



Project Title: 00105 Bridge House, Vicarage Lane

Product: Level 2 Flood Consequence Assessment

Date: 27 February 2021

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Report Revision Log

Report Reference	Date Issued	Issued To	Notes
00105 Bridge House, Vicarage Lane	22/02/2021	Client	
00105 Bridge House, Vicarage Lane	27/02/2021	Client	Appendix Adjustment

1. INTRODUCTION

1.1. PURPOSE OF THE REPORT

FloodPlan have been commissioned on behalf of Ms K. Schaefer to produce a Flood Risk Assessment for a site at Bridge House, Penley, Wrexham, LL13 0NF. This assessment has been conducted with the understanding that the document will be used as part of a planning permission proposal by Ms K. Schaefer.

1.2. LOCATION OF SUBJECT SITE

The site is located at site near Bridge House, Penley, Wrexham, LL13 0NF (340792, 342559). The site is located near the junction of Hollybush Road and Vicarage Lane. Access to the site is gained via Vicarage Lane.

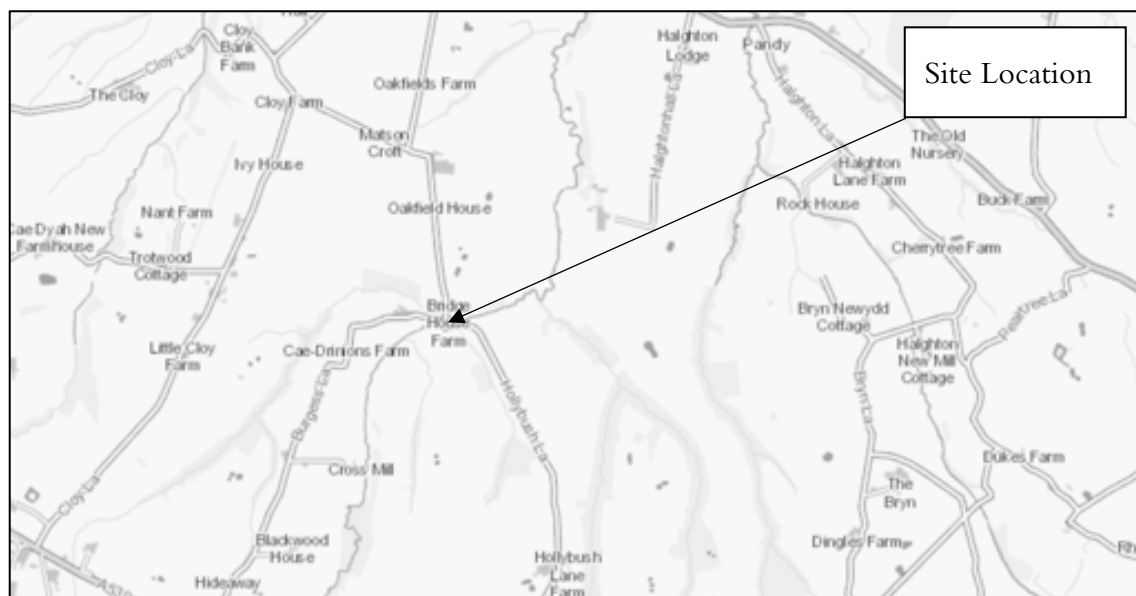


Figure 1: Site Location

1.3. SITE PROPOSALS

The development proposes the demolition of an existing residential property and the reconstruction of a new residential property with extension in its stead. The extension has already been granted planning permission (P/2018/0766). The development is, therefore, likely to increase the impermeable area on site. Development proposals can be seen below and in Appendix A: Development Proposals.

