property to its former condition, with no material change to its scale, form, or spatial arrangement.

1.4 Information Sources

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

- Planning Policy Wales Technical Advice Note (TAN) 15 - Welsh Assembly Government, March 2025;
- Planning Application Existing and Proposed Plans & Elevations (dwg no: 2026-001-Furn) – Unknown, February 2026;
- Clean – 33 Furnace Terrace SA11 2EE – Welsh Water, April 2026;
- Waste – 33 Furnace Terrace SA11 2EE – Welsh Water, April 2026;
- Neath Port Talbot County Borough Council (NPTCBC) Strategic Flood Consequences Assessment (SFCA) Stage 1 & 2 – NPTCBC, September 2014;
- NPTCBC Preliminary Flood Risk Assessment (PFRA) – NPTCBC, March 2011;
- NPTCBC PFRA Addendum – NPTCBC, December 2017;
- NPTCBC Flood Risk Management Plan (FRMP) –NPTCBC, December, 2015;
- NPTCBC Local Flood Risk Management Strategy (LFRMS) – NPTCBC, June, 2013;
- Enhanced Flood Model data ATI-29639a requested from Natural Resources Wales (NRW) for the following:
 - Product 5 - Flood modelling and hydrology reports
 - Product 6 - Flood model output data
- 1m resolution LiDAR data – downloaded online April 2026;
- Natural Resources Wales interactive flood maps – accessed online April 2026; and,
- British Geological Survey (BGS) Drift & Geology Maps - accessed online April 2026.

1.5 Report Limitations

This assessment of flood risk is based on the latest available open government flood mapping data. 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 are valid only to the extent that the information provided to Ashfield was accurate and complete at time of receipt.



2 Site Overview

2.1 Site Setting

The site is located in the postcode SA11 2EE and occupies an area of approximately 128m² (0.013ha). The site is located 367m southwest of Melyn Park and comprises of an existing fire damaged dwelling. The site can be accessed via Furnace Terrace to the west. Surrounding land uses are summarised in Table 1.

Table 1 - Surrounding land uses

North	Residential properties
East	
South	
West	Furnace Terrace and Railway line

2.2 Site Topography

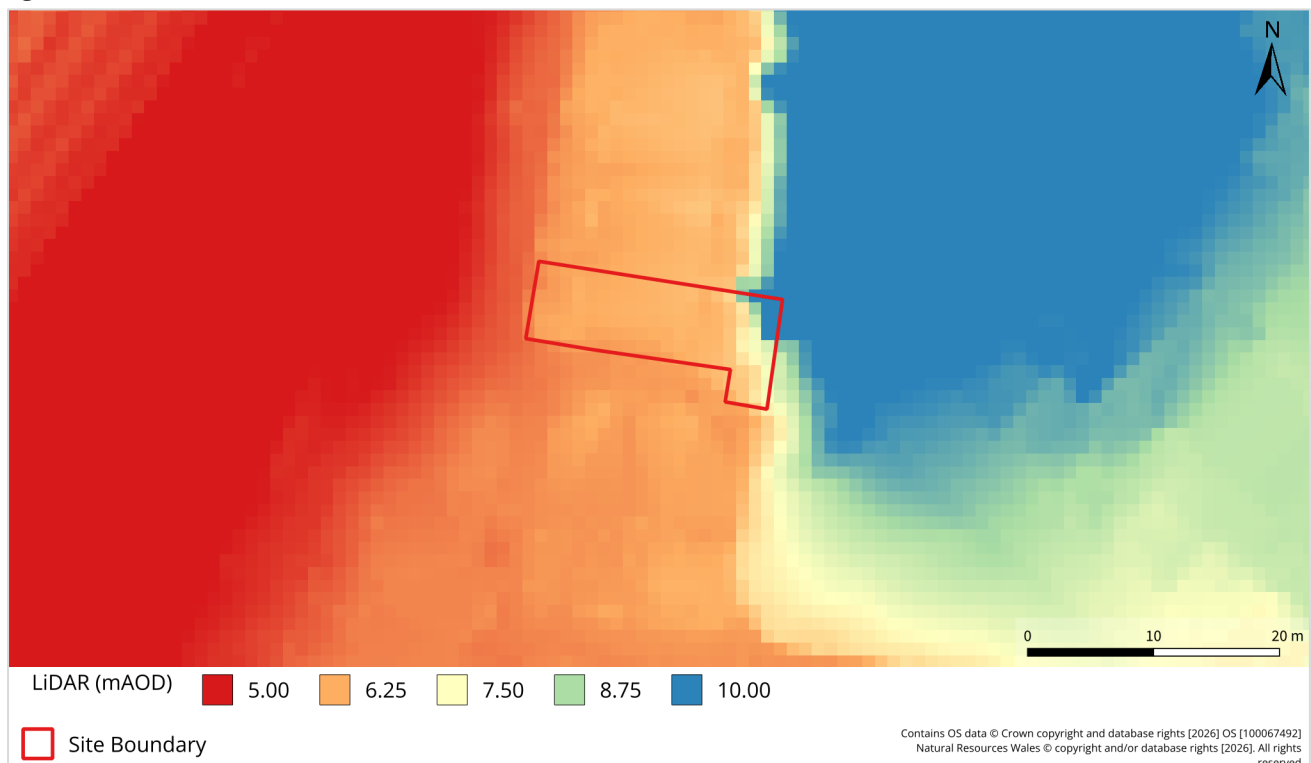
In the absence of a site specific topographic survey, 1m resolution Light Detection and Ranging (LiDAR) data has been downloaded for the site and local area. A visual illustration of the LiDAR is presented in Figure 2.

Ground levels across the site generally fall towards the west, with the highest level of approximately 10.58mAOD located in the north-east corner and the lowest level of approximately 5.89mAOD in the south-west corner. Average ground levels across the site are 6.63mAOD.

Based on the existing and proposed drawings provided in Appendix A, the building entrances are set approximately 0.15m above the surrounding external ground levels. Ground levels at the front entrance are approximately 6.28mAOD, and it is therefore understood that both the existing and proposed Finished Floor Level (FFL) of the dwelling is 6.43mAOD. This level has been adopted for the assessment in Section 4 to inform the estimation of potential flood levels at the property.



Figure 2 - LiDAR Derived Ground Levels



2.3 Local Hydrology

The nearest Natural Resources Wales (NRW) designated Main River to the site is the tidally influenced River Neath, located approximately 544m to the north-west. This flows south before discharging into the Bristol Channel approximately 4.3km to the south. The site is located within the tidal extent of the River Neath.

The nearest ordinary watercourse to the site is an unnamed watercourse, located approximately 460m to the south. This flows south towards its confluence with the River Neath approximately 1.6km southwest of the site.

The Neath Canal is located approximately 120m to the west of the site. Local hydrological features are illustrated in Figure 3 for reference.



Figure 3 - Local Hydrology



2.4 Local Drainage

A drainage plan was made available to Ashfield to inform this report. This was undertaken by Welsh Water in April 2026 and is included as Appendix B for reference.

A review of the drainage plans indicates that the site has a combined foul and surface ware drainage network, that connects to a private sewer transfer beneath the site's eastern garden. This private sewer transfer connects to the wider public network beneath the footpath adjacent to Furnace Terrace. The combined public network flows to the south, then west towards a pumping station on the other side of the railway line. There is to be no alterations to the site's existing drainage network as part of this proposed development.

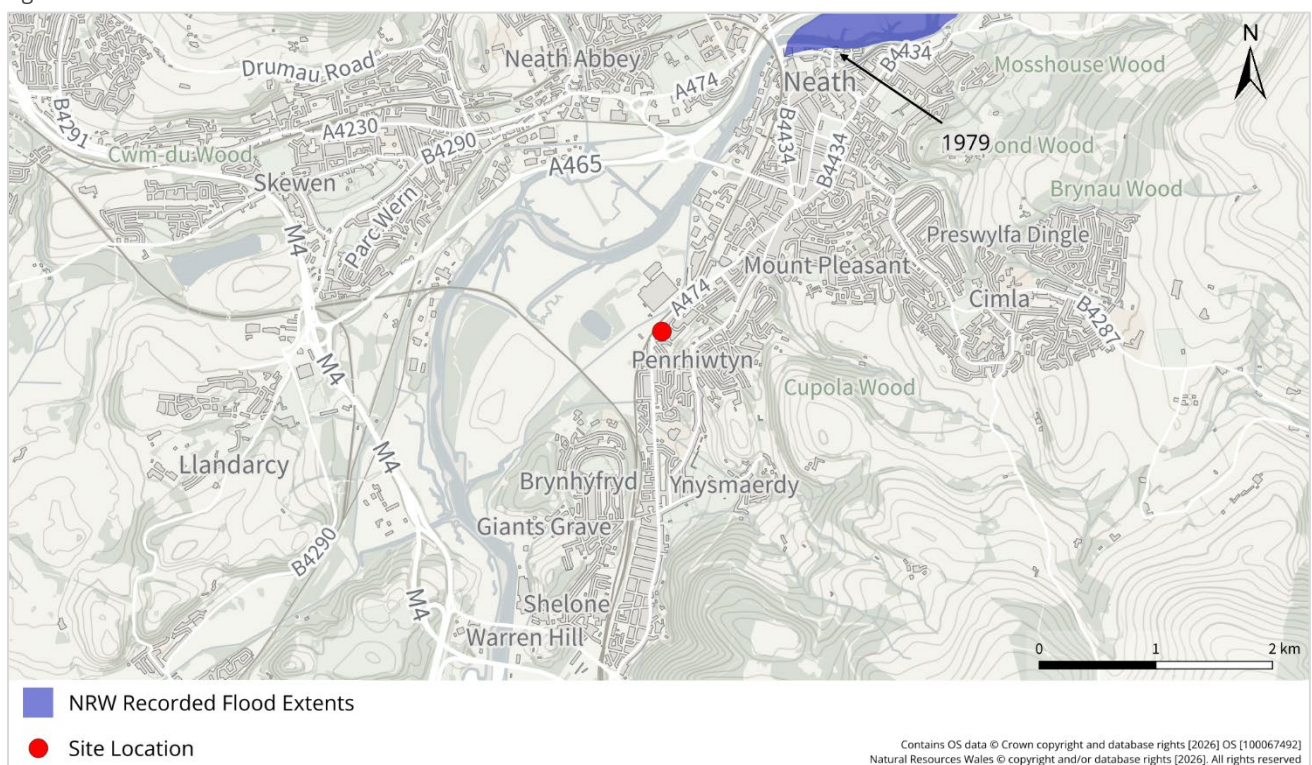


3 Past Flooding

3.1 National Records

The NRW Recorded Flood Outlines dataset is a compilation of historical flood events that have occurred across Wales over the past century. Figure 4 indicates that there are no reportable incidents of flooding identified at or within the vicinity of the site. The nearest recorded flooding event identified by NRW occurred in 1979 approximately 2km northeast of the site. This incident is related to the River Neath; however, this event did not impact the site.

