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Cardiff Council Strategic Flood Consequences Assessment - Allied Bakeries (7)

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Contract

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This report describes work commissioned by Cardiff Council, by an instruction dated 23rd January 2026. The Client's representative for the contract was Stuart Williams of Cardiff Council. Bethany Adams of JBA Consulting carried out this work.

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The methodology adopted and the sources of information used by JBA in providing its services are outlined in this Report. The work described in this Report was undertaken between January and May 2026 and is based on the conditions encountered and the information available during the said period. The scope of this Report and the services are accordingly factually limited by these circumstances.

The conclusions and recommendations contained in this Report are based upon information provided by others and upon the assumption that all relevant information has been provided by those parties from whom it has been requested and that such information is accurate. Information obtained by JBA has not been independently verified by JBA, unless otherwise stated in the Report.

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1 Introduction

JBA Consulting has been commissioned by Cardiff Council to prepare an independent Flood Risk Appraisal as part of a Stage 2 Strategic Flood Consequences Assessment (SFCA) for sites considered for allocation in its Replacement Local Development Plan.

This assessment will evaluate the risk of flooding from all sources to 'Allied Bakeries', the proposed development site, as well as the appropriateness of development at the site in accordance with Welsh Government policy, as outlined in Technical Advice Note 15 (TAN15). Furthermore, recommendations will be provided, where appropriate, to mitigate the risk of flooding at the proposed development site as well as recommendations for further works.

2 Site Description

The key characteristics of the site are summarised in Table 2-1 and the location and site boundary are shown in Figure 2-1.

Table 2-1 Site Summary

Site name	Allied Bakeries
Site ID	7
Site area (ha)	2.7
Existing land use	Brownfield land
Purpose of Development	Mixed (residential and commercial)
OS NGR	ST 17045 80854
Access location	Field Way, connected to Maes-y-Coed Road