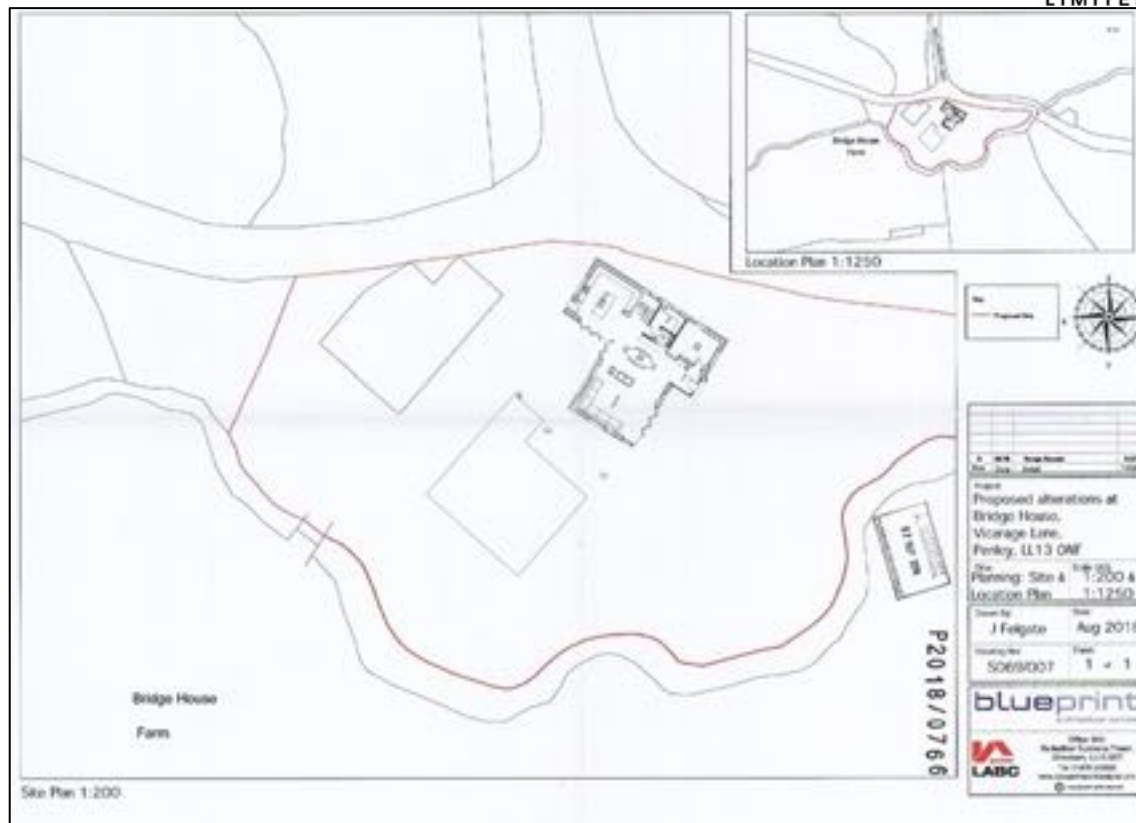


Figure 2: Development Proposal

2. ASSESSMENT OF TAN15

2.1. INTRODUCTION TO TAN15

Technical Advice Note 15 (TAN15) is a Welsh Government published document. This document provides guidance to local planning authorities to ensure the effective implementation of the planning policy. The policy seeks to direct development away from areas at highest risk, but where development is necessary, making it safe without increasing flood risk elsewhere. For these purposes:

- Direct new development away from those areas which are at high risk of flooding.
- Where development has to be considered in high-risk areas (zone C) only those developments which can be justified on the basis of the tests outlined in section 6 and section 7 are located within such areas

Flood risk (from river and sea) are categorised into one of the below:

2.2. FLOOD RISK CLASSIFICATIONS

Flood Zone	Description
Zone A	Little or no risk
Zone B	Known to have flooded in the past
Zone C	EA extreme flood outline (0.1%)
Zone C1	Areas of floodplain which are developed and served by significant infrastructure, including flood defence.
Zone C2	Areas of the floodplain without significant flood defence infrastructure

2.3. FLOOD RISK VULNERABILITY CLASSIFICATION

TAN15 categorises buildings by vulnerability. A summary of categories can be seen below:

Vulnerability Class	Infrastructure
Emergency Services	Hospitals, emergency depots, police stations etc
Highly vulnerable	All residential premises, public buildings, schools, libraries etc.
Less vulnerable	General industrial, commercial, retail, car parks etc

2.4. SUITABLE DEVELOPMENT MATRIX

The below table outlines the suitable development type for the flood zone classification assigned by the Environment Agency flood maps.

Flood risk vulnerability classification	Emergency Services	Highly Vulnerable	Less Vulnerable
Zone A			
Zone B			
Zone C1	Justification Test Required	Justification Test Required	Justification Test Required
Zone C2			Justification Test Required

Figure 3: Suitable Development Matrix

Key: Blue Development is appropriate; Red Development should not be permitted; Green Development is appropriate with a sufficient Justification Test.