Figure 4 -NRW Recorded Flood Outlines





3.2 Local Authority and Strategic Flood Information

Table 2 - Information sources used

Information Source	On Site	Within 250m
PFRA (2011)	-	Several incidents of flooding have been recorded within the Neath area, including the 1979 incident identified by the NRW open-source data of recorded flood outlines. This incident is recorded as the highest rainfall event on record in the Neath catchment, at the time the PFRA was written. More recent events have been reported in 1998, 2007 and 2008. The flooding event in 1998 occurred when the River Neath overflowed into the canal, exceeding the canal channel capacity. It could not be confirmed if the site was impacted by the 1998, 2007 and 2008 flooding events.
PFRA Addendum (2017)	-	Flooding was reported across the Swansea Valley and surrounding areas in 2016. The site was not indicated to have been affected by these flooding events.
Level 1 SFCA (2014)	--	13 records of historic flooding in relation to heavy rain incidents, sewer flooding and culvert blocking have been identified within the Borough. No further information was provided in regard to the date or location of these incidents. It could not be confirmed if the site was impacted by these events.
Local Flood Risk Management Strategy (2013)	-	-
Flood Risk Management Plan (2015)	-	-

3.3 Additional Information

A review of online articles indicates that there was flooding across the Neath area in 2020¹ and 2022². In 2020, the Neath area was impacted by Storm Dennis, which resulted in several areas within Neath experiencing flooding from the River Dulais exceeding its channel capacity, combined with the sewer network exceeding its hydraulic capacity. It was not indicated that the site was impacted by this flooding event.

In 2022, flooding was reported within the Melyn area. The cause of the flooding was attributed to several culverts within the area overflowing. It could not be confirmed if the site was impacted by this flooding event.

Historic Flooding Summary

The NRW Recorded Flood Outlines dataset indicates there are no reportable incidents of flooding identified by NRW at the site. Online sources indicates that there have been several reports of flooding within Neath in 2007, 2008, 2016, 2020 and 2022. It could not be confirmed if the site was impacted by these events.

¹ <https://naturalresourceswales.gov.uk/about-us/news-and-blogs/news/feedback-sought-on-flood-risk-management-options-at-aberdulais/?lang=en>

² <https://www.itv.com/news/wales/2022-11-04/business-devastated-and-locals-traumatised-as-community-floods-again?>



4 Flood Risk Evaluation

The following sections provide an evaluation of the flood risk posed to the site. Consideration is given to the severity of flood risk to the site as a whole, making use of existing flood mapping, local strategic studies and available topographic information.

4.1 Tidal Flood Risk

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 Flood Mapping

The NRW Flood Risk Assessment Wales (FRAW) (Sea) mapping divides the floodplain into risk-based categories based on the present day, defended flood risk to the site. The following is the definition of the risk categories:

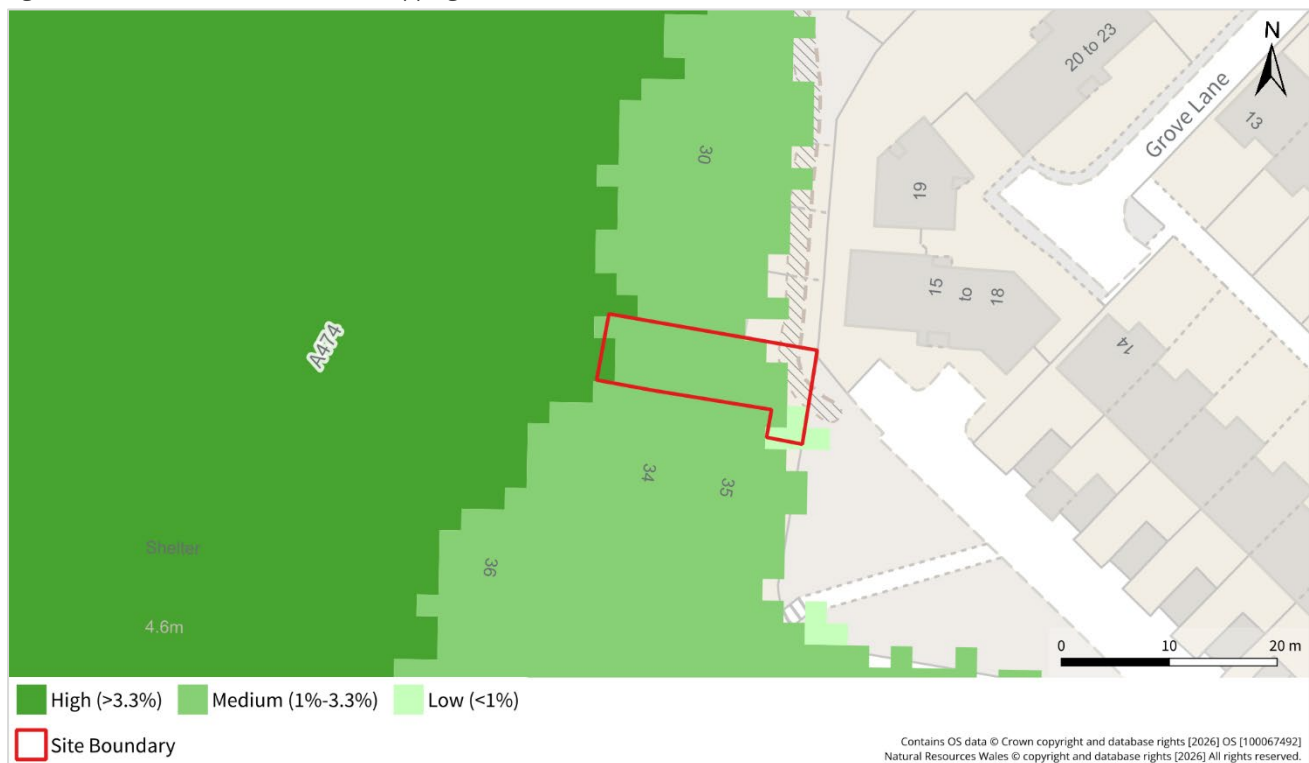
- **High Risk** – Each year, this area has a chance of flooding of greater than 1 in 30 (3.3%).
- **Medium Risk** - Each year, this area has a chance of flooding of between 1 in 200 (0.5%) and 1 in 30 (3.3%).
- **Low Risk** - Each year, this area has a chance of flooding of between 1 in 1000 (0.1%) and 1 in 200 (1%).

If an area is not covered by one of the above categories, it is considered to be at very low risk of flooding, which is defined as less than 1 in 1000 (0.1%) chance of flooding each year.

The NRW FRAW Risk from Seas mapping (Figure 5) indicates there is a medium ($\geq 0.5\%$ - $< 3.3\%$) annual probability of internal flooding from tidal sources at the site.



Figure 5 - NRW FRAW Risk from Seas mapping



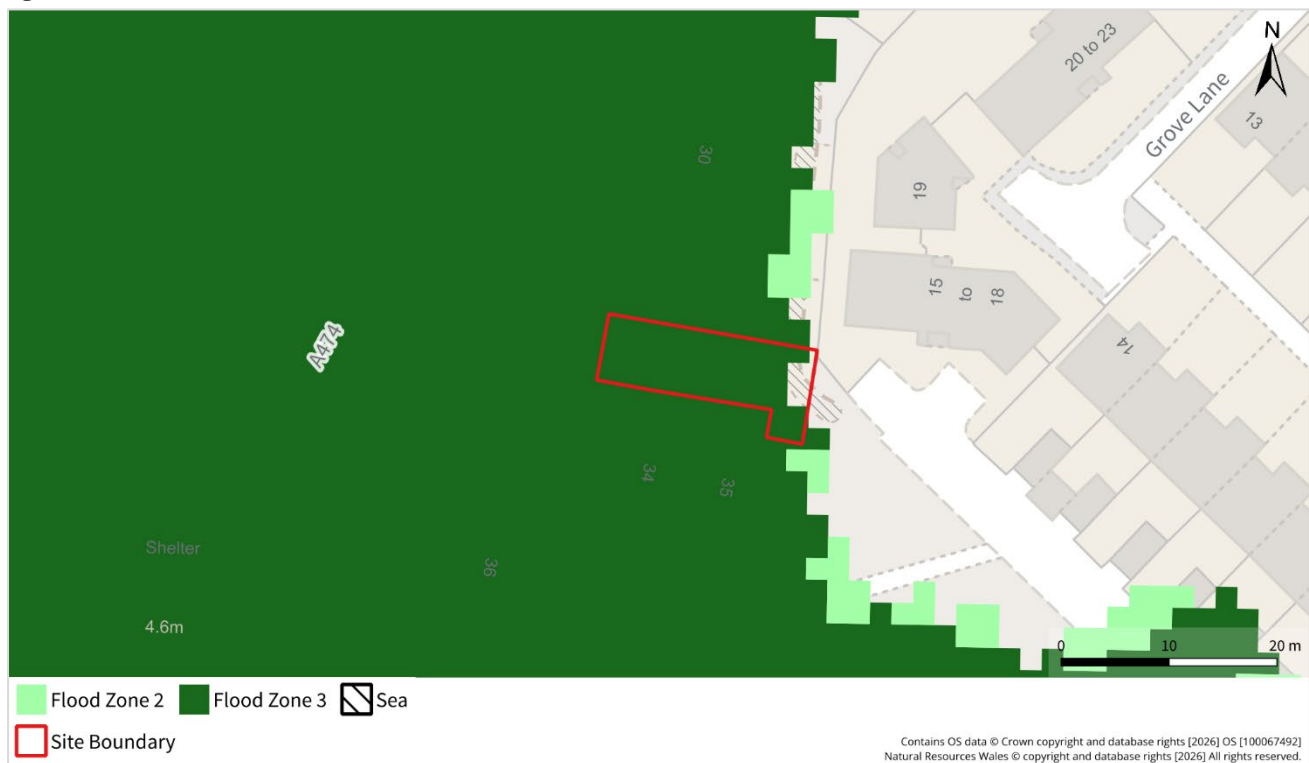
The NRW Flood Map for Planning (FMFP) (Seas) divides the floodplain into risk-based categories and provides an indication of flood risk for the site, accounting for the impact of climate change and indicates the potential extent of flooding assuming no defences are in place. The Flood Zone categories are defined below:

- **Flood Zone 1** – Less than 1 in 1000 (0.1%) (plus climate change) chance of flooding in a given year.
- **Flood Zone 2** – Areas with less than 1 in 200 (0.5%) but greater than 1 in 1000 (0.1%) chance of flooding in a given year, including climate change
- **Flood Zone 3** – Areas with a greater than 1 in 200 (0.5%) chance of flooding in a given year, including climate change.
- **TAN 15 Defended Zone** – Areas where flood risk management infrastructure provides a minimum standard of protection against flooding from rivers of 1 in 100 (plus climate change and freeboard).

