Weetwood
Development • Planning • Environment

MEADOW FARM, TREVALYN, ROSSETT

FLOOD CONSEQUENCES ASSESSMENT

Final Report v1.1
July 2025

Weetwood Services Ltd
info@weetwood.net
www.weetwood.net

Report Title	**Meadow Farm, Trevalyn, Rossett** Flood Consequences Assessment Final Report v1.1
Client	Joanna Gould
Date of issue	21 July 2025

Prepared by	Matthew Newbold BSc (Hons) MSc MCIWEM *Assistant Flood Risk Consultant*
Checked and approved by	Rebecca Murphy BSc (Hons) MCIWEM *Associate Director*

This document has been prepared solely as a Flood Consequences Assessment for Joanna Gould. This report is confidential to Joanna Gould and Weetwood Services Ltd accepts no responsibility or liability for any use that is made of this document other than by Joanna Gould for the purposes for which it was originally commissioned and prepared.

Contents

Signature Sheet i
Contents ii
List of Tables, Figures & Appendices iii
List of Abbreviations iv

1 Introduction 1

1.1 Purpose of Report 1
1.2 Structure of the Report 1
1.3 Relevant Documents and Planning Policy 1
1.4 Third Party Surveys, Drawings and Assessments 1
1.5 Explanatory Note on Flood Probability 2

2 Site Details and Proposed Development 3

2.1 Site Location 3
2.2 Existing and Proposed Development 3
2.3 Surface Waterbodies in the Vicinity of the Site 3
2.4 Topographic Levels 4
2.5 Ground Conditions 5

3 Planning Policy and Guidance 6

3.1 National Planning Policy and Policy Guidance 6
3.2 Local Planning Policy 6
3.3 Water Framework Directive 6
3.4 Environmental Permitting and Land Drainage Consent 7

4 Review of Flood Risk 8

4.1 Historical Records of Flooding 8
4.2 Flood Risk from the Sea (Tidal / Coastal) and Rivers (Fluvial) 8
4.3 Flood Risk from Small Watercourses and Surface Water (Pluvial) 11
4.4 Flood Risk from Reservoirs, Canals and Other Water Impounding Structures 11
4.5 Flood Risk from Groundwater 11
4.6 Flood Risk Mitigation 12
4.7 Flood Risk Elsewhere 13

5 Summary and Recommendations 14

List of Tables

Table 1: Estimated Site Flood Information - Tidal and Fluvial Undefended 10

List of Figures

Figure 1: Site Location and Wider Land Ownership 3
Figure 2: Site Location and Location of Surface Waterbodies 4
Figure 3: Digital Terrain Model from LiDAR Data 4
Figure 4: Flood Map for Planning - Recorded Flood Extents 8
Figure 5: Flood Map for Planning - Rivers and Sea 9
Figure 6: Existing River Dee Flood Defences 9
Figure 7: Flood Map for Planning - Surface Water and Small Watercourses 11
Figure 8: JBA Groundwater Flood Risk Indicator Map 12

List of Appendices

Appendix A: Proposed Site Plan
Appendix B: Natural Resources Wales Embankment Crest Levels

List of Abbreviations

AEP	Annual Exceedance Probability	LFRMS	Local Flood Risk Management Strategy
AOD	Above Ordnance Datum	LiDAR	Light Detection and Ranging
ASGWF	Areas Susceptible to Groundwater Flooding	LLFA	Lead Local Flood Authority
bgl	Below Ground Level	LPA	Local Planning Authority
BGS	British Geological Survey	l/s	Litres per Second
BRE	Building Research Establishment	m	Metres
BSI	British Standards Institute	m^2	Square Metres
CC	Climate Change	m^3	Cubic Metres
CCMA	Coastal Change Management Area	NFM	Natural Flood Management
CFMP	Catchment Flood Management Plan	NGR	National Grid Reference
CIRIA	Construction Industry Research and Information Association	NRW	Natural Resources Wales
		NVZ	Nitrate Vulnerable Zone
CRT	Canal and River Trust	OS	Ordnance Survey
DCWW	Dŵr Cymru Welsh Water	PFRA	Preliminary Flood Risk Assessment
DEFRA	Department for Environment, Food and Rural Affairs	PPW	Planning Policy Wales
		QBAR	Mean annual maximum runoff rate
DS	Drainage Statement	QMED	Median annual maximum runoff rate
EA	Environment Agency	RBD	River Basin District
FCA	Flood Consequences Assessment	RBMP	River Basin Management Plan
FCADS	Flood Consequences Assessment and Drainage Statement	RFI	Request for Information (to NRW)
		RMA	Risk Management Authority
FCERM	Flood and Coastal Erosion Risk Management	RoFSW	Risk of Flooding from Surface Water
		SAC	Special Area of Conservation
FFL	Finished Floor Level	SFCA	Strategic Flood Consequences Assessment
FMP	Flood Management Plan		
FRMP	Flood Risk Management Plan	SMP	Shoreline Management Plan
FWA	Flood Warning Area	SoP	Standard of Protection
FWEP	Flood Warning and Evacuation Plan	SSSI	Site of Special Scientific Interest
FWMA	Flood and Water Management Act	SAB	SuDS Approving Body
FWS	Flood Warning System	SuDS	Sustainable Drainage System
GSPZ	Groundwater Source Protection Zone	SWMP	Surface Water Management Plan
ha	Hectare	TAN15	Technical Advice Note 15
IDD	Internal Drainage Districts	WFD	Water Framework Directive
km	Kilometres		

1 INTRODUCTION

1.1 Purpose of Report

Weetwood Services Ltd ('Weetwood') has been instructed by Joanna Gould to prepare a FCA report to accompany a full planning application for the proposed redevelopment of an existing barn located at Meadow Farm, Trevalyn, Rossett ("the Site") for residential use.

A FCA was prepared by Weetwood in December 2024 (Ref: 6426/FCA/Final/v1.0/2024-12-19) in support of a pre-planning enquiry submitted to NRW. A response was received from NRW in its letter dated 8 May 2025 (Ref: CAS-279133-L1M2) and raised, most notably, the following points:

- The FCA does not refer to the new Technical Advice Note 15: Development, flooding and coastal erosion (March 2025).
- The FCA will need to consider breach and overtopping scenarios as outlined in Figure 2 – Technical requirements of a Flood Consequences Assessment (FCA), TAN 15 (March 2025), and include all correspondence/data received from NRW.

The FCA has been updated to address the above and has been undertaken in accordance with the requirements of TAN15 dated March 2025.