3. TAN15 SITE ASSESSMENT

3.1. FLOOD ZONE CLASSIFICATION

As per Figure 4, the subject structure site is wholly within flood zone B, including its proposed extension. It should be noted that the development is for the main building on site (identified by arrow). The outbuildings are not a part of the development.

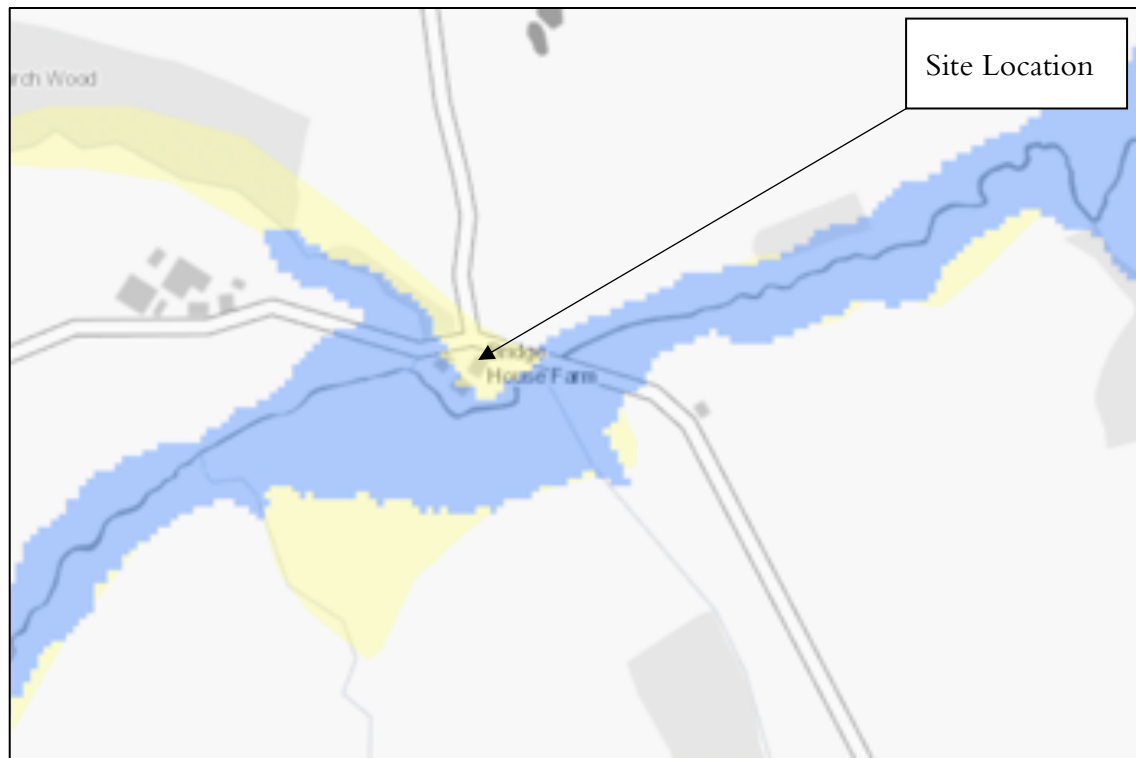


Figure 4: NR W Flood Zone

Where the blue shaded area notates flood zone C2, the green shaded area notated flood zone C1, yellow area notates flood zone B, and the non-shaded areas notates flood zone A.

3.2. LAND VULNERABILITY CLASSIFICATION

The existing site is used for residential purposes and is therefore designated as 'Highly vulnerable development' by TAN15. The proposed development will also be designated 'Highly vulnerable development'. The development therefore does not increase the vulnerability classification of the site.

3.3. SITE SUITABILITY (TAN15)

'Highly vulnerable development' is suitable for flood zone B as per Figure 3.

4. SITE FLOOD RISK

4.1. SURFACE WATER FLOODING

The NRW surface water flood map Figure 5, shows the site is not at risk from surface water flooding. It should be noted that areas with nearby the subject site are believed to be at risk of surface water flooding.