The NRW FMFP (Figure 6) indicates that the site is located within Flood Zone 3 for Seas.



Figure 6 - NRW FMFP



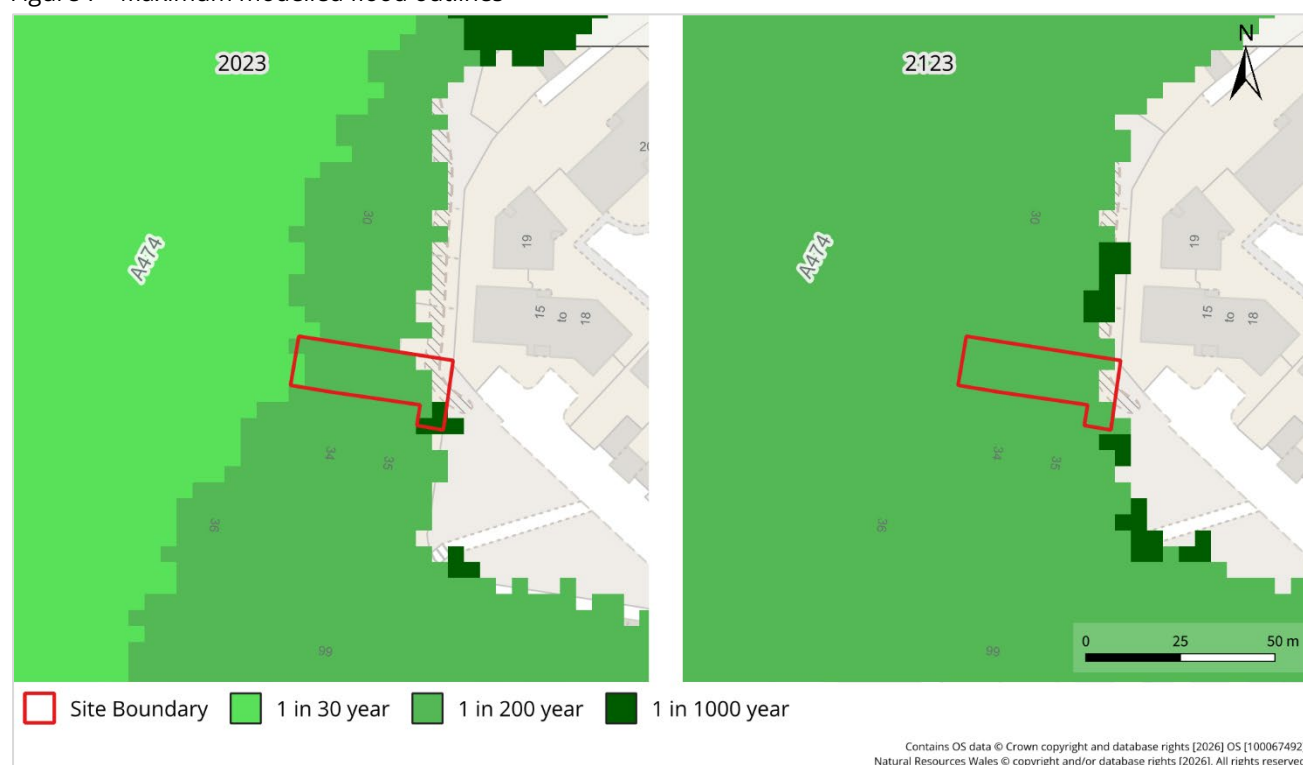
EA Flood Model Data

Ashfield requested the latest flood model data from NRW that relates to the site. NRW provided the Neath – Phase 2 Hydraulic Model published by JBA in March 2017 which was later updated in 2023. The model is a 1D/2D TUFLOW model. This allows for a detailed representation of the floodplain, using efficient techniques to modify the baseline ground elevation and model grid to define floodplain features which control flood mechanism.

Figure 10 shows the maximum modelled tidal flood extents for the site from the 2023 update. As seen in Figure 10, the tidal flooding is projected to encroach upon the site's western boundary in the 1 in 30 year scenario in the present day (2023). The model projects tidal flooding to affect both the external areas and the dwelling in the 1 in 200 year and 1 in 1000 year flooding events in both the present day (2023) and when accounting for sea level rise (2123).



Figure 7 - Maximum modelled flood outlines



The maximum flood levels, for each modelled return period, have been compared with the FFL (6.43mAOD) to calculate the maximum internal tidal flood depths projected at the dwelling. Additionally, the maximum tidal velocity at the dwelling has been reviewed for each of the modelled return periods. The results can be reviewed in Table 3 below.

Table 3 - Maximum flood level, calculated maximum flood depth and maximum velocity at the site

Return Period (Tidal Defended)	Maximum Flood Level (mAOD)	Calculated Flood Depth (m)	Velocity (m/s)
Present Day (2023)			
1 in 30 year	5.57	-0.86*	0.02
1 in 200 year	6.57	0.14	0.34
1 in 1000 year	6.96	0.53	0.62
Sea Level Rise (2123)			
1 in 200 year	7.44	1.01	0.98
1 in 1000 year	7.67	1.24	0.82

*FFL is elevated above the maximum projected flood level at the site

As seen in Table 3, the existing dwelling is projected to be at risk of tidal flooding in a 1 in 200 year or greater magnitude flooding event in both the present day (2023) and when accounting for sea level rise (2123). Flood depths in the present day are projected to range between 0.34m in the 1 in 200 year flooding event, up to 0.62m in the 1 in 1000 year flooding event.

When accounting for sea level rise (2123), tidal flood depths at the existing dwelling are projected to exceed 1m in both the 1 in 200 year and 1 in 1000 year flooding events.



Tidal Risk Summary

NRW flood maps indicates that the existing dwelling is located within Tidal Flood Zone 3 and has a Medium risk of tidal flooding. The NRW flood model data indicates that the existing dwelling is at risk of tidal flooding across in a 1 in 200 year or greater flooding event in both the present day (2023) and when accounting for sea level rise (2123). Flood depths in the present day are projected to range between 0.34m in the 1 in 200 year flooding event up to 0.62m in the 1 in 1000 year flooding event. When accounting for sea level rise (2123), tidal flood depths at the existing dwelling are projected to exceed 1m in both the 1 in 200 year and 1 in 1000 year flooding events. Therefore, the overall risk to the site from tidal flooding is Low to Moderate in the present day and Moderate to High when accounting for sea level rise. Further considerations are made within Section 5 to help mitigate against this identified risk in the long-term.

4.2 Fluvial Flood Risk

Fluvial flood risk comes from rivers and streams when they overflow, usually after heavy rain or long periods of wet weather. As discussed in Section 2.3, the nearest Main River to the site is the River Neath, located approximately 544m to the north-west. The nearest ordinary watercourse to the site is unnamed watercourse, located approximately 460m to the south.

NRW Flood Mapping

The NRW Flood Risk Assessment Wales (FRAW) (Rivers) mapping divides the floodplain into risk-based categories based on the present day, defended flood risk to the site. The following is the definition of the risk categories:

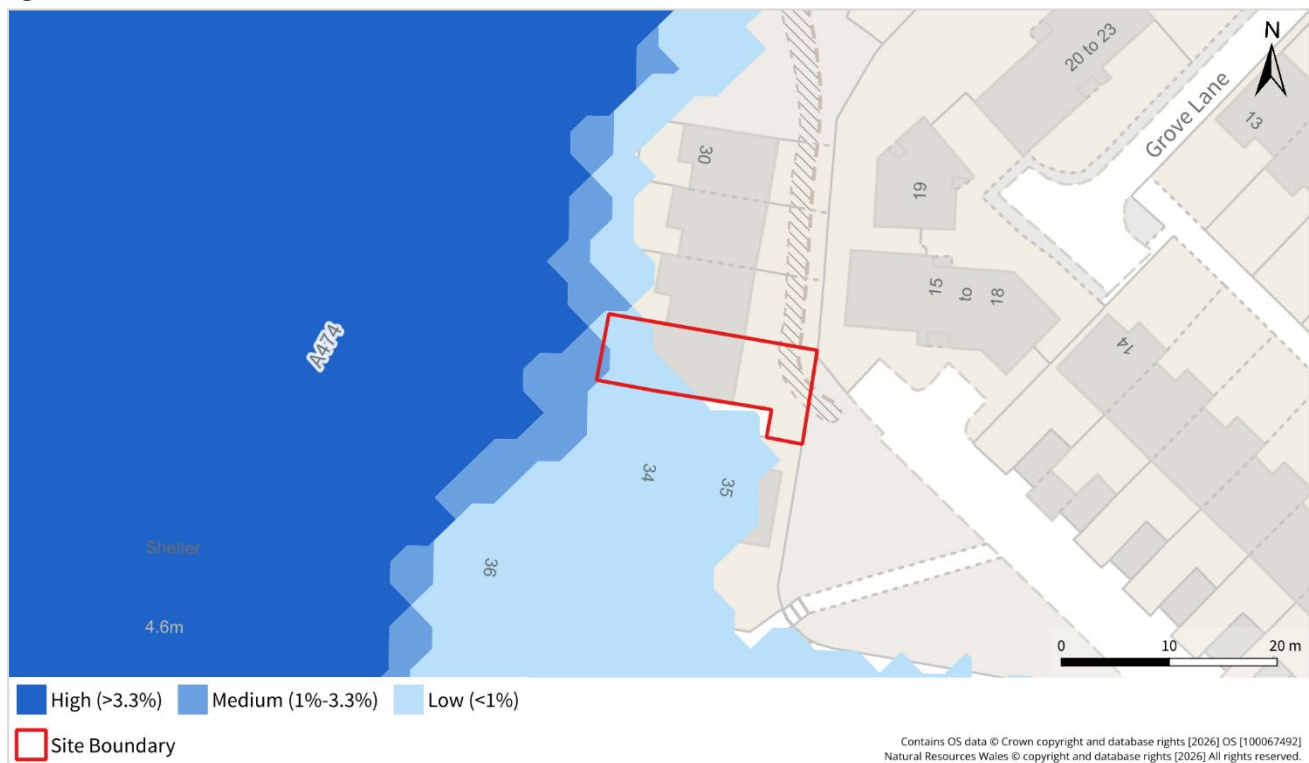
- **High Risk** – Each year, this area has a chance of flooding of greater than 1 in 20 (3.3%).
- **Medium Risk** - Each year, this area has a chance of flooding of between 1 in 100 (1%) and 1 in 30 (3.3%).
- **Low Risk** - Each year, this area has a chance of flooding of between 1 in 1000 (0.1%) and 1 in 100 (1%).