1.2 Structure of the Report

The report is structured as follows:

Section 1 Introduction and report structure
Section 2 Provides background information relating to the development site
Section 3 Presents national and local flood risk planning policy
Section 4 Assesses the potential risk of flooding to the development site
Section 5 Presents a summary of key findings and the recommendations

1.3 Relevant Documents and Planning Policy

The assessment has been informed by the following documents, policy and information:

- Technical Advice Note 15: Development, Flooding and Coastal Erosion, Welsh Government, March 2025
- Planning Policy Wales, Welsh Government, February 2024
- Wrexham Local Development Plan 2013-2028, Wrexham County Borough Council, December 2023
- Flood Consequences Assessments: Climate Change Allowances, Welsh Government, September 2021, https://gov.wales/sites/default/files/publications/2021-09/climate-change-allowances-and-flood-consequence-assessments_0.pdf
- Guidance on the Code of Practice for Property Flood Resilience (C790B), CIRIA, November 2020
- Dee Preliminary Flood Risk Assessment, Natural Resources Wales, December 2018
- Preliminary Flood Risk Assessment Addendum, Wrexham County Borough Council, November 2017
- Flood Risk Management Plan 2016-2021, Wrexham County Borough Council, July 2016
- Local Flood Risk Management Strategy, Wrexham County Borough Council, April 2013
- Soilscapes, Soil and AgriFood Institute, Cranfield University, www.landis.org.uk/soilscapes;
- National Geoscience Data Centre's Single Onshore Borehole Index, https://www.bgs.ac.uk/products/onshore/SOBI.html;
- BGS Mapping of Surface Geology, https://www.bgs.ac.uk/map-viewers/geoindex-onshore/.

1.4 Third Party Surveys, Drawings and Assessments

The assessment has been informed by the following third party surveys, drawings and assessments:

- Proposed Site Plan, Blueprint Architectural Services, October 2024 (**Appendix A**);
- Design and Access Statement, Blueprint Architectural Services, October 2024 (submitted separately).

1.5 Explanatory Note on Flood Probability

This report refers to the likelihood of a flood event occurring in terms of an AEP expressed as a percentage. This terminology is consistent with the definition of the development advice zones presented in Figure 1 of TAN15 (2025) and the flood zones on the Flood Map for Planning (refer to **Section 4.2** of this report).

The AEP is the reciprocal of the return period which describes the rarity of an event in terms of its statistical reoccurrence interval in years. For example, a '1 in 30 year flood' has a 1/30 = 0.033 (3.3%) probability of occurring or being exceeded in any one year, whilst a '1 in 100 year flood' has a 1/100 = 0.010 (1.0%) probability of occurring or being exceeded in any one year.

AEP	AEP (expressed as a %)	Return Period (years)	Alternative Expression
1.000	100.0%	1	1 in 1
0.500	50.0%	2	1 in 2
0.435	43.5%	2.3	1 in 2.3
0.100	10.0%	10	1 in 10
0.050	5.0%	20	1 in 20
0.033	3.3%	30	1 in 30
0.020	2.0%	50	1 in 50
0.010	1.0%	100	1 in 100
0.005	0.5%	200	1 in 200
0.001	0.1%	1,000	1 in 1,000

2 SITE DETAILS AND PROPOSED DEVELOPMENT

2.1 Site Location

The approximately 0.11 ha site is located north-east of Trevalyn at OS NGR SJ 386 568, as shown in **Figure 1**.

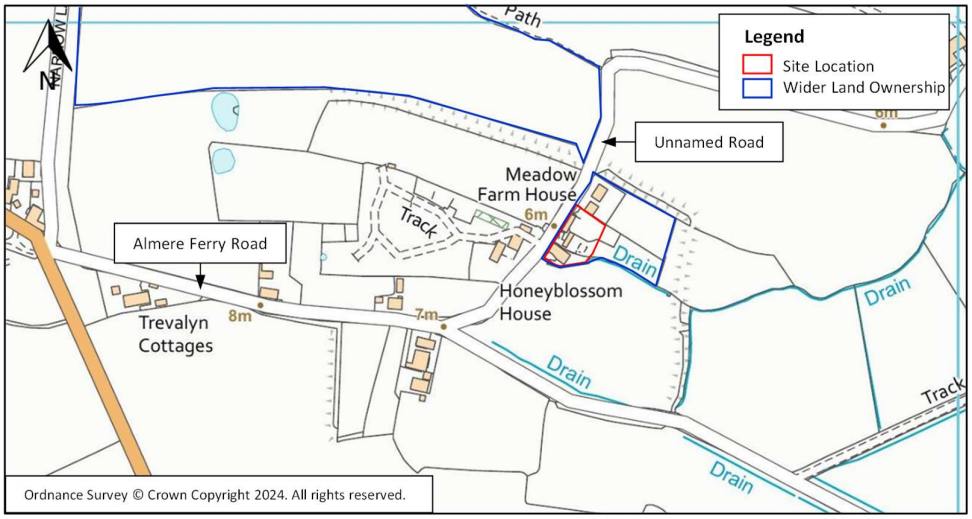


Figure 1: Site Location and Wider Land Ownership

2.2 Existing and Proposed Development

The site currently comprises disused agricultural buildings.

Proposals are for the conversion and extension of the former barn to the west of the site into a dwelling and removal of the steel framed structure located adjacent to the former barn. Vehicular access will continue to be provided via the unnamed road to the west of the site. The proposed site plan is provided in **Appendix A**.

TAN15 classifies residential development as Highly Vulnerable to flood risk.

2.3 Surface Waterbodies in the Vicinity of the Site

The River Dee flows in a generally northern direction approximately 1.6 km east of the site.

The River Alyn flows in an easterly direction approximately 0.7 km south of the site outfalling into the River Dee approximately 1.4 km south-east of the site.

Figure 2 indicates that there is large land drainage network to the east of the site; with Drain A being the most proximate to the site. The network is assumed to convey flows in a generally eastern direction toward the River Dee.

The River Alyn and the River Dee are designated as main river.

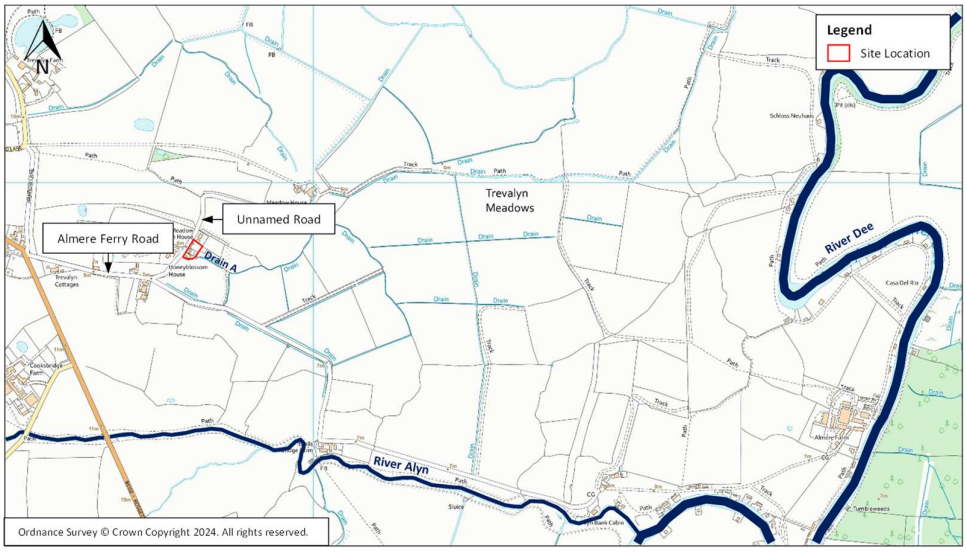


Figure 2: Location of Surface Waterbodies

2.4 Topographic Levels

LiDAR data has been used to develop a digital terrain model of the site and surrounding area as illustrated in **Figure 3**.