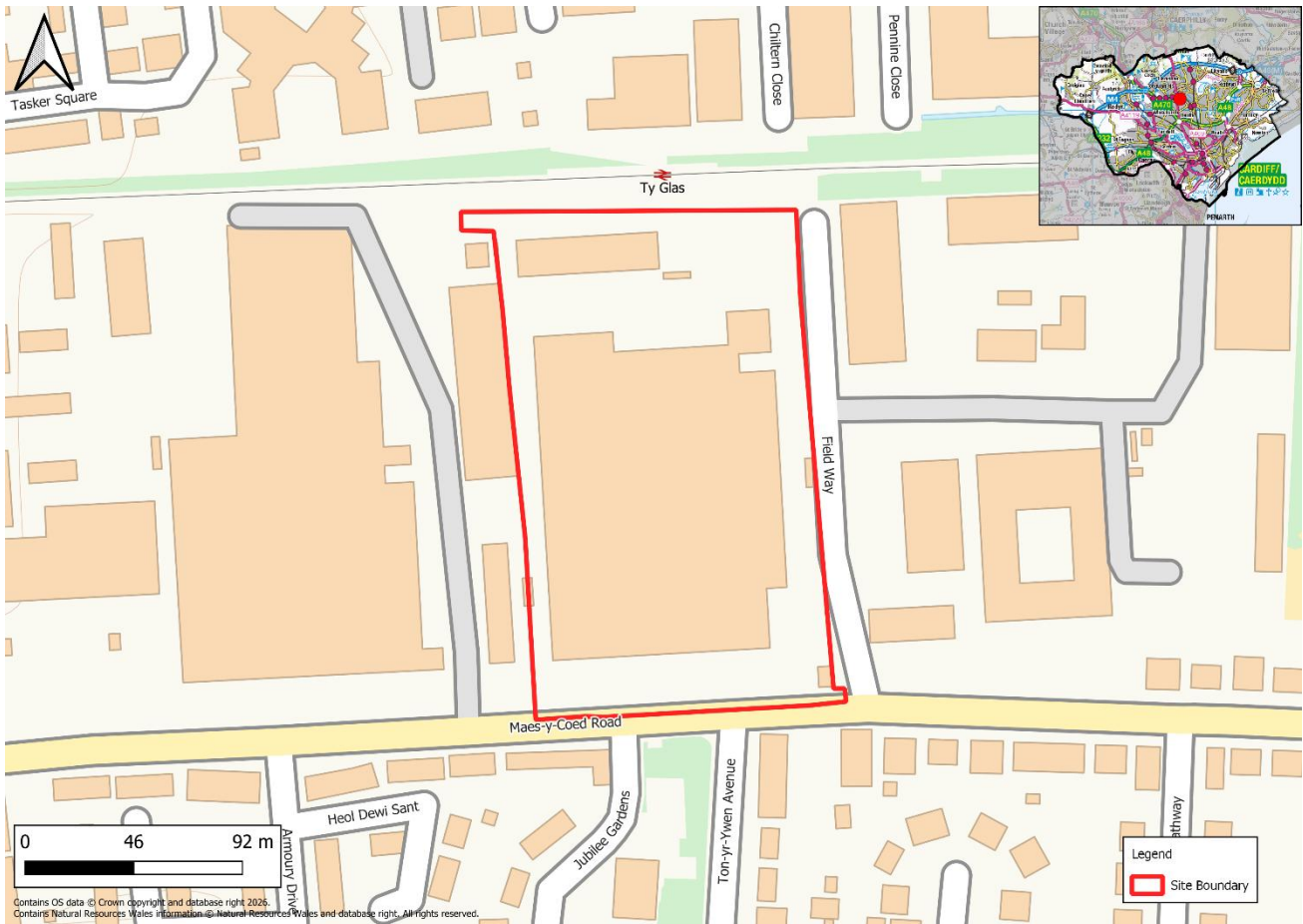


Figure 2-1 Proposed development site

2.1 Development proposals

The proposed development is for residential and commercial use. Residential is classed as Highly Vulnerable development, and commercial uses are Less Vulnerable development. The site is brownfield land, comprising the existing Allied Bakeries building.

No indicative site layout is available for this assessment.

2.2 Topography

The Natural Resources Wales (NRW) Open Source 1m Light Detection and Ranging (LiDAR) data¹ across the site has been reviewed and is shown in Figure 2-2. Levels across the site are generally uniform, with an average elevation of approximately 36.30m. The highest ground levels of ~36.62mAOD are in the north-western corner, with lowest levels are approximately 35.74mAOD in the south-eastern corner of the site.

Along the Field Way access road to the east of the site, ground levels generally slope in a southerly direction towards Maes-y-Coed Road, with the lowest ground level at the junction of approximately 35.62mAOD.