If an area is not covered by one of the above categories, it is considered to be at very low risk of flooding, which is defined as less than 1 in 1000 (0.1%) chance of flooding each year.

The NRW FRAW Risk from Rivers mapping (Figure 8) indicates there is a low ($\geq 0.1\%$ - $< 1\%$) annual probability of internal flooding from fluvial sources at the dwelling. However, there is a medium risk ($\geq 1\%$ - $< 3.3\%$) of fluvial flooding encroaching upon the site boundary.



Figure 8 - NRW FRAW Risk from Rivers



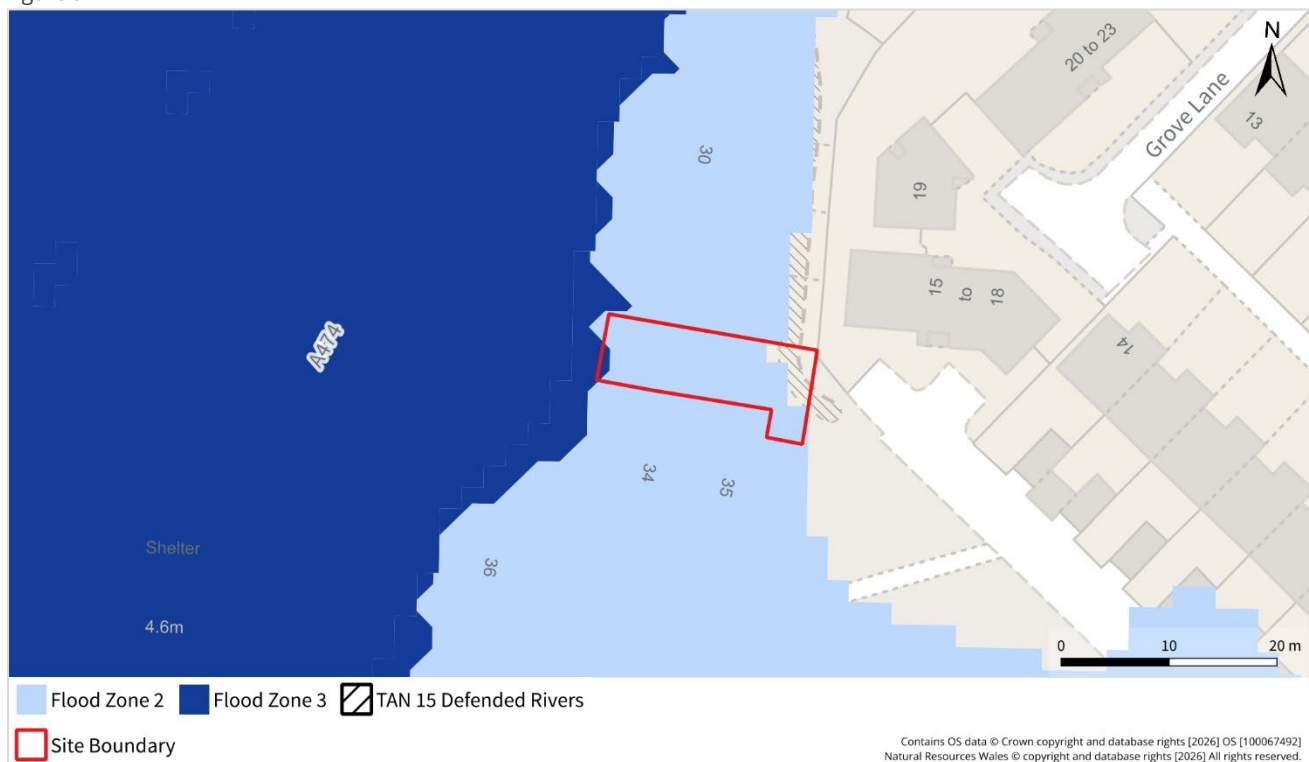
The NRW Flood Map for Planning (FMFP) (Rivers) divides the floodplain into risk-based categories and provides an indication of flood risk for the site, accounting for the impact of climate change and indicates the potential extent of flooding assuming no defences are in place. The Flood Zone categories are defined below:

- **Flood Zone 1** – Less than 1 in 1000 (0.1%) (plus climate change) chance of flooding in a given year.
- **Flood Zone 2** – Areas with less than 1 in 100 (1%) but greater than 1 in 1000 (0.1%) chance of flooding in a given year, including climate change
- **Flood Zone 3** – Areas with a greater than 1 in 100 (1%) chance of flooding in a given year, including climate change.
- **TAN 15 Defended Zone** – Areas where flood risk management infrastructure provides a minimum standard of protection against flooding from rivers of 1 in 100 (plus climate change and freeboard).

The NRW FMFP (Figure 9) indicates that the dwelling is located within Flood Zone 2 for rivers. Flood Zone 3 is shown to encroach upon the site's western boundary.



Figure 9 - NRW FMFP



Flood Defences

No formal flood defences have been identified along the banks of the River Neath or unnamed watercourse.

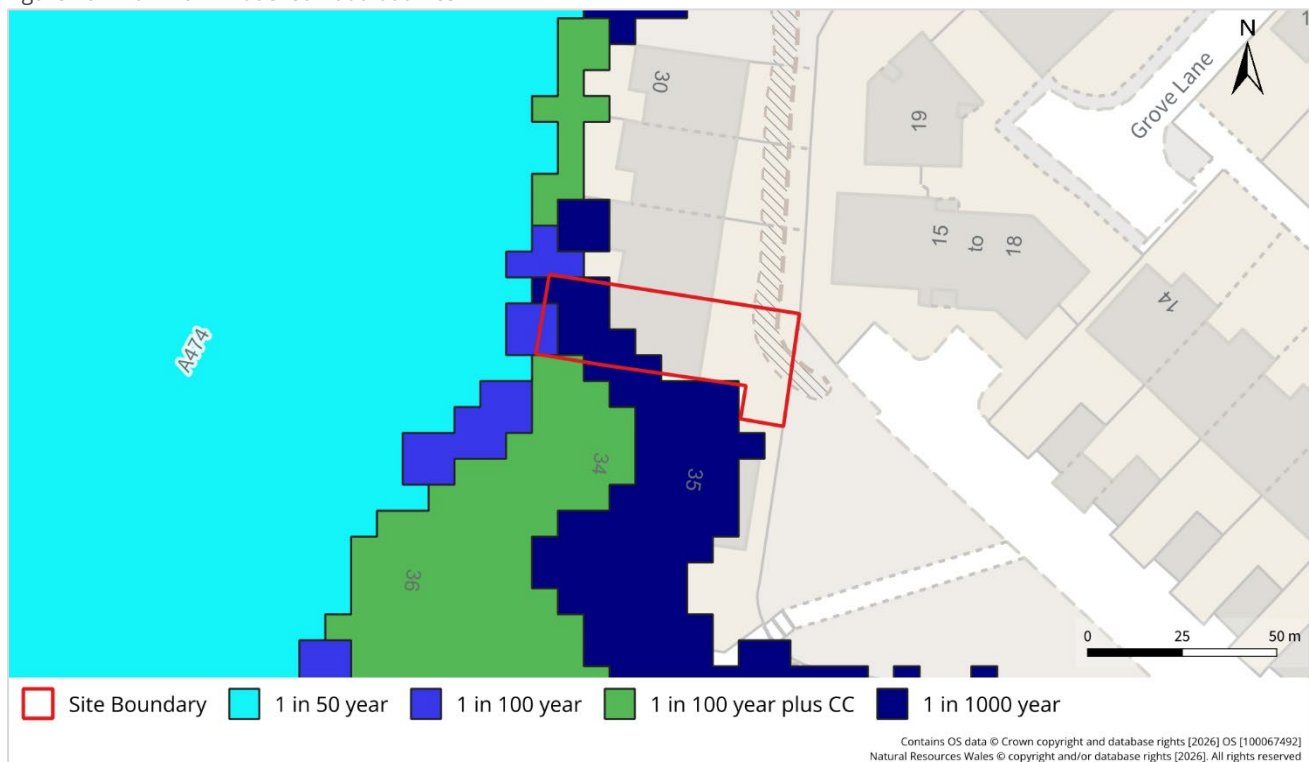
Enhanced Flood Model Data

As mentioned in Section 4.1, Ashfield requested the latest NRW flood model data. NRW provided the Neath – Phase 2 Hydraulic Model published by JBA in March 2017. The flood extents used within this report are taken from the defended fluvial scenario. It must be noted that the data used was the latest data held by NRW which included 20% Climate Change (CC) allowance.

Figure 10 shows the maximum modelled fluvial flood extents, fluvial flooding is projected to encroach upon the site's western boundary in the 1 in 100 year scenario. The model projects fluvial flooding to only affect the existing dwelling in the 1 in 1000 year flooding event. When accounting for a 20% climate change uplift to the 1 in 100 year flooding event, fluvial flooding is restricted to the external areas only and does not encroach upon the building footprint.



Figure 10 - Maximum modelled flood outlines



The maximum flood levels, for each modelled return period, have been compared with the FFL (6.43mAOD) to calculate the maximum internal fluvial flood depths projected at the proposed dwelling. Additionally, the maximum fluvial velocity at the dwelling has been reviewed for each of the modelled return periods. The results can be reviewed in Table 4 below.

Table 4 - Maximum flood level and calculated maximum elevation at the site

Return Period (Fluvial Defended)	Maximum Flood Level (mAOD)	Elevation above flood level (m)	Velocity (m/s)
1 in 50 year	-	-	-
1 in 100 year	5.65	0.78	0.00
1 in 100 year +20% CC*	5.86	0.57	0.03
1 in 1000 year	6.05	0.38	0.12

*CC = Allowance for Climate Change

Table 4 shows that the existing building is elevated above all modelled fluvial flooding scenarios in both the present day and when accounting for a 20% climate change uplift.

Fluvial Risk Summary

NRW flood maps indicates that the existing dwelling is located within Fluvial Flood Zone 2 and has a low risk of fluvial flooding. The NRW flood model data indicates that the existing dwelling is elevated above all modelled fluvial flooding scenarios on both the present day and when accounting for a 20% climate change uplift. In summary, the overall risk to the site from fluvial flooding is Low. No further consideration is deemed necessary as part of this report.