Site levels are indicated to range from 7.15 to 8.03 m AOD, with average levels in the immediate vicinity of the existing barn indicated to be 7.86 m AOD. Ground levels along the unnamed road to the west of the site are shown to be in the region of 6.43 - 7.23 m AOD.

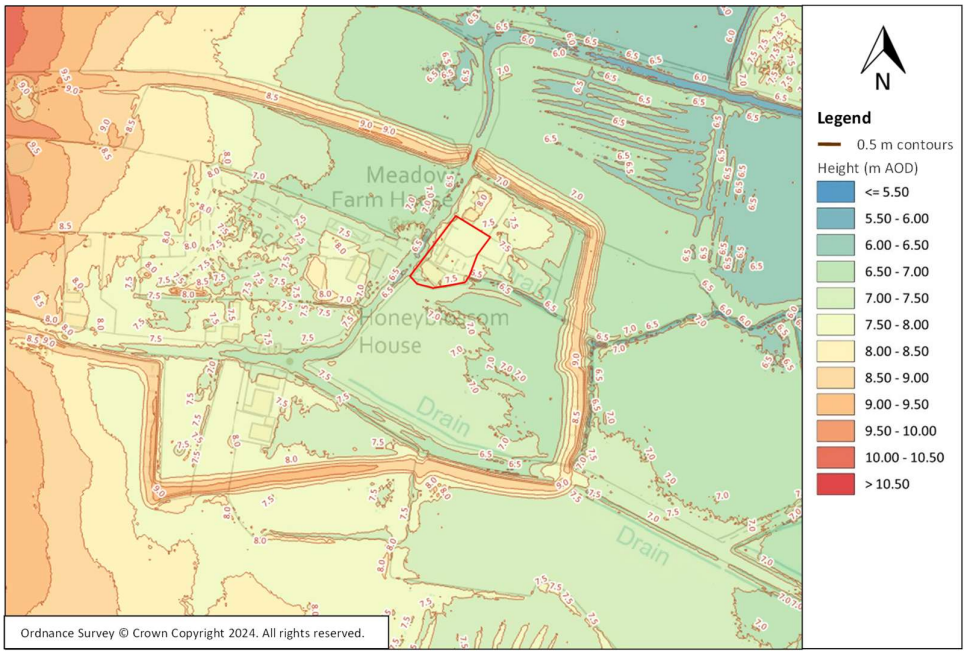


Figure 3: Digital Terrain Model from LiDAR Data

2.5 Ground Conditions

According to the Soilscapes soils dataset produced by the Cranfield Soil and AgriFood Institute[1], soil conditions at the site and within the surrounding area are described as loamy and clayey floodplain soils with naturally high groundwater.

BGS mapping of surface geology[2] indicates the underlying bedrock formation comprises Kinnerton sandstone, overlain by alluvium (clay, silt, sand, and gravel) superficial deposits.

According to the BGS and NRW aquifer designation dataset[3] the superficial deposits at the site are classified as a Secondary A aquifer whilst the underlying bedrock is classified as a Principal aquifer. The site is shown to be located within a designated GSPZ[4].

1 www.landis.org.uk/soilscapes/
2 https://www.bgs.ac.uk/map-viewers/geoindex-onshore/
3 https://www.bgs.ac.uk/map-viewers/geoindex-onshore/
4 https://datamap.gov.wales/layers/inspire-nrw:NRW_Source_Protection_Zones

3 PLANNING POLICY AND GUIDANCE

3.1 National Planning Policy and Policy Guidance

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

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

PPW sets out government's planning policies for Wales and how these are expected to be applied. TAN15 provides technical guidance which supplements the policy within PPW and seeks to ensure that flood risk is taken into account at all stages in the planning process and is appropriately addressed.

The general approach of TAN15 is to set out a precautionary framework to guide planning decisions in areas at high risk of flooding. The overarching aim of TAN15 is to provide a framework within which the flood risks arising from rivers, the sea and surface water, and the risk of coastal erosion can be assess. IT also provides advice on the consequences of the risks and adapting to and living with flood risk.

3.2 Local Planning Policy

The Wrexham Local Development Plan 2013 - 2028 was adopted by Wrexham County Borough Council in December 2023. The following policies are relevant in respect of flood risk:

Policy SP18 - Climate Change

To mitigate against the effects of climate change and adapt to its impacts, development proposals will need to demonstrate that they have considered the following:

vi. Avoiding areas susceptible to flood risk in the first instance in accordance with the sequential approach set out in national guidance. Highly vulnerable development, as defined in TAN15: Development and Flood Risk, should not be located within zone C2;
vii. Preventing development that increases flood risk and;
viii. Assesses the potential effects of climate change when preparing a Flood Consequence Assessment for the site

Policy DM1 Development Management Considerations

Development proposals, where relevant, must:

vii. Not increase the risk of flooding but makes adequate provision for sustainably dealing with foul and surface water drainage and not result in an unacceptable impact upon the water environment.

3.3 Water Framework Directive

The WFD provides a legal framework for the protection, improvement and sustainable use of inland surface waters, groundwater, transitional waters, and coastal waters across England, and seeks to:

- Prevent deterioration in the status of surface water and groundwater bodies;
- Protect, enhance and restore surface water and groundwater bodies (except artificial or heavily modified water bodies) with the aim of achieving good ecological, chemical and groundwater quantitative status by December 2021;
- Protect and enhance artificial and heavily modified water bodies with the aim of achieving good ecological potential and good chemical status by December 2021;

- Progressively reduce or phase out the release of individual pollutants or groups of pollutants that present a significant threat to the aquatic environment and progressively reduce pollution of groundwater.

The WFD applies to any proposed development which has the potential to impact on a waterbody. Where this is the case, the EA may require evidence demonstrating that the proposed development does not compromise the aims of the WFD.

3.4 Environmental Permitting and Land Drainage Consent

Under the Environmental Permitting (England and Wales) Regulations 2016 an Environmental Permit for Flood Risk Activities[5] is required from NRW for any permanent or temporary works, including works:

- In, over or under a designated main river
- Within 8 m of the top of bank of a designated main river or of the landward toe of a flood defence (16 m if it is a tidal main river or a sea defence).

In addition, any permanent or temporary works within the floodplain of a designated main river may also require an Environmental Permit for Flood Risk Activities. A permit is separate to and in addition to any planning permission granted.