¹ <https://datamap.gov.wales/maps/lidar-data-download/>

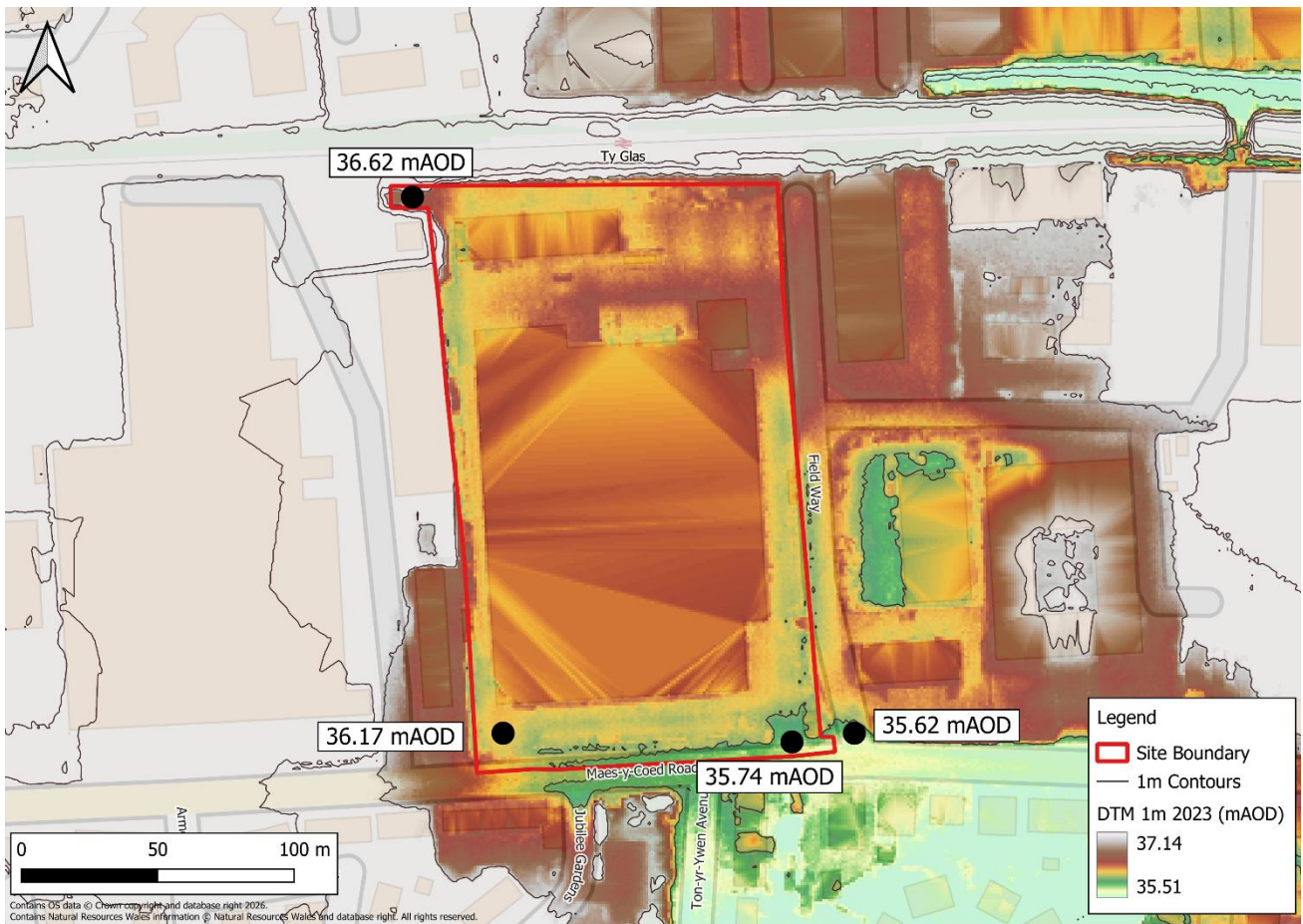


Figure 2-2 1m LiDAR

2.3 Watercourses and Flood Defences

Figure 2-3 shows that an unnamed ordinary watercourse is located ~70m north-east of the site. The watercourse flows in a general south-easterly direction, before joining the Llanishen Brook, an ordinary watercourse located approximately 1km downstream from the site.

The site is not within an area that benefits from flood defences.