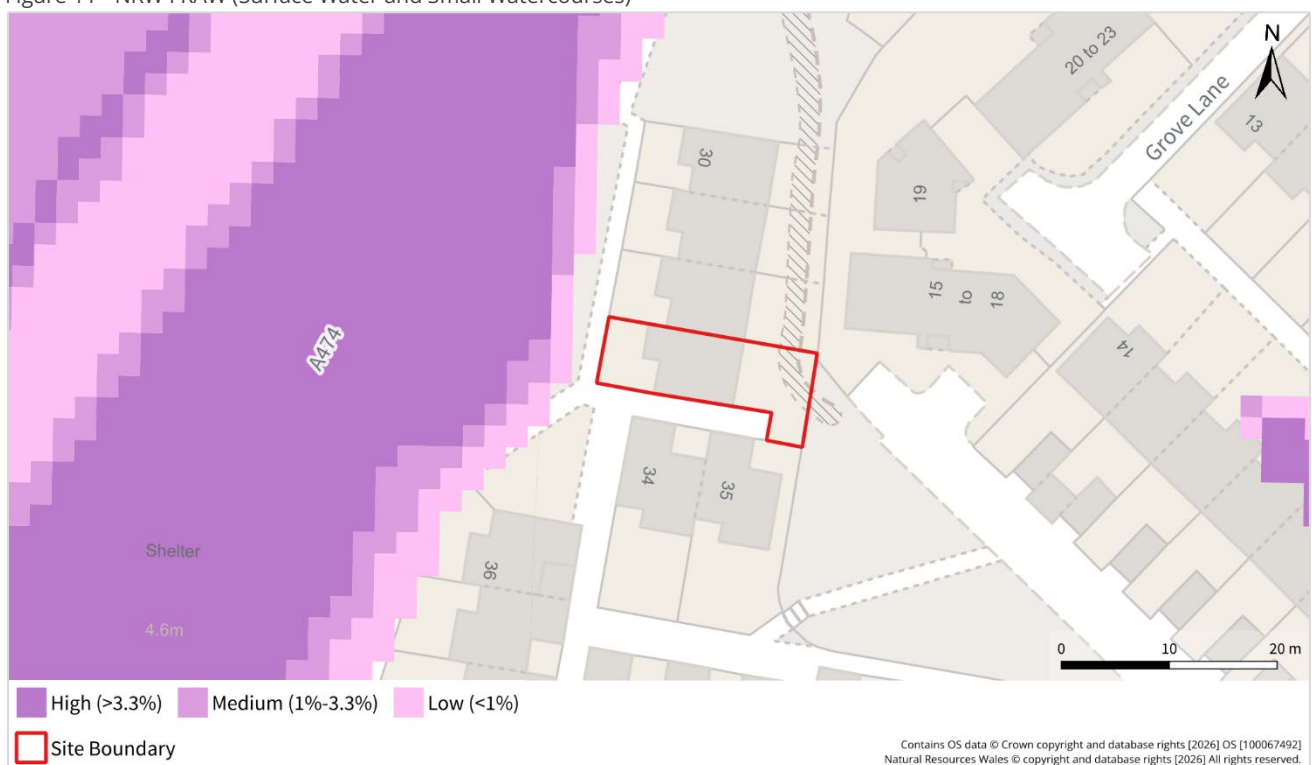
4.3 Surface Water Flooding

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. Surface water flood maps rely on simplified modelling, which can misrepresent risk at the scale of a single site. This report adds contextual interpretation to provide a more accurate, site-specific view.

NRW Flood Mapping

The NRW FRAW (Surface Water and Small Watercourses) (Figure 11) indicates that the site is not at risk of surface water flooding. The nearest area where surface water flooding is projected is located approximately 5m west of the site.

Figure 11 - NRW FRAW (Surface Water and Small Watercourses)



The NRW FMFP (Surface Water and Small Watercourses) (Figure 12), which takes into account climate change, indicates that the site is located within Flood Zone 1.



4.4 Groundwater



Upon review of the relevant documents, it was indicated that there have been no reportable instances of historic groundwater flood events located at or within the vicinity of the site. No further information regarding the susceptibility of groundwater flooding at the site was provide within any of the listed documents.

Groundwater Summary

The overall risk of groundwater flooding affecting the site is Low. No further consideration is deemed necessary as part of this report.

4.5 Artificial 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 relevant online documents outlined in Section 1.4 of this report, it was indicated that there have been no reportable instances of historic sewer flooding located at or within the vicinity of the site.

Artificial Sources Summary

The overall risk of flooding from artificial sources affecting the site is Low. Further considerations are made within Section 5 in relation to keeping this risk to a low designation in the long-term.

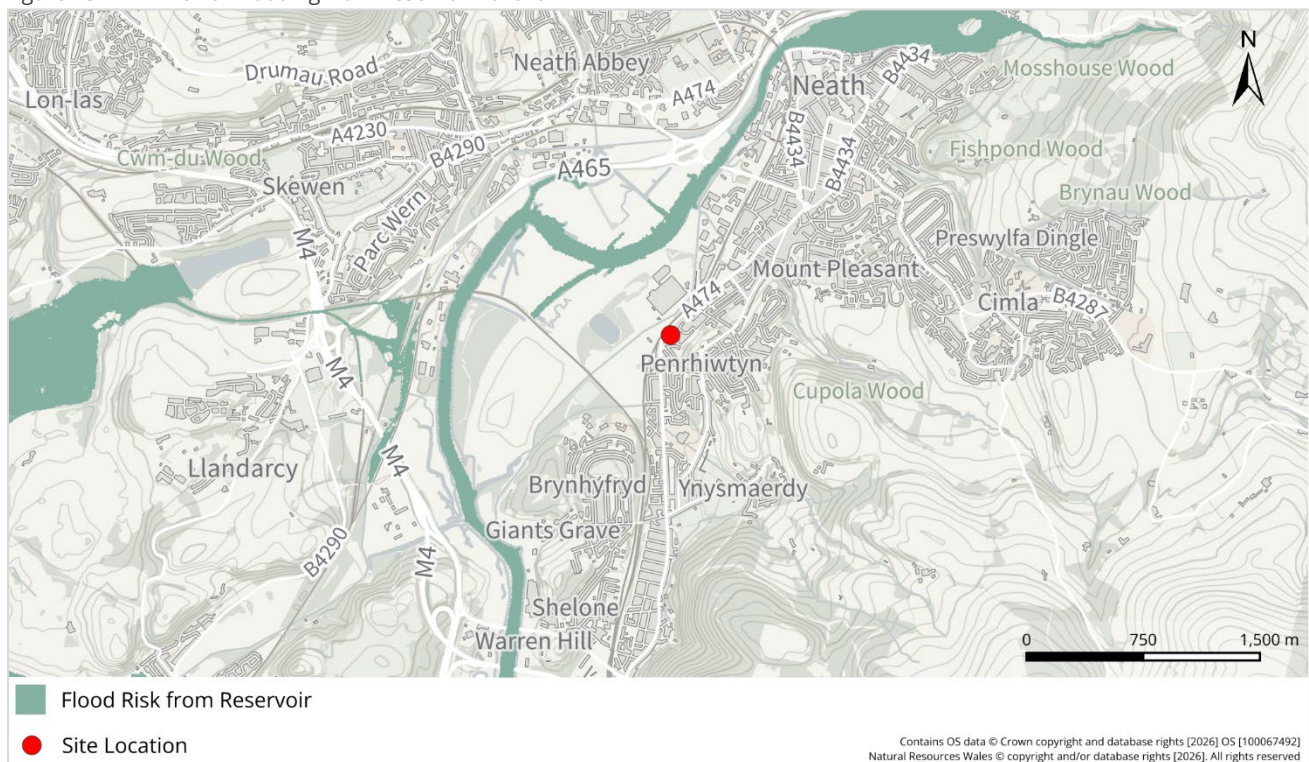
4.6 Reservoir Failure

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 NRW as a very worst-case scenario, with a flood event of this type being extremely unlikely to occur.

The NRW Risk of Flooding from Reservoir Failure mapping (Figure 13) indicates that the proposed development is not located within an area at risk of a reservoir failure. Furthermore, current legislation ensures that reservoirs are inspected regularly, and essential safety work is carried out as required.



Figure 13 -NRW Risk of Flooding from Reservoir Failure



Reservoir Failure Summary

Current legislation states all reservoirs are inspected regularly and the likelihood of failure occurring is low. The overall risk of flooding from reservoir failure affecting the site is therefore Negligible. No further consideration is deemed necessary as part of this report.

4.7 Summary of Flood Sources

Table 5 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 5 - Flood Risk Summary

Flood Source	Overall Risk Classification	Additional Considerations
Fluvial	Low	None.
Tidal	Low to Moderate (Present Day) Moderate to High (Sea level rise)	See Section 5.
Surface Water	Low	None.
Groundwater	Low	None.
Artificial Sources	Low	See Section 5.
Reservoir Failure	Negligible	None.



5 Flood Risk in Planning Context

The following sections describe the identified flood hazard in the context of the proposed development and provide recommendations, where required, for the mitigation or reduction of those risks to enable safe development and comply with local and national guidance.

5.1 TAN15 – Vulnerability to Flooding

According to Section 9 of Technical Advice Note 15 (TAN15), the proposed redevelopment comprising the replacement of an existing building damaged by fire with a like-for-like replica, is classified as ‘highly vulnerable’ development. The site is situated within Tidal Flood Zone 3, which is defined as an area at high risk of tidal flooding.

TAN15 advises that “*allocations for redevelopment in Zone 3 should be avoided and may only be made in exceptional circumstances.*” In this instance, the proposal seeks to reinstate a previously existing structure without altering its footprint, layout, or use. On this basis, it is considered that the development aligns with the concept of exceptional circumstances as applied by NRW, as it does not introduce new or intensified vulnerability but rather restores the property to its former condition.

5.2 TAN15 – Acceptability of Flood Consequences

As per Section 11.8 of TAN 15 all highly vulnerable development should be flood free during a 1 in 200 year plus climate change event. The thresholds may be applied with more flexibility for redevelopment, changes of use, conversions and extensions, where the ability to substantially redesign a development is limited. In those circumstances the thresholds are a guide.

As previously mentioned in Section 4.1 of this report, the site is projected to experience internal flooding that exceeds 1m in the 1 in 200 year plus 20% climate change. As this development is for like-for-like replacement of an existing building, resistance and resilience measures can be applied to manage the impact of flooding at the site which are discussed in Section 5.3 below.

5.3 Flood Resistance and Resilience

The following recommendations are intended to reduce the risk of internal flooding through the implementation of flood resistance measures, while also enhancing the development’s overall resilience and ability to recover more quickly following a flood event, thereby improving performance beyond pre-fire conditions:

Flood Resistance Measures

- Flood barriers should be installed at the property entrances to provide protection against flood depths of up to 0.6m. Where flood depths exceed this height, water ingress is likely, and therefore flood resilience measures should be incorporated throughout the ground floor to mitigate potential impacts.
- Any and all airbricks located 0.6m or lower should be replaced with a self-closing equivalent;
- Install Non-Return Valves within the below ground drainage network and on any external pipes where relevant;
- Any and all pipe/cable entry points into the external walls 0.6m or lower should be sealed with a silicone sealant; and
- All exposed external brickwork up to 0.6m should be treated with a waterproof spray.