If the location of an activity is on an ordinary watercourse that lies within an IDD, land drainage consent may be required from NRW.

Undertaking activities controlled by local byelaws also requires the relevant consent.

5 https://www.gov.uk/guidance/flood-risk-activities-environmental-permits

4 REVIEW OF FLOOD RISK

4.1 Historical Records of Flooding

The Flood Map for Planning - Recorded Flood Extents and associated database[6] (refer to extract in **Figure 4**), indicate that flooding encroached onto the lower-lying south-western extremity of the site in October 2023 (Storm Babet); however, no flooding of the remainder of the site, including the existing building, occurred.

NRW confirmed in its letter dated 8 May 2025 that the flood extent observed during Storm Babet occurred due to the flood defence barriers not being deployed, rather than overtopping or failure of the defences, allowing the defended cell to fill with fluvial floodwater.

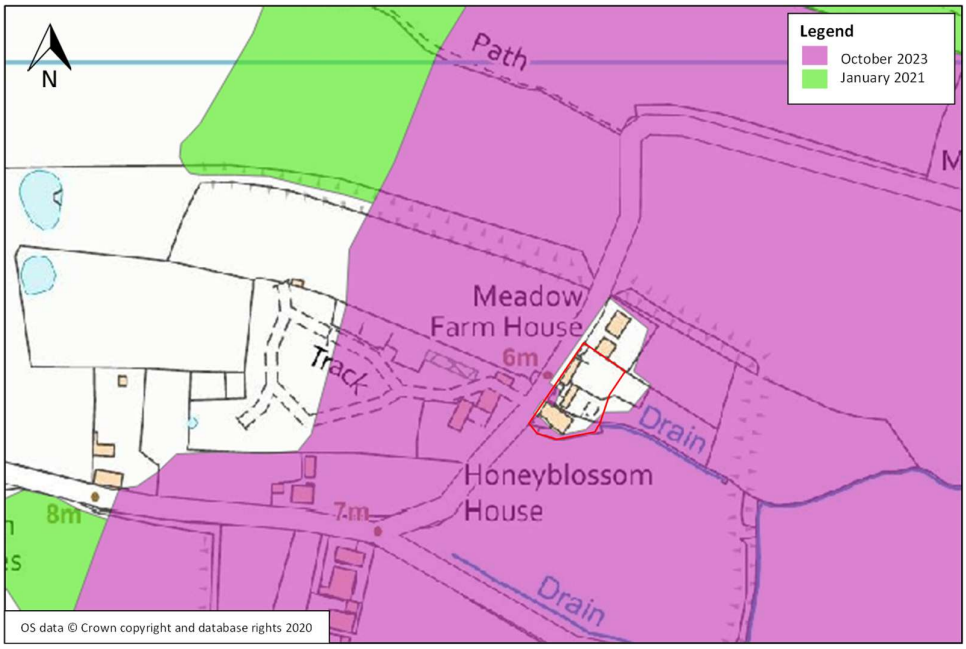


Figure 4: Flood Map for Planning - Recorded Flood Extents
Source: NRW website; Accessed: July 2025

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

The Flood Map for Planning - Rivers and Sea (**Figure 5**) indicates the site to be located in flood zone 3 (rivers) and partially within flood zone 2 and 3 (sea). The site is also shown to be located within a TAN15 defended zone.

The flood zones are defined as follows and include the effects of climate change:

- Flood zone 1 (Rivers and Sea): Less than a 0.1% chance of flooding from rivers and the sea in a given year
- Flood Zone 2 (Rivers): Areas with a 0.1% to 1.0% chance of flooding from rivers in a given year
- Flood Zone 3 (Rivers): Areas with more than a 1.0% chance of flooding from rivers in a given year
- Flood Zone 2 (Sea): Areas with a 0.1% to 0.5% chance of flooding from the sea in a given year
- Flood Zone 3 (Sea): Areas with more than a 0.5% chance of flooding from the sea in a given year
- TAN15 Defended Zones: Areas that benefit from RMA flood defences with a present day 1.0% AEP and 0.5% AEP SoP for rivers and the sea respectively

[6] https://datamap.gov.wales/layers/inspire-nrw:NRW_HISTORIC_FLOODMAP

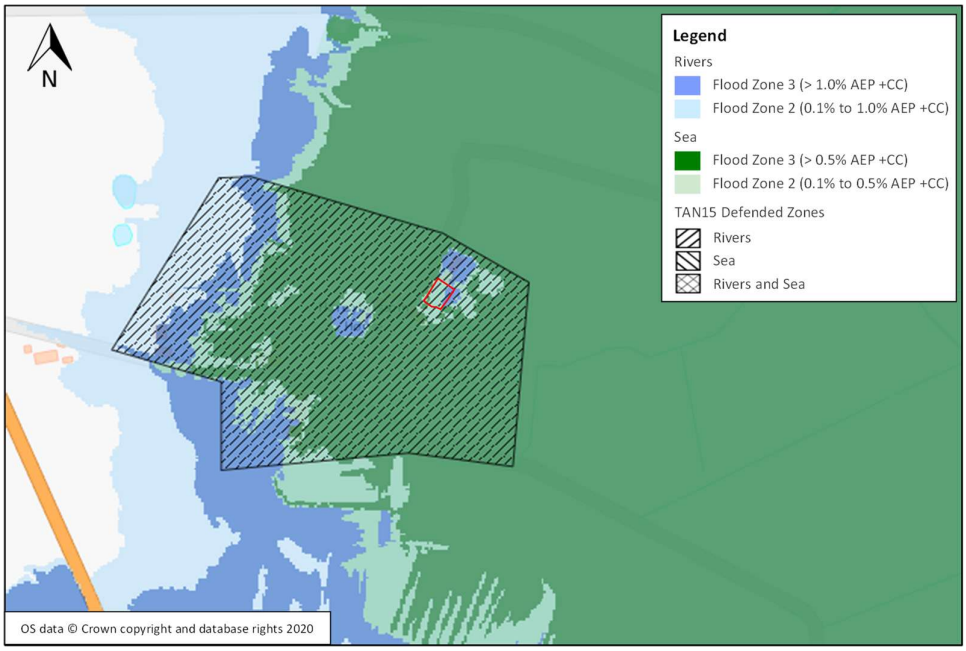


Figure 5: Flood Map for Planning - Rivers and Sea
Source: NRW website; Accessed: July 2025

As indicated on the DataMapWales[7], Flood defences are present in the form of an embankment which surrounds the land within the immediate vicinity of the site to the north, east, and south, with higher ground along the west of the defended cell. There are also two locations in which demountable flood barriers can be deployed to the north and south-east of the site (refer to **Figure 6**). NRW mapping indicates the embankment to be 1015 m in length, with a SoP of up to the 1.0% AEP event. NRW has confirmed that crest levels for the embankment range from 8.60 - 9.20 m AOD (**Appendix B**).