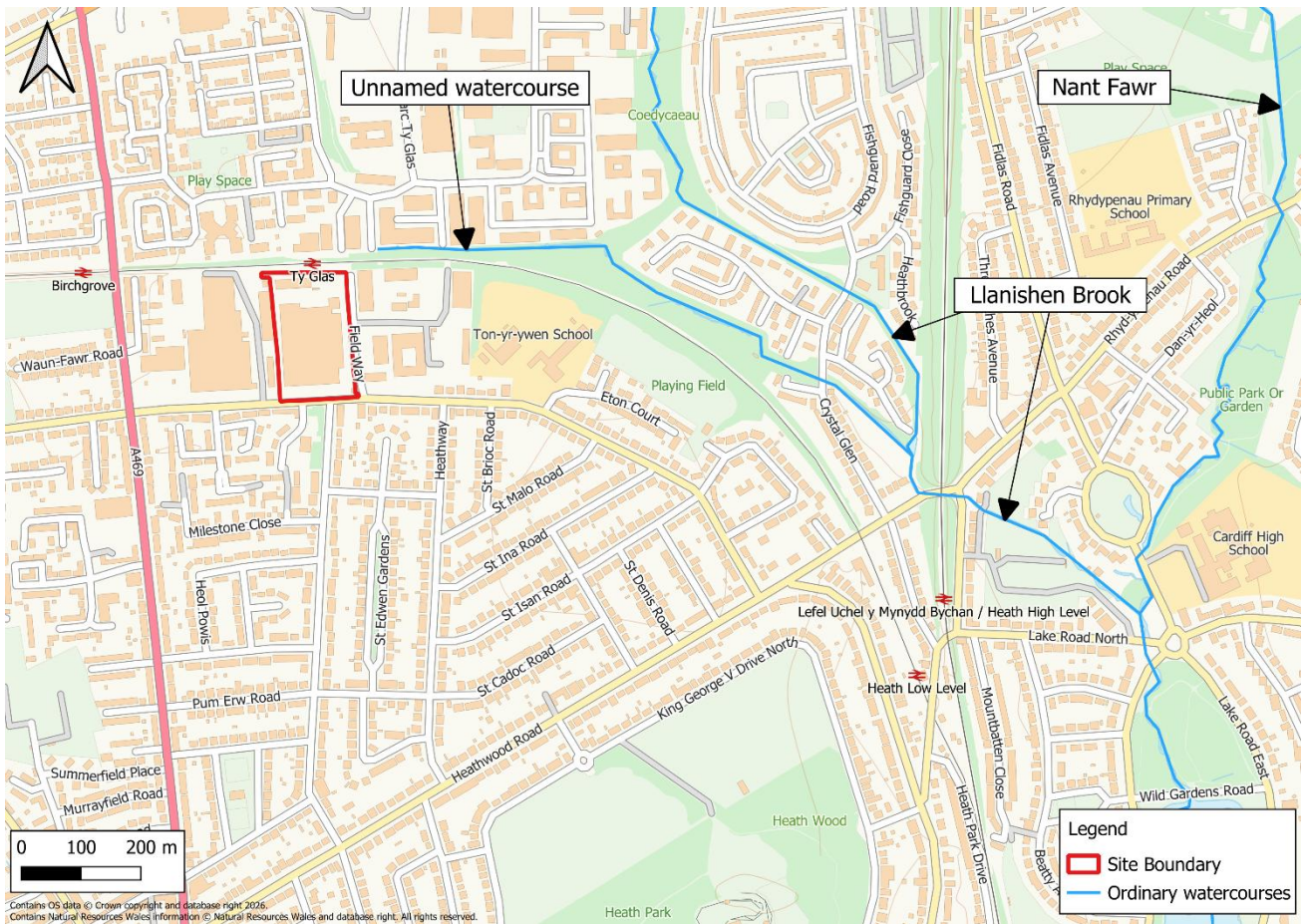


Figure 2-3: Watercourses

3 Planning Policy and Flood Risk

TAN-15 provides a framework within which flood risk arising from rivers, the sea, and surface water, as well as the risk of coastal erosion, can be assessed. TAN-15 adopts a risk-based approach, which emphasises the ability to avoid or minimise risk depending on the type of development proposed.

The following table identifies the form of development, vulnerability classification and Flood Map for Planning (FMfP) classification (as defined in TAN-15) for the proposed development site.

Table 3-1 TAN-15 Development classification summary

TAN-15 classification	Classification
Development proposal	Residential and commercial
Form of Development	Redevelopment
Vulnerability Classification	Mixed - Highly Vulnerable and Less Vulnerable development
Flood Map for Planning - Rivers	Flood Zone 1
Flood Map for Planning - Sea	Flood Zone 1
Flood Map for Planning - Surface Water and Small Watercourses	Flood Zones 1, 2 and 3 - shown in Figure 3-1.