It should be noted that applying flood resistance measures to a building when flood depths exceed 0.6m could put extreme pressure on the structural integrity of the building, especially flood depths exceeding 1m. Therefore, the above measures are proposed to reduce the risk of flooding from tidal sources in the present day (where projected flood depths are lower than 0.6m).

It is recommended that the overall construction methods below ground, as well as immediately above ground level, should consider the potential for localised surface water accumulation. The type of design assurances would include less permeable building materials such as engineering brick and the most appropriate damp proof membrane.

Flood Resilience Measures

- Where possible all electrical sockets on the ground floor should be installed at a minimum height of 1m above internal floor level;
- Flood resilient design should be incorporated into the ground floor areas. These designs could consist of the following:
 - Flood resilient flooring such as tiles, vinyl, etc should be fitted across the ground floor.
 - Skirting boards should comprise of tile or treated timber.
- All internal walls should comprise of brick. Where this is not possible, plasterboard sheets for the stud walls could be installed horizontally to allow for easier replacement;
- Ground floor electrics can be re-wired to run from the ceiling rather than under the floor;
- Kitchen cabinets could comprise of imperial legs, adding a level of recoverability from flood depths of a lower magnitude. Water resistant kitchen cabinets could be installed such as stainless steel or bio composite;
- The boiler and fuse box should be located on the first floor, or raised ceiling height above internal floor levels if cannot be located on the first floor, and,
- White goods located on the ground floor could be either elevated 0.6m above the floor level or located on the first floor (if possible).

5.4 Flood Warning and Evacuation Plan

The site lies within Flood Alert Areas 102WABT04 and 102WAFF18, and Flood Warning Area 102FWF112B. It is therefore recommended that all occupants register for the flood alert and warning services provided by Natural Resources Wales to receive timely notifications of potential flood events.

Given that the principal source of risk is tidal flooding, there is typically an element of advance warning available. As such, a Flood Warning and Evacuation Plan should be prepared and implemented to ensure that occupants are aware of the potential risk and understand the actions required in the event that a flood warning is issued.

5.5 Impact on Flooding Elsewhere

As the proposed development involves the replacement of a fire-damaged building with a like-for-like replica, there will be no change to the existing building footprint. Consequently, the development will not result in any increase in floodwater displacement.



6 Conclusion

This report has been prepared in support of a planning application for like-for-like replacement dwelling of an existing building that was damaged during a fire at the property.

The site has been assessed for flood risk from a variety of flood sources. NRW flood maps indicates that the existing dwelling is located within Tidal Flood Zone 3 and has a Medium risk of tidal flooding. The NRW flood model data indicates that the existing dwelling is at risk of tidal flooding across in a 1 in 200 year or greater flooding event in both the present day (2023) and when accounting for sea level rise (2123). Therefore, the overall risk to the site from tidal flooding is Low to Moderate in the present day and Moderate to High when accounting for sea level rise.

The risk of flooding from fluvial, surface water, groundwater and artificial sources is low. The risk of reservoir failure is negligible.

Under Section 9 of Technical Advice Note 15 (TAN15), the proposed like-for-like replacement of a fire-damaged building is classed as 'highly vulnerable' and is located within Tidal Flood Zone 3. While TAN15 advises that such development should only occur in exceptional circumstances, the proposal is considered to comply, as it reinstates the existing building without increasing vulnerability. Although the site is predicted to experience internal flooding exceeding 1m during a 1 in 200 year plus climate change event, TAN15 allows flexibility for redevelopment, and the following appropriate measures will improve the site's flood resistance and resilience:

- Install flood resistance measures, including flood barriers, self-closing airbricks (below 0.6m), non-return valves on drainage/external pipes, and sealing all wall penetrations below 0.6m.
- Implement external waterproofing, raise or adapt electrical installations, use flood-resilient materials for floors, walls, and skirting, and improve fixtures and fittings (e.g., elevated kitchen units and white goods) to enhance recoverability.
- All residents should sign-up for Natural Resources Wales Flood Alerts and Warnings and follow a FWEP.

This report therefore demonstrates that by incorporating the recommended key principles, the proposed development:

- Is suitable in the location proposed and will be adequately flood resistant and resilient;
- Is unlikely to place additional persons at risk of flooding, and will offer a safe means of access and egress with the use of a site specific FWEP; and
- Is unlikely to increase flood risk elsewhere as a result of the proposed development through the loss of floodplain storage, impedance of flood flows or increase in surface water runoff.