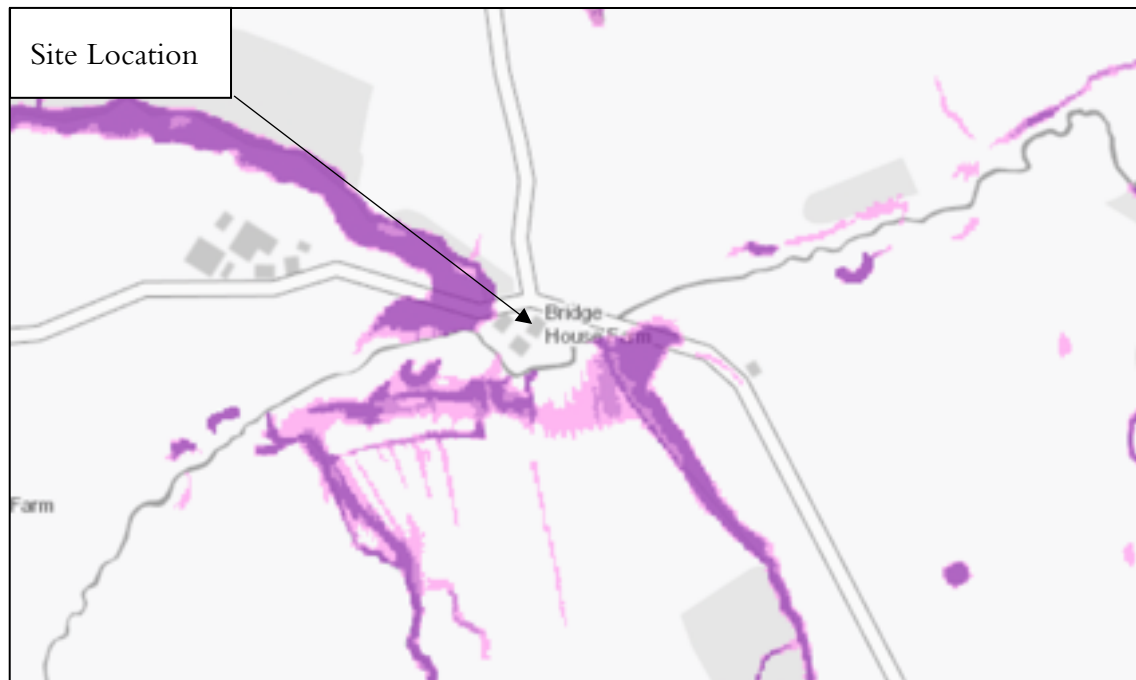


Figure 5: NRW Surface Water Flood Map

Where the dark purple shaded area denotes high risk of surface water flooding; the lighter purple notates medium risk, and the pink area denotes low risk.

4.2. TIDAL AND FLUVIAL FLOODING

The site is not at risk of flooding from tidal nor fluvial flooding. It should be noted that an area surrounding the subject site is at risk from fluvial sources.

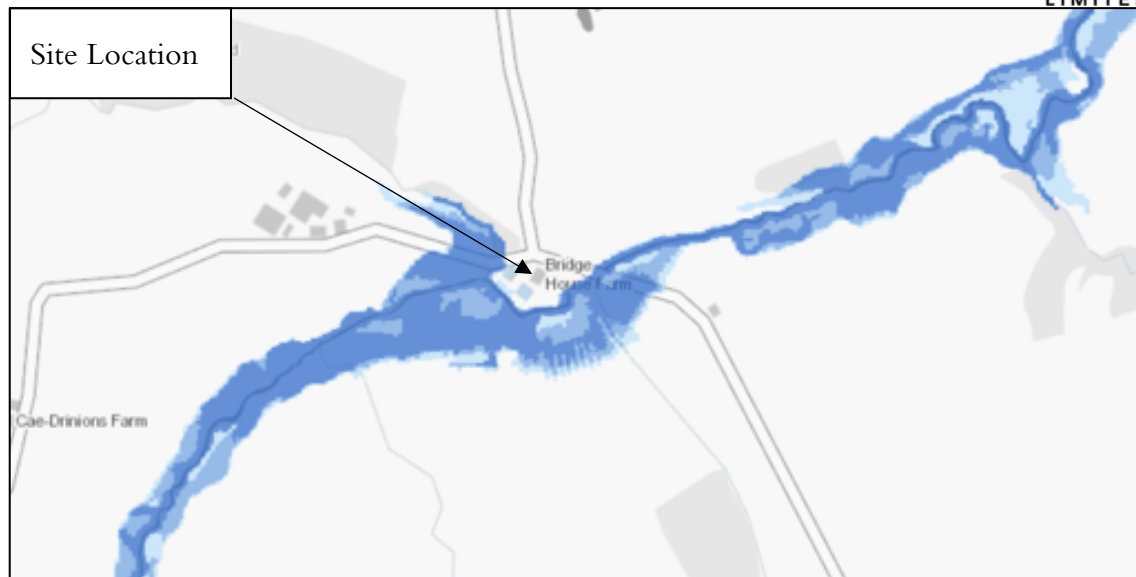


Figure 6: NRW Tidal and Fluvial Flood Map

Tidal: Where the dark green shaded area denotes high risk, the green area denotes medium risk, and the light green denotes low risk.