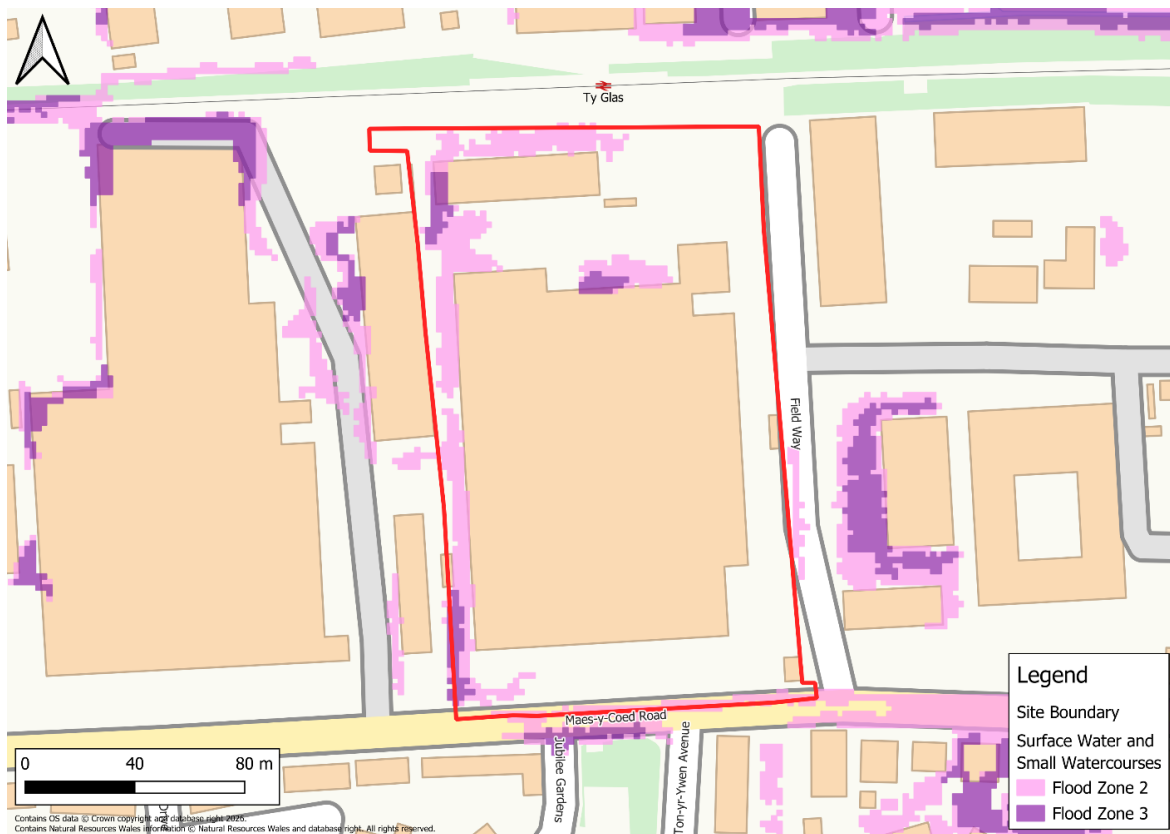


Figure 3-1: Flood Map for Planning - Surface Water and Small Watercourses

4 Assessment of Flood Risk

The latest available information on flood risk at the site, published by Natural Resources Wales (NRW) and datasets used in the SFCA are summarised in Table 4-1.

Table 4-1 Summary of flood risk

Source of Flooding	Onsite Presence	Description
Flood Risk from Rivers	✘	The site's location within Flood Zone 1 of the FMfP for Rivers indicates that the site is at very low risk of fluvial flooding.
Flood Risk from the Sea	✘	The site's location within Flood Zone 1 of the FMfP for the Sea indicates that the site is at very low risk of tidal flooding.
Flood Risk from Surface Water and Small Watercourses	✓	The site is predominantly at very low risk of surface water flooding, with a medium risk shown to the western boundary. See Section 4.1 for further assessment.
Flood Risk from Groundwater	✘	JBA's Groundwater risk of emergence map shows that the site is at very low risk of groundwater emergence, and there are no nearby groundwater incidents. Therefore, it is concluded that the risk of flooding is very low .
Flood Risk from Reservoirs	✘	The NRW Flood Map for Planning shows that the site is not located in an area at risk of reservoir flooding. Therefore, it is concluded that the risk of flooding is very low .
Flood Risk from Sewers	✘	The Cardiff SFCA has identified there to be no historic sewer flood incidents within the Heath electoral ward. Therefore, it is concluded that the risk of flooding is very low .

4.1 Flood Risk from Surface Water

Surface water flooding occurs when rain falling on saturated ground flows overland, following the local topography. Surface water flooding and subsequent overland flow can therefore pose a risk to both the development site and the surrounding land. Overland flow may originate from the site itself or adjoining land at a higher elevation, from which flow migrates onto the development.

As shown in Figure 3-1 the FMfP for Surface Water and Small Watercourses indicates that the site is predominantly located within Flood Zone 1, associated with a very low risk of flooding from this source.

The western boundary is located within Flood Zones 2 and 3, along with a localised area in the central part of the site, along the northern façade of the existing building, which is

associated with a topographical depression. Access and egress along Maes-y-Coed Road is shown to be at risk of surface water flooding with areas of Flood Zones 2 and 3 in this location.

In the absence of detailed hydraulic modelling of the site, the NRW National Flood Hazard Mapping (NFHM) has been used to provide a further assessment of surface water and small watercourse flood risk to the site. The NFHM is used to define the FMfP surface water and small watercourses Flood Zones, but inspection of the NFHM data provides additional information on flood depth, velocities and hazard, and provides greater insight into the mechanisms and accuracy of the flood mapping.

Figure 4-1 shows that during the 1% AEP plus climate change events the site is almost entirely flood free. Two areas of surface water ponding are predicted against the northern façade of the existing building, and north-western extent of the site, against the south-western façade of the rear building, with maximum depths of 260mm and 330mm predicted, respectively. Flood risk in these locations correspond to topographic depressions causing surface water to accumulate.