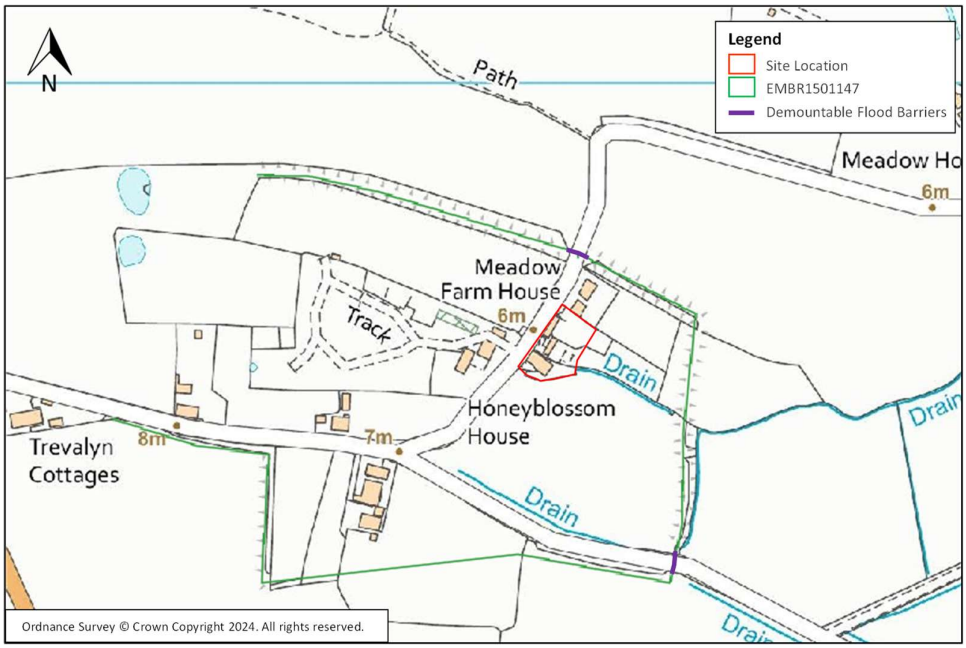


Figure 6: Existing River Dee Flood Defences

[7] https://datamap.gov.wales/layergroups/geonode:nrw_flood_defence_structures

NRW has provided detailed modelled outputs for the River Alyn, these outputs have confirmed that the site is not at risk of flooding from the River Alyn.

NRW has indicated that no detailed modelled outputs are available for the River Dee within the vicinity of the site. A comparison of the flood outlines presented on the Flood Map for Planning and ground levels has therefore been undertaken to derive flood levels for the fluvial (1.0% AEP) and tidal (0.5% AEP) scenarios including an allowance for climate change.

The climate change allowance applied to the fluvial outlines on the Flood Map for Planning is based on the Central estimate peak river flow allowance. It is assumed that the climate change allowance applied to the tidal flood outlines is derived from the estimated mean sea level rise to the year 2120 (70th percentile - 70P).

For fluvially dominated events the Welsh Government climate change guidance recommends that the central estimate should be used to assess flood risk for the lifetime of the development and to inform design levels. The guidance states that an assessment should also be made using the upper end estimate to inform mitigation measures that help to ensure the long-term resilience of a development. The central and upper end estimates for the Dee River basin district are +20% and +45% (2080s) respectively. A simple level-discharge relationship has been developed to estimate maximum flood levels for the 1.0% AEP event +45% plus climate change.

For tidally dominated events the Welsh Government climate change guidance states *"as a minimum, development proposals should be assessed against the relevant regional 70th percentile… to inform design levels. An assessment should also be made against the 95th percentile [95P] to inform mitigation measures, access and egress routes and emergency evacuation plans"*. Maximum flood levels for the year 2125 have been derived by applying an additional 58 mm to the 70P (2120) scenario, whereas flood levels for the 95P (2125) scenario have been derived by applying 346 mm to the 70P (2120) scenario. The maximum flood level estimated at the site during the fluvial and tidal scenarios, ignoring the presence of the flood defences, is detailed in **Table 1**. With the crest of the flood defence illustrated in **Figure 6** at a level of 8.60 - 9.20 m AOD this indicates that no overtopping of the embankment would be expected except during a 0.1% AEP and 0.1% AEP +20% climate change fluvial events when this would be overtopped by a maximum of 0.20m and 0.64m respectively.

In the event of defence failure (breach or failure to deploy), **Table 1** summarises the maximum depth of floodwaters that may be expected at the site. This indicates that maximum flood depths at the site are typically expected to remain below 550 mm in all events, except for the 0.1% AEP fluvial, 0.1% AEP +20% climate change fluvial, and 0.1% AEP (2125 - 95P) tidal events.

It should be noted that the flood levels presented in **Table 1** assume that this would remain linear and would not be altered as floodwater enters the defended cell. This is considered to be a conservative approach to assessing flood risk at the site and as such, it may be reasonable to assume that the maximum depths of floodwaters may not be fully realised.

Table 1: Estimated Site Flood Information - Tidal and Fluvial Undefended
Source: Flood Map for Planning, Natural Resources Wales; Accessed: December 2024

Scenario	AEP Event	Max Level (m AOD)	Max Depth (m)	
			Highest	Mean*1
Tidal	0.5% (2019)*2	6.55	n/a	n/a
	0.1% (2019)*2	6.80	n/a	n/a
	0.5% plus CC (2125 - 70P)	7.91	0.00 - 0.76	0.14
	0.1% plus CC (2125 - 70P)	8.15	0.12 - 1.00	0.38
	0.5% plus CC (2125 - 95P)	8.25	0.22 - 1.10	0.48
	0.1% plus CC (2125 - 95P)	8.49	0.46 - 1.34	0.72
Fluvial	1.0% (2019)*2	7.94	0.00 - 0.79	0.17
	1.0% +20% CC	8.10	0.07 - 0.95	0.33
	1.0% +45% CC	8.30	0.27 - 1.15	0.55
	0.1% (2019)*2	8.80	0.77 - 1.65	1.03
	0.1% +20% CC	9.24	1.21 - 2.09	1.47

**1 Derived using an average ground level of 7.77 m AOD on the site.*
**2 Derived from the Flood Risk Assessment for Wales Map*

4.3 Flood Risk from Small Watercourses and Surface Water (Pluvial)

As detailed in **Section 2.3**, there is large land drainage network to the east of the site. No modelled information is available for these watercourses. The Flood Map for Planning - Surface Water and Small Watercourses (**Figure 7**) has therefore been utilised to assess the risk of flooding from these sources and pluvial surface water. This mapping indicates that the site is not at risk of flooding from the network of drainage ditches or pluvial surface water in up to a 0.1% AEP event including an allowance for climate change; albeit, some flooding of the unnamed access to the west of the site is indicated.