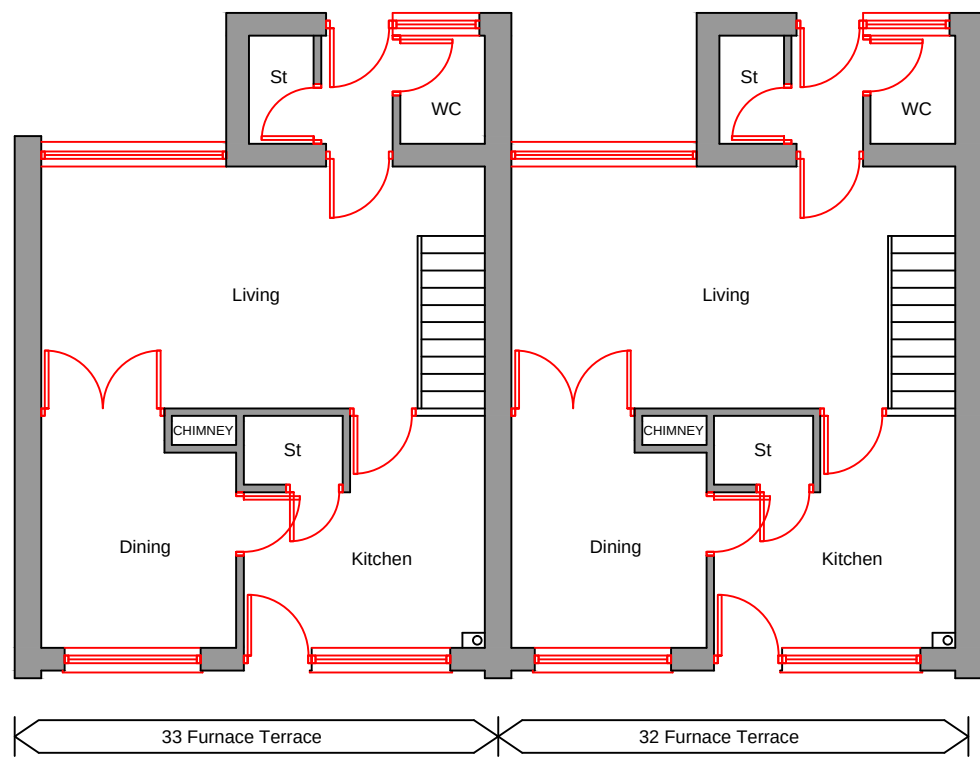


Appendices

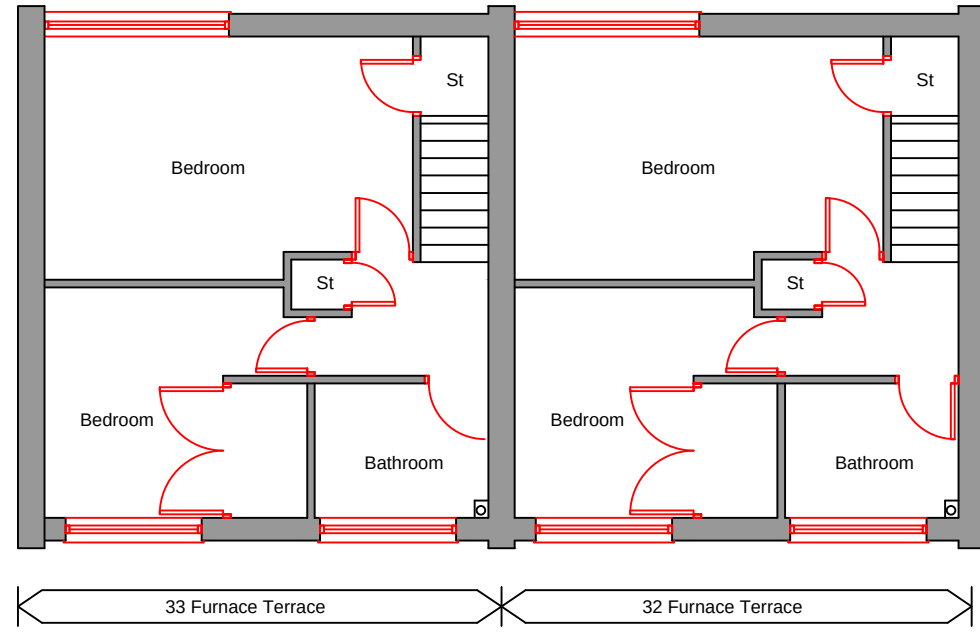


Appendix A

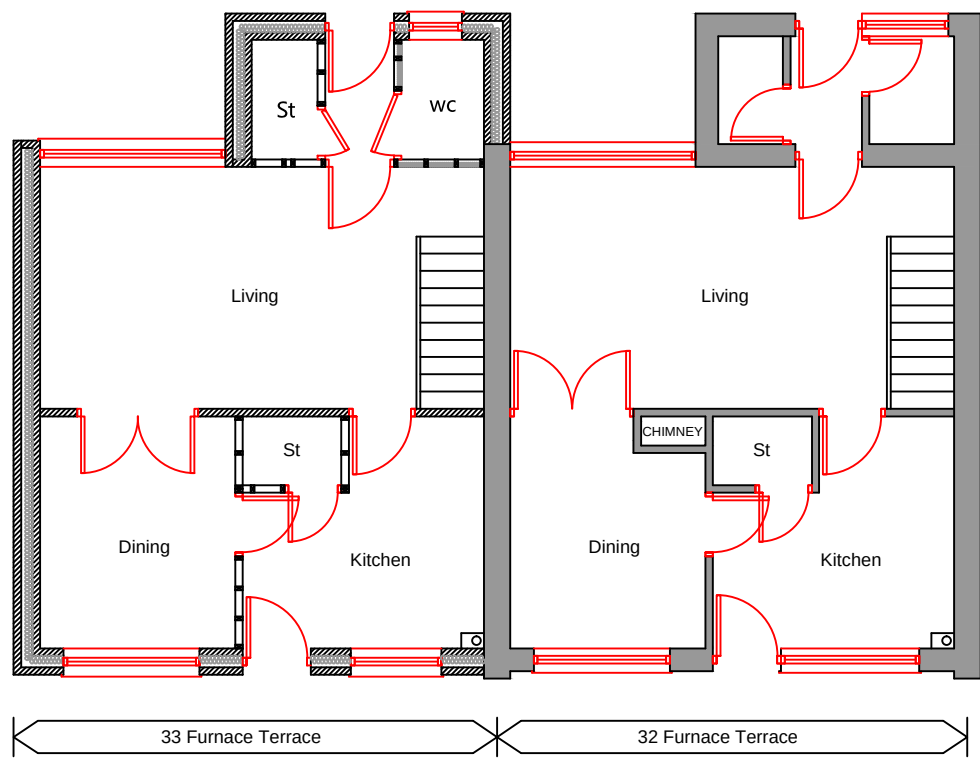
Existing and Proposed Plans



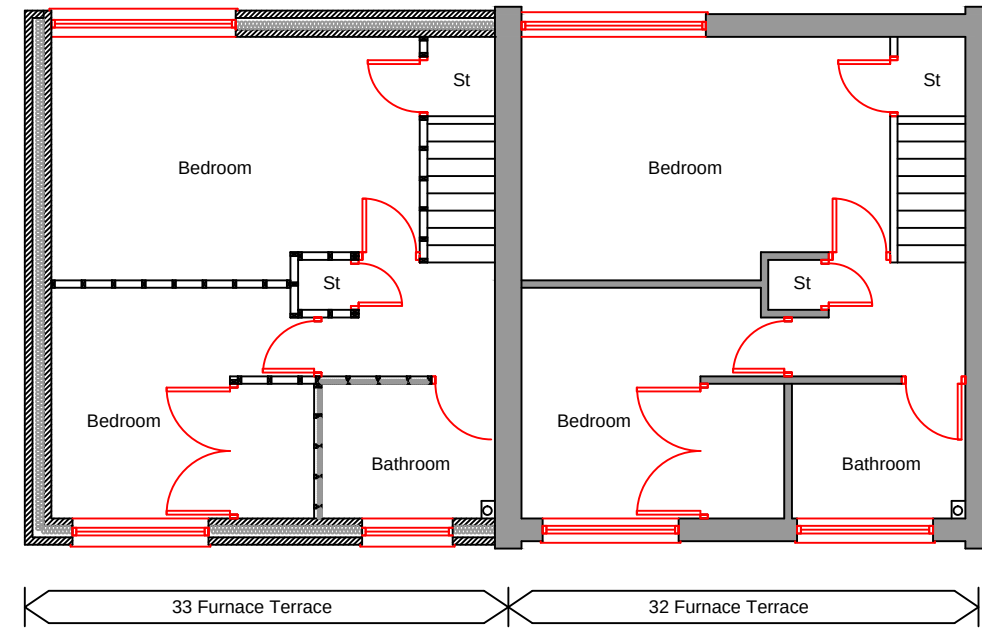
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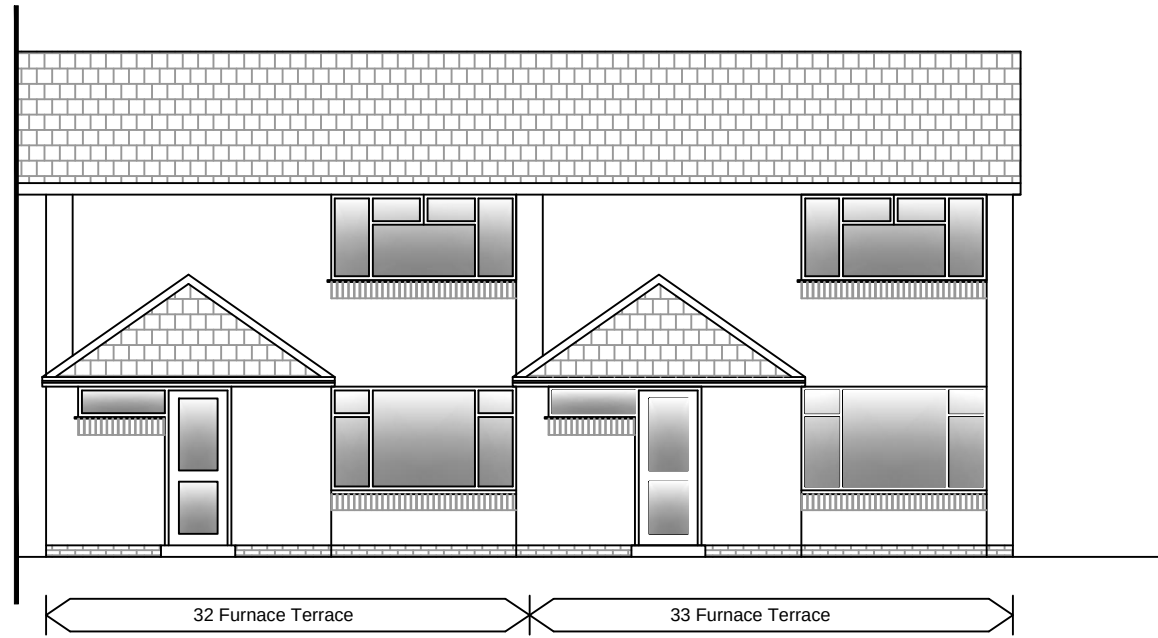
Existing First Floor
Scale 1:100



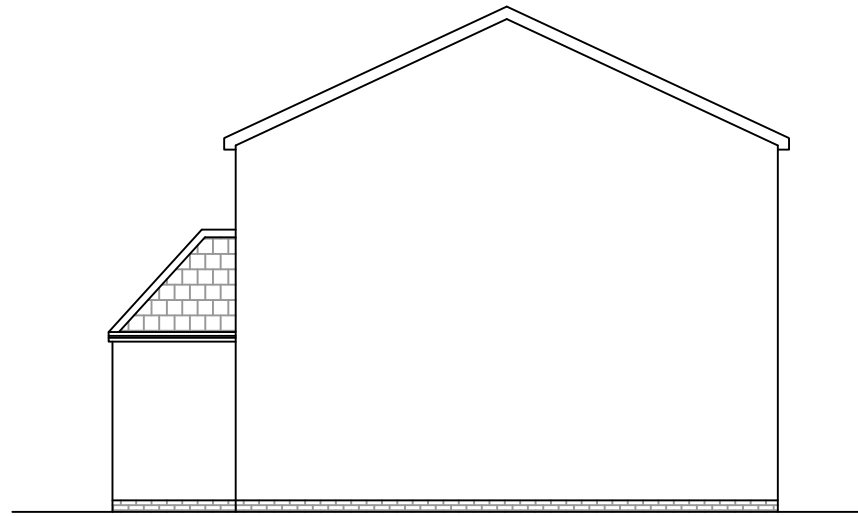
Proposed Ground Floor
Scale 1:100



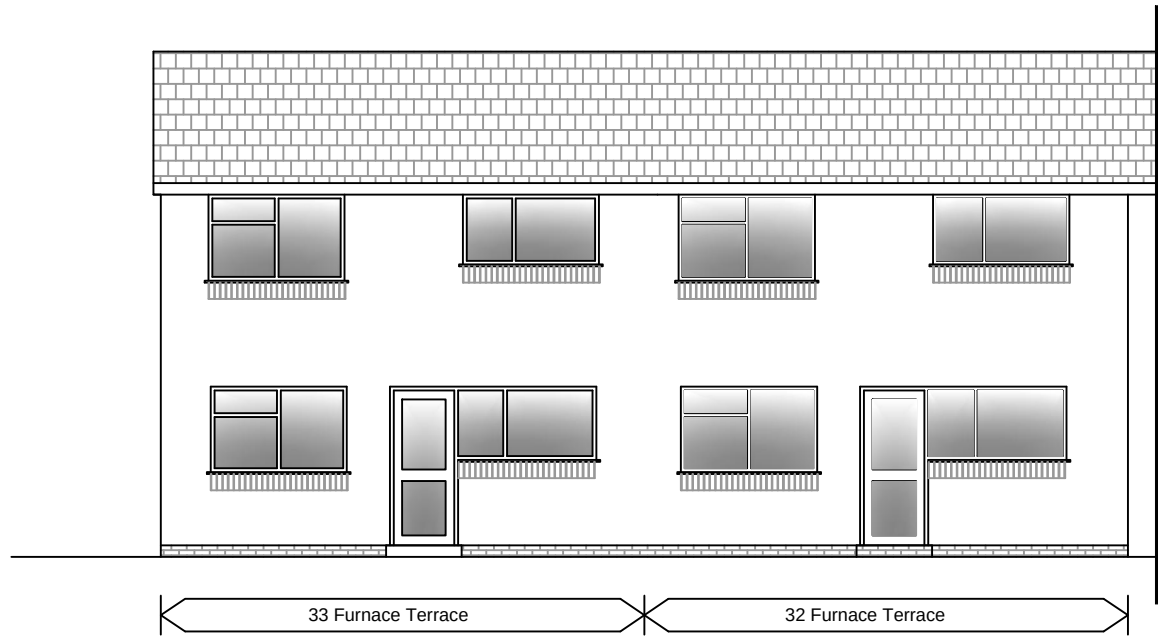
Proposed First Floor
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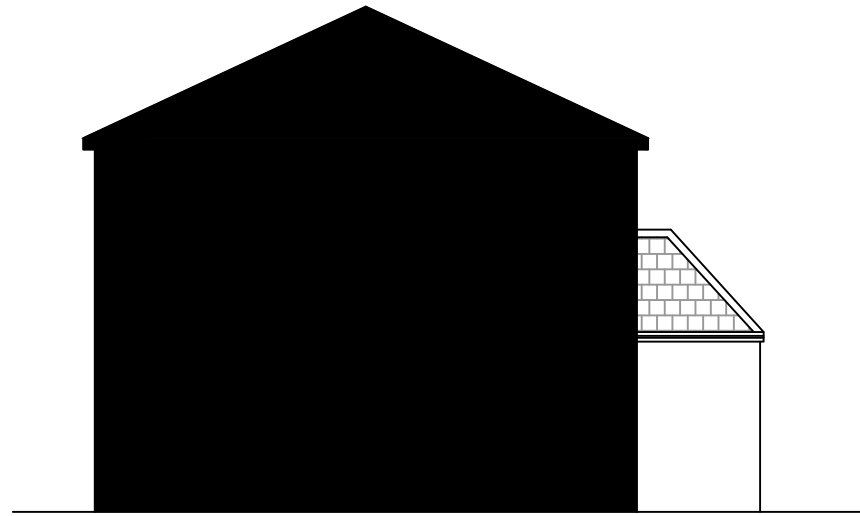
Existing West Elevation
Scale 1:100