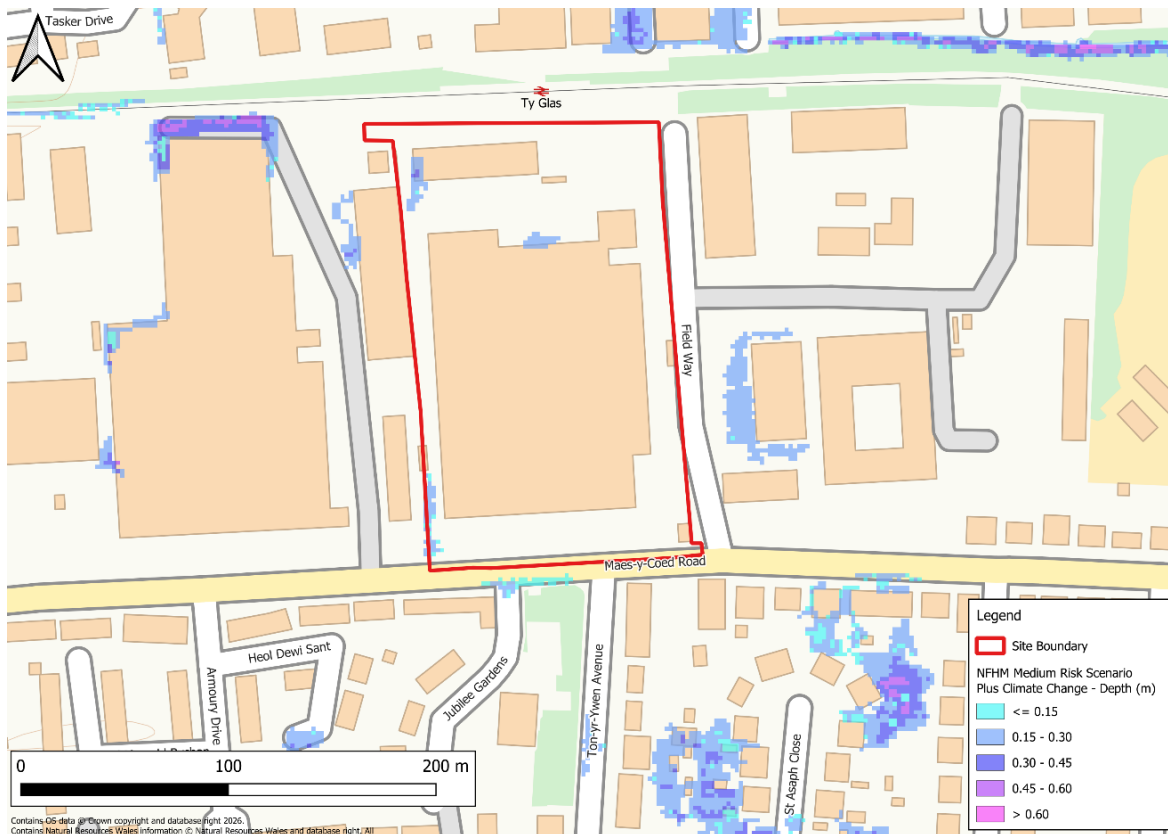


Figure 4-1: Flood Risk from Small Watercourses - 1% AEP + Climate Change - Flood depths

Figure 4-2 shows that in the 0.1% AEP plus climate change event, most of the site remains flood free, with surface water flooding predicted adjacent to the western boundary. Flood depths are typically less than 300mm, with a small, localised area in the north of the site reaching up to 440mm adjacent to the south-western façade of the rear building. Surface

water ponding is shown against the northern façade of the main building within which flood depths reach up to 380mm.

LiDAR analysis confirms the presence of a slight topographic depression along the western boundary beside the existing building. In addition, surrounding ground levels outside of the site to the west are typically 1m higher than those in the western extent of the proposed development site, resulting in the accumulation of surface water with limited drainage potential.

Such surface water ponding across the site has the potential to be an overestimation of actual surface water risk due to the nature of the broadscale modelling underpinning the Flood Map for Planning and NFHM not including existing drainage infrastructure across a site, which is likely present.

It is anticipated that surface water flood risk can be effectively managed and mitigated through efficient site design including the incorporation of SuDS.