Figure 7: Flood Map for Planning - Surface Water and Small Watercourses
Source: NRW website; Accessed: July 2025

4.4 Flood Risk from Reservoirs, Canals and Other Water Impounding Structures

There are no canals or other impounded waterbodies located within the immediate vicinity of the site. The Flood Map for Planning - Flood Risk from Reservoirs (not shown) indicates that the site is not at risk of flooding from such sources.

4.5 Flood Risk from Groundwater

The JBA Groundwater Flood Risk Indicator map (**Figure 8**) indicates that the site is at a Negligible risk during a 1.0% AEP groundwater flood event.

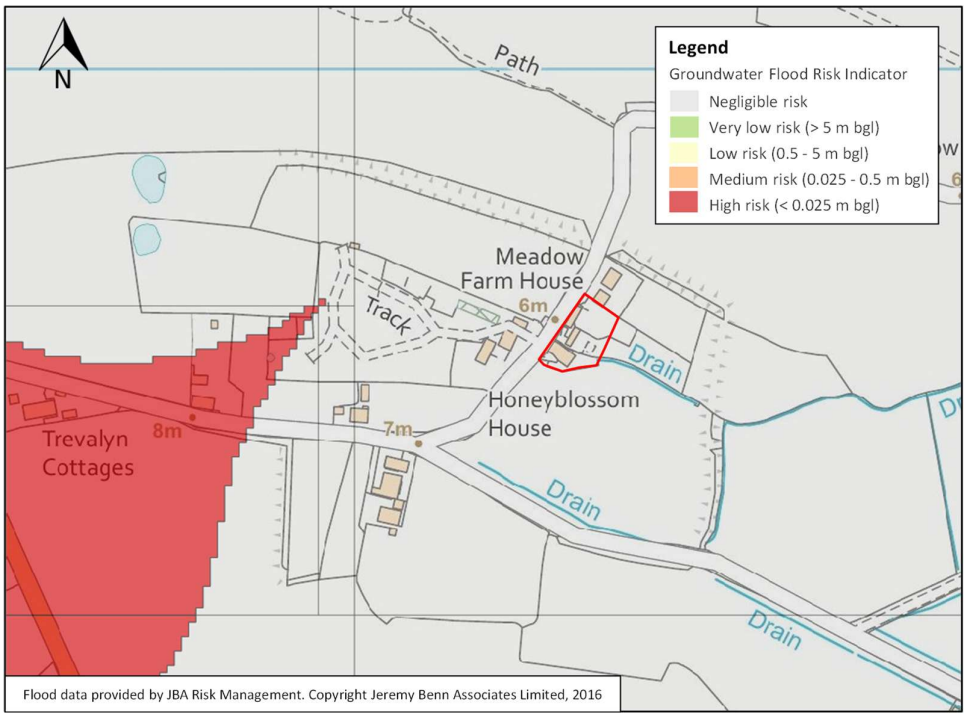


Figure 8: JBA Groundwater Flood Risk Indicator Map
Source: Blue Sky Maps; Accessed: December 2024

4.6 Flood Risk Mitigation

The risk of flooding to the proposed development from all identified sources is assessed to be negligible / low, with the exception of tidal and fluvial flooding from the River Dee. Due to the constraints imposed by existing infrastructure and topography it is not feasible for ancillary areas to be raised, nevertheless, minimal external works are proposed at the site, with the majority of the area to remain as existing. The risk of flooding to the proposed development will therefore be mitigated through the implementation of the measures outlined in the following sections.

4.6.1 Finished Floor Levels

Given the nature of the proposals, the ability to substantially redesign the existing building is limited. Nevertheless, it is proposed that the FFL of the proposed dwelling is raised to a minimum of 8.30 m AOD, which is the flood level expected at the site in a 1.0% AEP fluvial undefended (defence failure proxy) event +45% climate change.

This also provides a freeboard of 200 mm, 150 mm and 50 mm above the 1.0% AEP fluvial event +20% climate change, 0.1% AEP (2125 - 70P) tidal event and 0.5% AEP (2125 - 95P) tidal event for the undefended (defence failure proxy) scenario.

The above measure would subsequently ensure compliance with para. 11.7 and Figure 5 of TAN15.

The proposals would also comply with the tolerable conditions outlined in Figure 6 of TAN15 for the 0.1% AEP fluvial event and 0.1% AEP (2125 - 95P) tidal event for the undefended (defence failure proxy) scenario; albeit a flood depth of 0.94 m may be expected in a 0.1% AEP fluvial event +20% climate change for the same scenario. However, the property will be two-storey and therefore the first floor would provide an area of safe refuge during the above event.

In addition to the above, the FFL should be at least 0.15 m above adjacent ground levels following any reprofiling of the site, with ground levels sloping down from the dwelling.

4.6.2 Flood Resilience

The dwelling should have designed in resilience to flooding to a minimum level of 9.24 m AOD, which is the flood level expected at the site in a 0.1% AEP fluvial undefended (defence failure proxy) +20% climate change. e.g. raised power sockets, non-return valves on ground floor drainage, in line with CIRIA guidance.

4.6.3 Flood Emergency Planning Measures

It is recommended that a FWEP is prepared in consultation with Wrexham City Council emergency planning team. The site is included in a NRW flood alert and warning area. This provides the opportunity for the relevant response procedures set out in the plan to be invoked in response to receipt of a flood warning from NRW.

4.7 Flood Risk Elsewhere

In accordance with Figure 2 and para. 11.4 of TAN15 developers must ensure there will be no increase in flood risk elsewhere up to the severity of the 0.1% AEP event including an allowance for climate change and should consider defence failure where necessary.

A flood level of 9.24 m AOD is estimated at the site during a 0.1% AEP fluvial undefended (defence failure proxy) event +20% climate change (the most conservative scenario for which flood risk elsewhere needs to be assessed).

Ground levels within the site are proposed to remain as existing. However, the average ground level within the area of the site that will occupy the increased building footprint of 84 m^2 is assessed to be approximately 7.81 m AOD. A flood depth of 1.43 m may therefore be expected within this area, with the loss of floodplain storage calculated to be 120 m^3.

Due to topography falling away from the site in a south-easterly direction, any displaced floodwater may be expected to remain within the confines of the flood defence embankment, flowing onto either the wider land ownership to the east or the adjacent undeveloped agricultural land to the north-west and south-east. Within this land, there is an approximate 34,500 m^2 area that is lower lying than the site. Displacing 110 m^3 over this area would result in a negligible increase of 3.5 mm to existing flood depths.

Given that the mean depth of flooding within the areas that flow is expected to be displaced is approximately 1.9 m (based on an average ground level of 7.34 m AOD) during the aforementioned event, it is considered that the proposals will have no material impact on flood risk elsewhere.

5 SUMMARY AND RECOMMENDATIONS

This report has been prepared on behalf of Joanna Gould and relates to the proposed redevelopment of an existing barn located at Meadow Farm, Trevalyn, Rossett for residential use.

The Flood Map for Planning - Rivers and Sea indicates the site to be located in flood zone 3 (rivers), as well as partially within flood zone 2 and 3 (sea). The site is located within a TAN15 defended zone.