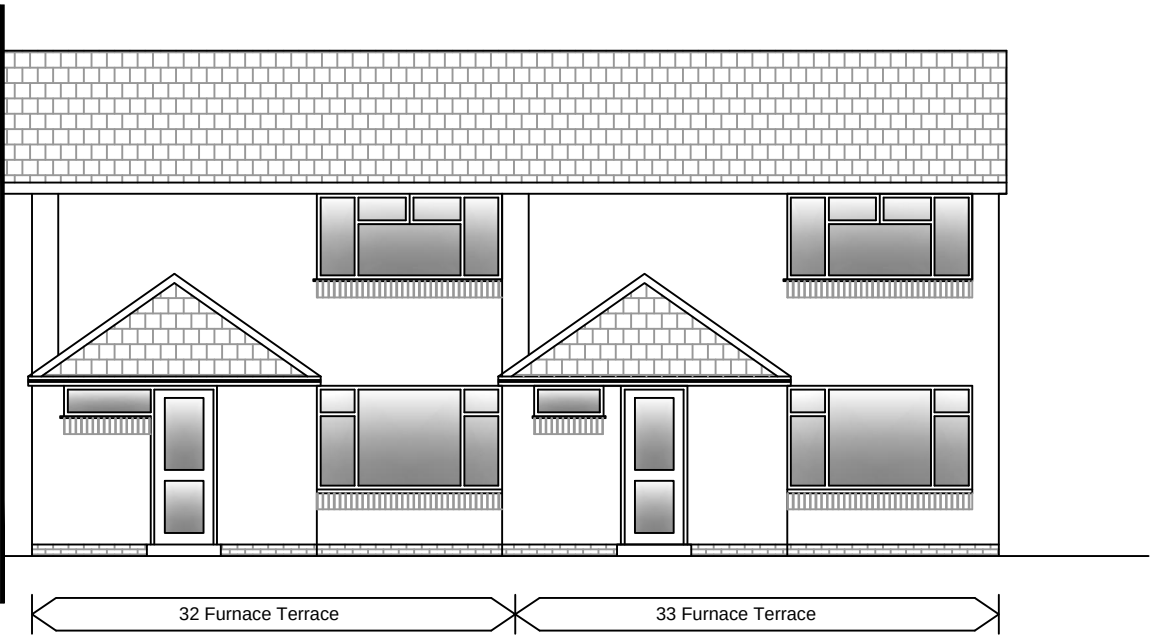
Existing South Elevation
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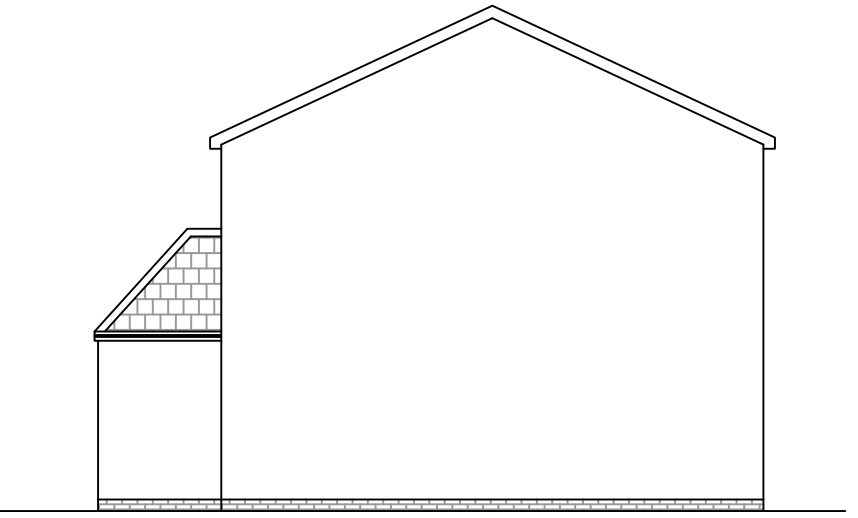
Existing East Elevation
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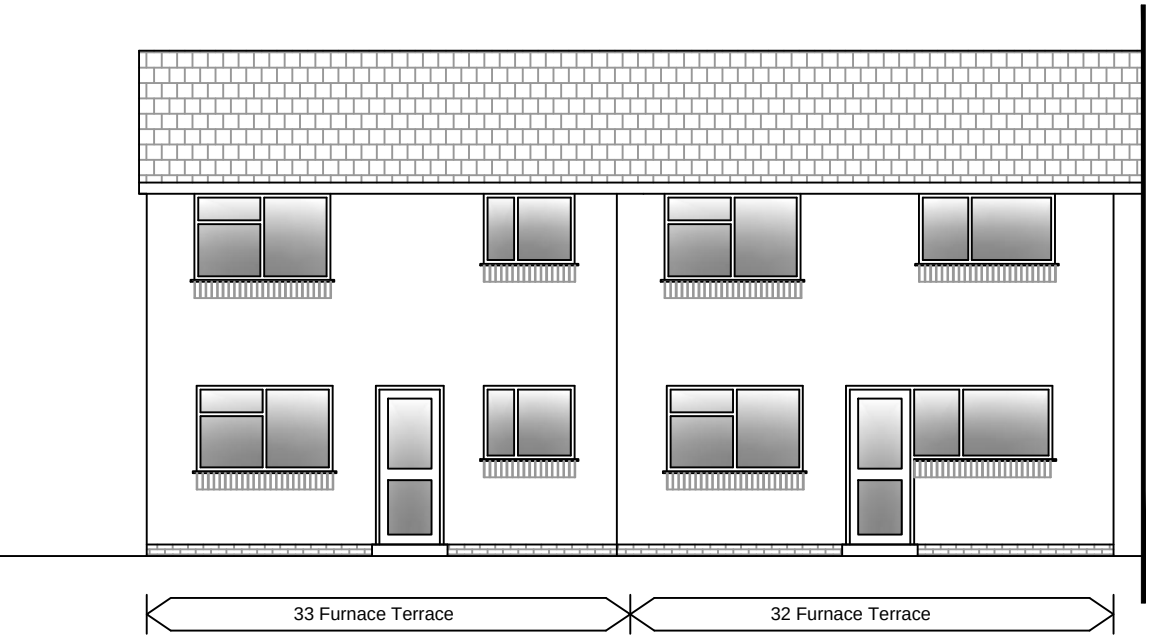
Existing North Elevation
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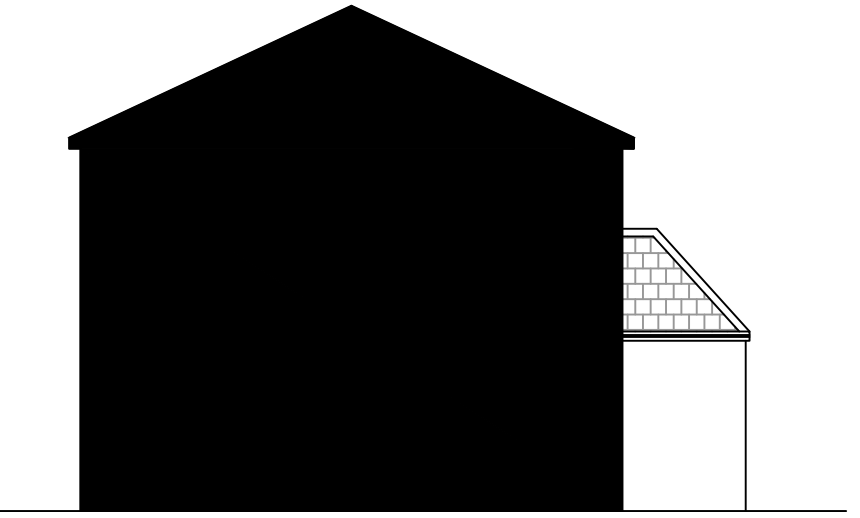
Proposed West Elevation
Scale 1:100



Proposed South Elevation
Scale 1:100



Proposed East Elevation
Scale 1:100



Proposed North Elevation
Scale 1:100

Notes: All dimensions must be checked on site by the contractor and not scaled from this drawing. All working dimensions must be taken from checked & / or verified by the main contractor on site prior to commencement or items for works. All work must comply with the current building regulations, local authorities laws stipulations & requirements of statutory bodies. The drawing is copyright	
Planning Application Existing and Proposed Plans & Elevations	
Applicant:	
Address: 33 Furnace Terrace, Penrhiwtyn, Neath	
Date: February 2026	
Scale: As Shown	
dwg no: 2026-001-Furn	Rev: -



Appendix B

Drainage Plans



Dŵr Cymru
Welsh Water

33 Furnace Terrace SA11 2EE



LEGEND

Clean network:

- Sluice valve
- Pressure reducing valve
- Meter
- Bulk meter
- Hydrant
- Cap end
- Air valve

- Stop tap
- Water Treatment Works
- Water Pumping Station
- Existing main
- Non-operational main
- Raw Water

NB: Water main symbol colour indicates the type.
LIGHT BLUE - Trunk
DARK BLUE - Distribution
YELLOW - Raw Water

Notes:

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

Dŵr Cymru Cylinddydd (the Company) gives this information as to the position of its underground apparatus by way of general guidance only and on the understanding that it is based on the best information available and no warranty as to its correctness is relied upon in the event of excavations or other works made in the vicinity of the company's apparatus. The user of this information is advised to carry out any excavations made with care. The information which is supplied by the Company is done so in accordance with statutory requirements of sections 105 and 106 of the Water Industry Act 1991 which in no way opens the liability of the Company or its officers, directors, employees or agents for any loss or damage caused by the use of the information. It should be noted that the records that are available to the Company may not disclose the existence of a water main, service pipe, sewer, lateral drain or other underground pipe or apparatus, and that the information is only for guidance and should not be relied upon. It is the user's responsibility to ensure that the information is used in accordance with the provisions of the New Roads and Street Works Act 1991 and the Company's rights to be compensated for any damage to its apparatus.

Service pipes are not generally shown but their presence should be anticipated.

**EXACT LOCATIONS OF ALL APPARATUS
TO BE DETERMINED ON SITE.**

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Map scale: 1:1250
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Printed on: 17 Apr 2026



Waste network

	Foul chamber		Outfall
	Surface water chamber		Lampole
	Combined chamber		Storm Overflow
	Combined sewer overflow		Rising main
	Special purpose chamber		Gravity sewer
	Treatment works		Private sewer
	Pumping station		Private sewer subject to Sect. 104 adoption agreement

NB: Sewer symbol colour indicates the type.

RED	- Combined		Private Sewer Transfer
GREEN	- Surface Water		Latent Drain
BROWN	- Foul		Inspection Chamber

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Service pipes are not generally shown but their presence should be anticipated.

EXACT LOCATIONS OF ALL APPARATUS
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