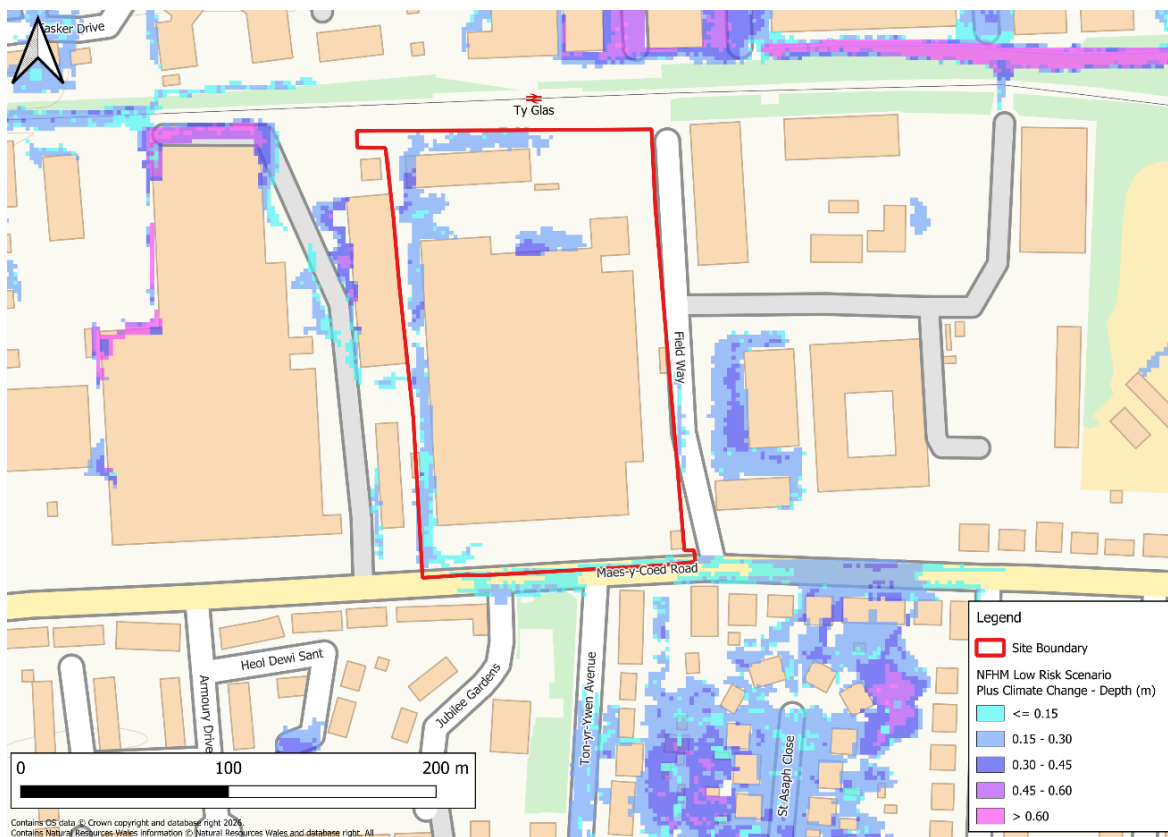


Figure 4-2: Flood Risk from Small Watercourses - 0.1% AEP + Climate Change - Flood depths

The primary access and egress route to the site is via Field Road, located along the eastern boundary, which provides a direct connection to Maes-y-Coed Road. Field Road is predicted to remain flood-free during both the 1% AEP and 0.1% AEP plus climate change events. During the 0.1% AEP plus climate change event only, Maes-y-Coed Road is predicted to flood up to 360mm to the south east of the site, and typically less than 150mm

directly to the south. These depths are not envisaged to substantially restrict vehicular or pedestrian access.

5 Application of Flood Zones to Development Management Decisions

The site is located within Flood Zone 1 for river and sea flooding. Within Flood Zone 1 all forms of development are acceptable in principle and further assessment or justification is not typically required.

The site is predominantly located within Flood Zone 1 of the FMfP for surface water and small watercourses. However, areas of the site are shown to be located within Flood Zones 2 and 3, associated with low lying ground levels.

When considering a site for development, Sections 10 and 11 of TAN-15 outline the requirements for the type of development permitted in any given flood zone. However, these sections do not strictly apply to the surface water and small watercourse zones in which this proposed development site lies. Instead, it is for the applicant to demonstrate alignment with the risk-based principles of TAN15 and the general acceptability criteria of Section 11.4 to ensure the following conditions are met:

- No increase in flooding elsewhere
- Occupiers aware of flood risk
- Escape/evacuation routes present
- Flood emergency plans and procedures agreed and in place
- Flood resistant and resilient design
- Acceptable consequences for type of use (see detailed guidance below):

Predicted flood depths across the site are shallow, and likely a consequence of existing topographic depressions which are likely to be addressed through the natural change of ground levels to facilitate development. In addition, the risk shown is considered likely to be an overestimation of the actual risk to the site due to the nature of the broadscale modelling underpinning the FMfP not including consideration of existing drainage infrastructure across a site.

Access and egress are key considerations within TAN-15. Access and egress are considered possible via Field Road, which leads to Maes-y-Coed Road. Maes-y-Coed Road is predicted to flood directly to the south of the site during the 0.1% AEP plus climate change event only, during which shallow flooding of less than 0.15m is predicted.