An assessment of flood risk from all identified potential sources of flooding has been undertaken using best available information. The risk of flooding to the proposed development is assessed to be negligible / low with the exception of tidal and fluvial flooding from the River Dee.

The assessment presented in this report demonstrates that the proposed development may be completed subject to the following:

- FFL to be set at a minimum of 8.30 m AOD and at least 0.15 m above adjacent ground levels following any reprofiling of the site, with ground levels sloping down from the dwellings.
- Dwelling should have designed in resilience to flooding to a level of 9.24 m AOD. e.g. raised power sockets, non-return valves on ground floor drainage.
- FWEP to be developed in consultation with Wrexham City Council.

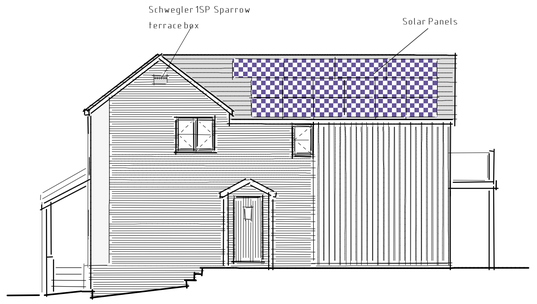
Any impact on flood risk elsewhere is expected to be minimal.

APPENDIX A

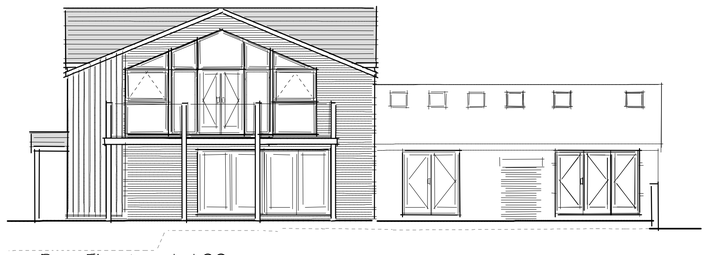
Proposed Site Plan



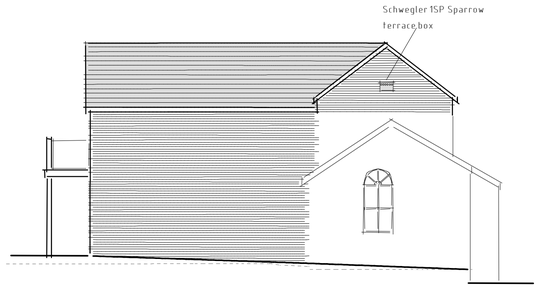
Front Elevation 1:100



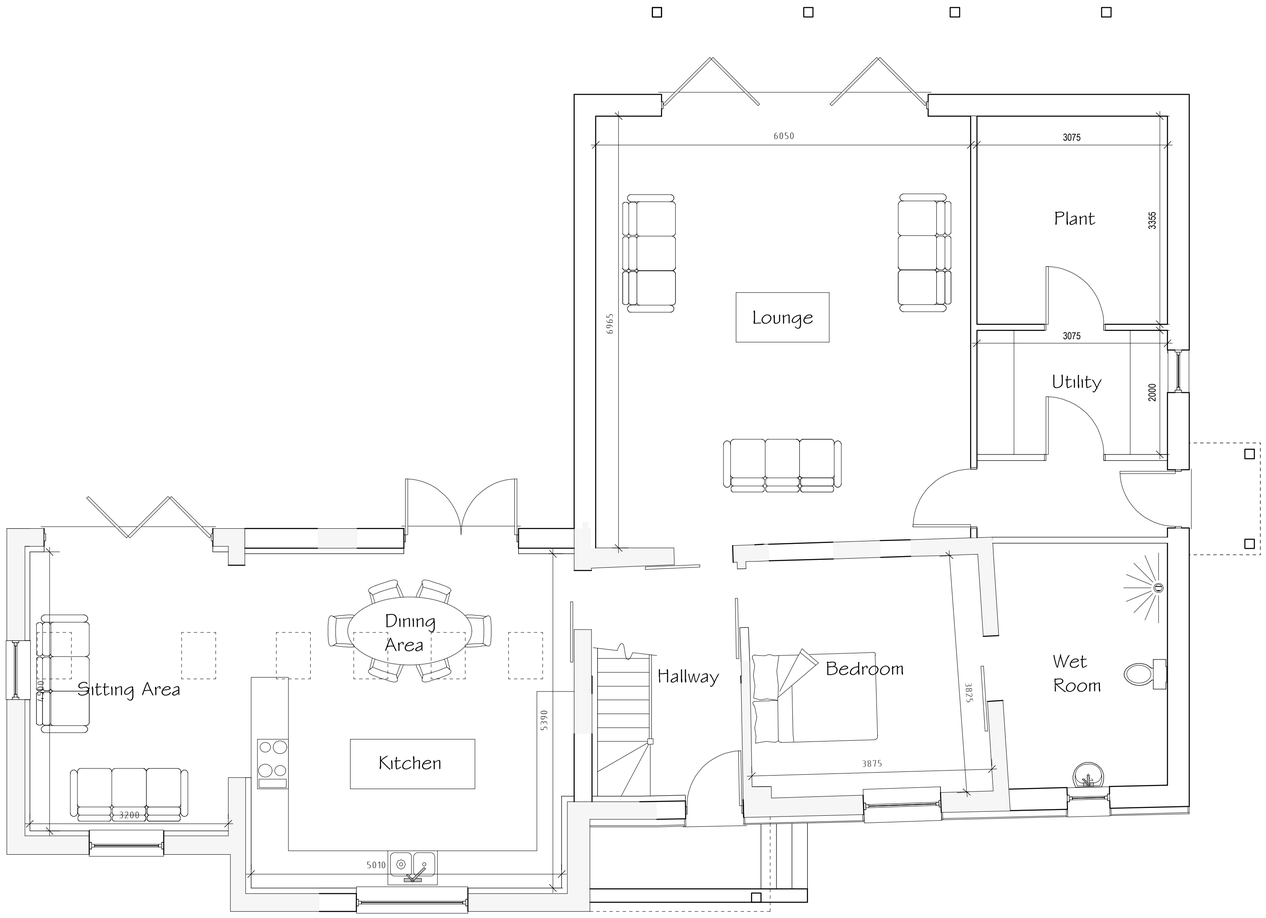
Side Elevation 1:100



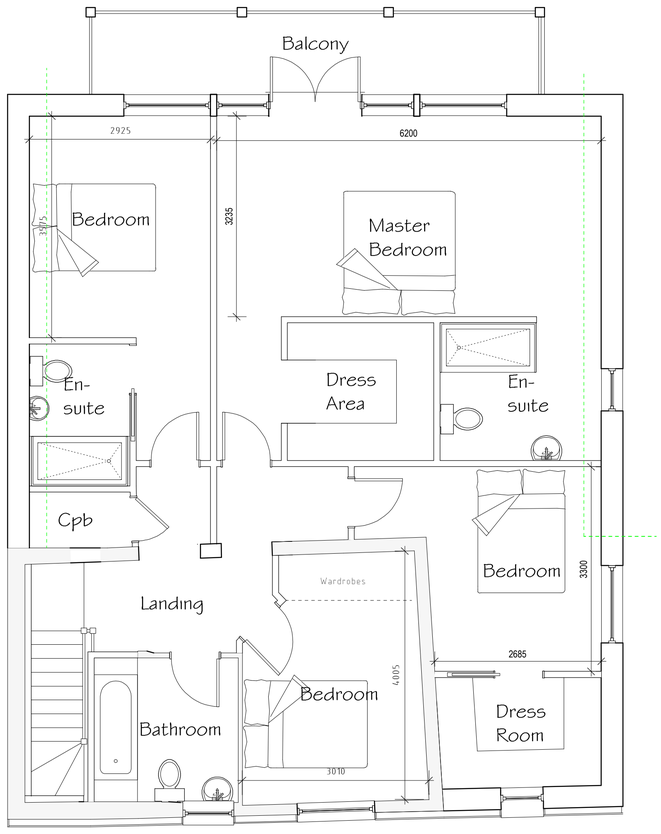
Rear Elevation 1:100



Side Elevation 1:100



Ground Floor Plan 1:50



First Floor Plan 1:50

External Facing Materials
External walls are to comprise timber cladding and brickwork to match existing.

Roofing Materials
Roof coverings are to be natural slate roofing tiles to match existing.

Windows
All windows are to comprise sealed double glazed units set in uPVC frames.

Facias & Soffits
All fascias and soffits are to comprise white uPVC to match existing.

Rainwater Goods
Rainwater to be collected in 100mm diameter half round uPVC guttering and 65mm diameter uPVC downpipes, to discharge to soakaways located in garden.

Green Infrastructure Statement
The proposed parcel of land occupies a developed plot of land. Established gardens are to be improved and maintained following the alterations proposed at the property. As documented, it is proposed the development includes the erection of bird boxes to provide a net bio-diversity gain for the site.



Schwegler 1SP Sparrow terrace box to be fitted prior to first beneficial use of the proposal

Rev	Date	Detail	Initial
E	07/25	40mm FFL increase	D.J.E.
D	06/25	Design Amendment	D.J.E.
C	06/25	Design Amendment	D.J.E.
B	06/25	Design Amendment	D.J.E.
A	10/24	Design Amendment	L.F.

Project: Proposed Alterations at
Meadow Farm,
Trevalyn,
Rossett,
Wrecsam,
LL12 OBT

Title: Planning

Scale: (A1) 1:50 & 1:100

Drawn By: L. Fowles

Date: Oct 2024

Drawing No: G101/003

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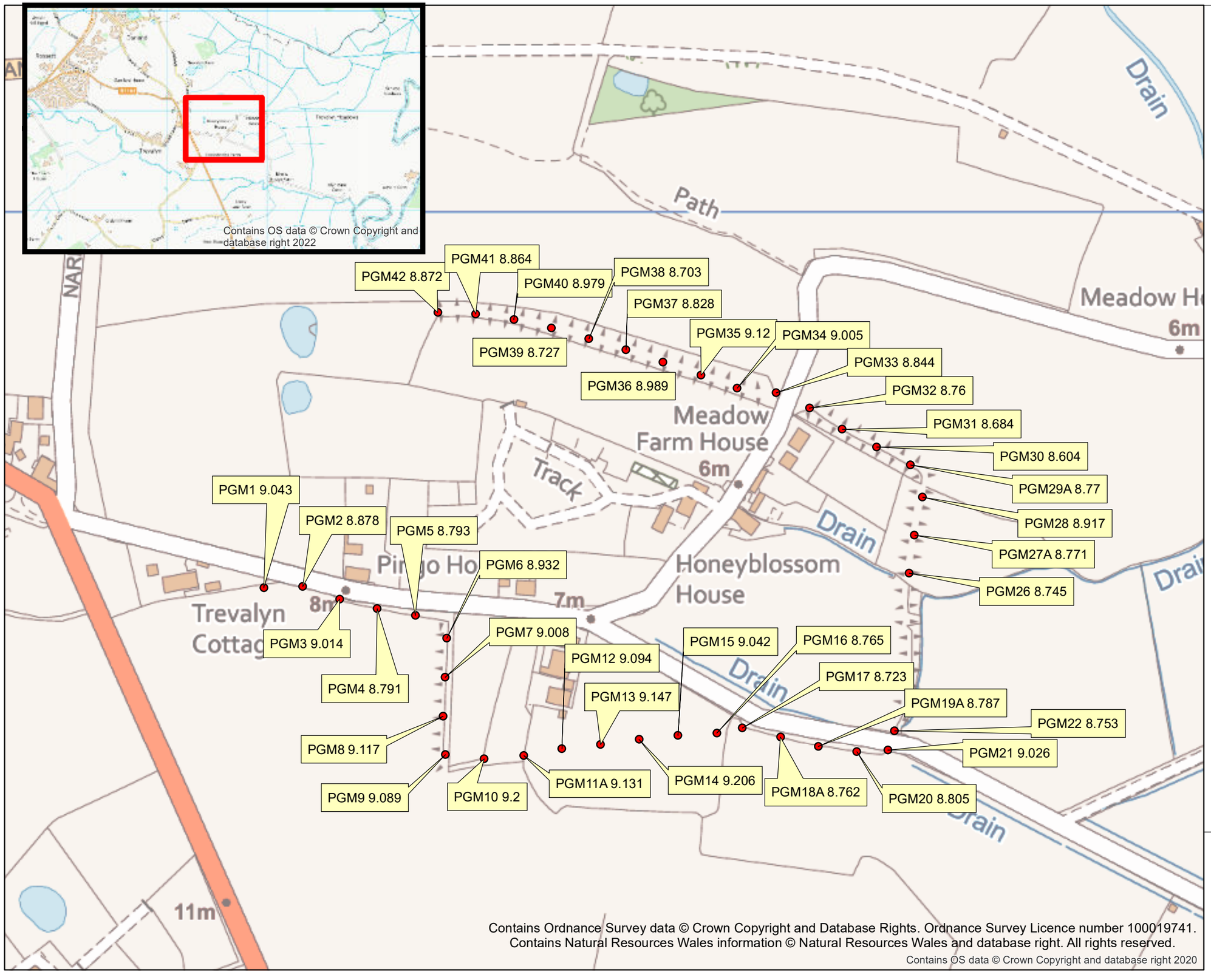
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APPENDIX B

Natural Resources Wales Embankment Crest Levels

Cyfoeth Naturiol Cymru
Natural Resources Wales

Crest levels for the embankment (Asset ID EMBR1501147).



Legend

- Crest Levels 2024
- Main Rivers

1:2,389

Meters

0 50 100

N

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