Given the presence of the site within Flood Zones 2 and 3 for surface water and small watercourses, the requirement for an FCA is triggered. However, given the nature of the risk to the site it is considered that a full FCA may not be required. Instead, flood risk can be appropriately addressed through a comprehensive Flood Risk and Surface Water Drainage Strategy to support the planning application.

It is likely that surface water flood risk can be managed through good site design, including the integration of site levelling and SuDS. Any planning application should be supported by a Surface Water Drainage Statement.

6 Summary and recommendations

The site is located within Flood Zone 1 for river and sea flooding.

The site is mostly located within Flood Zone 1 for surface water and small watercourses, with insignificant areas of Flood Zones 2 and 3. Consequently, an FCA will be required in support of any planning application for the site. Flood extents are associated with surface water ponding as a result of localised ground depressions.

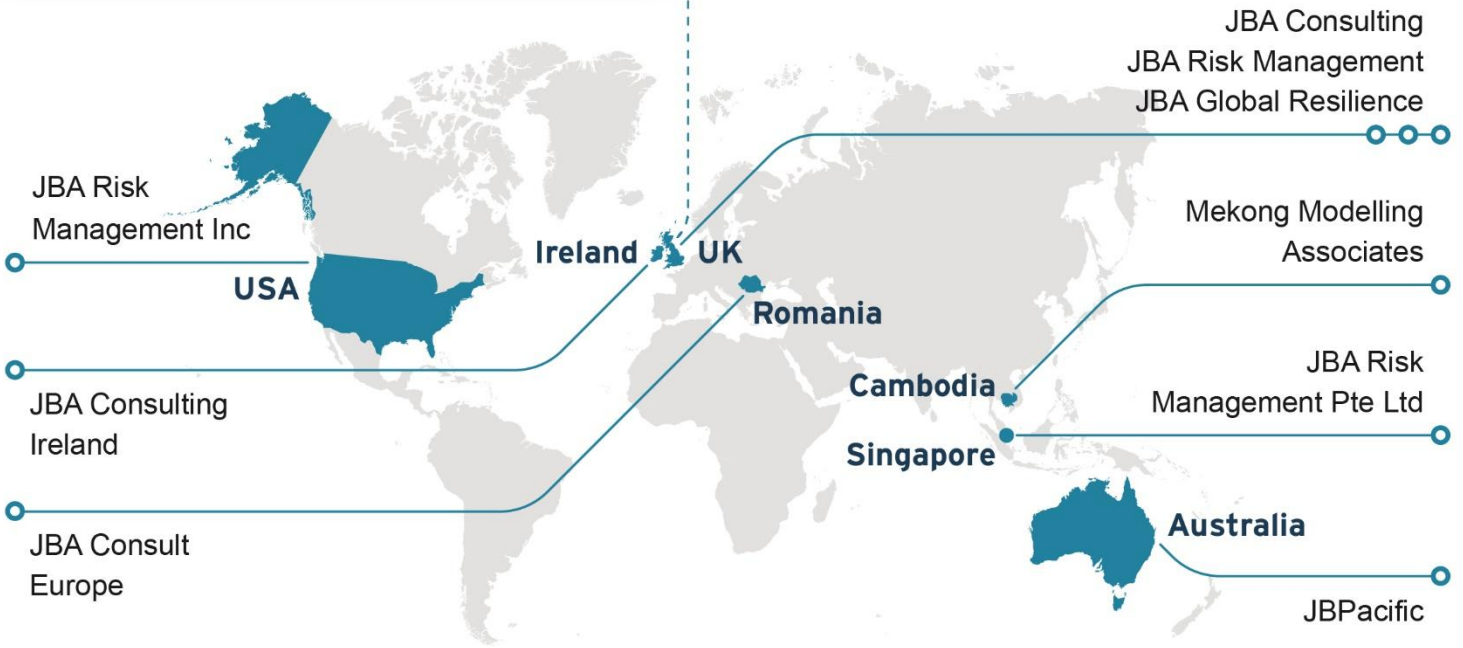
It is therefore considered that this site is likely to satisfy the requirements of TAN-15, subject to the following recommendations:

- Any planning application for the site should be accompanied by a comprehensive Flood Risk and Surface Water Drainage Strategy.
- The surface water drainage strategy should demonstrate how surface water shall be managed on site, in line with the Statutory Standards for SuDS in Wales, and TAN-15.



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