Fluvial: Where the dark blue shaded area denotes high risk, the blue area denotes medium risk, and the light blue denotes low risk.

4.3. GROUNDWATER FLOODING

British Geological Society (BGS) borehole reference SJ44SW7 nearby the subject site identifies no groundwater found within their 15m deep borehole. The borehole log suggests that the risk of groundwater flooding is negligible.

4.4. RESERVOIR FLOODING

The subject site is not believed to be at risk from reservoir sources.

4.5. CANAL AND ARTIFICIAL WATER FLOODING

The site is not believed to be at risk of flooding from artificial water sources.

4.1. HISTORIC FLOODING

A google search for 'Vicarage Lane flooding' yielded no definitive flood history.

5. FURTHER SITE ASSESSMENT

5.1. SITE ACCESS AND EGRESS ROUTES

Access to the site is proposed via Vicarage Road. The access road experiences some fluvial and surface water flood risk.

5.2. FLOOD COMPENSATION

The development is proposing an increase in impermeable area. Any development proposals should have suitable SuDS design incorporating features to compensate for water pollution generated by the proposed development.

5.3. FLOOD WARNING AREAS

The below Figure 7, highlights the areas that are considered to benefit from Natural resources Wales flood alerts. The site is not within the flood alert area.



Figure 7: NRW Flood Warning Areas

Where the yellow shaded area denoted flood alert areas and red shaded areas notates flood warning areas.

5.4. AWARENESS OF FLOOD RISK

The developer should be aware that the site is not immune from flooding. It is recommended that future occupiers take the opportunity to develop emergency and non-emergency plans.

5.5. JUSTIFICATION TEST

Not applicable, see Figure 3: Suitable Development Matrix

6. FINDINGS AND RECOMMENDATIONS

6.1. FINDINGS

The development plans to demolish an existing residential development and reconstruct a new residential development on the existing footings. TAN15 categorises residential dwellings as 'highly vulnerable development'. Highly vulnerable developments are suitable for flood zone B. The site is not subject to subject to nor surface water flooding however, some of the surrounding area is at risk of flooding from fluvial and pluvial sources. The risk of flooding is not negligible but should be found acceptable for the development vulnerability classification with the inclusion of a sequential and exception test, as per TAN15.

6.2. RECOMMENDATIONS

This report recommends the following be considered to lower the risk and/or consequences that flooding may cause to the proposed development:

- The development should be subject to SuDS treatment and attenuation with a controlled discharge
- Borehole logs suggest infiltration may be viable

List of Appendices

Appendix A: Development Proposals

Appendix B: Borehole Log

List of Appendices

Appendix A: Development Proposals



Project	
Proposed alterations at Bridge House, Vicarage Lane, Penkry, IL13 0MF	
Planning Site & Location Plan	1:250 & 1:1250
Drawn by	J. Fildes
Check by	Aug 2018
Drawing No.	5069/007
Scale	1:1
blueprint	
LABO	

P2018/0766

Site Plan 1:200

[illegible]

P2018/0766

[illegible]

Appendix B: Borehole Log



SJ 44 SW 7

4873 4387

Adre-felin

Surface level +69.4 m (+228 ft)
 Water not struck
 November 1981

Waste 19.2 m*

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil	0.2	0.2
Glacial Silt and Clay	Clay, silty, some pebbles, moderate brown, hard, weathered to 0.8 m	1.7	2.0
	Clay, silty, few pebbles, finely laminated, moderate brown, hard becoming firm with depth, some shell fragments	10.0	12.0
Till	Clay, silty, pebbly, moderate brown, hard	7.0	19.0
	Clay, silty, sandy, moderate brown, soft	0.2*	19.2

SJ 44 SW 8

4159 4490

Emeral Lodge

Surface level +33.8 m (+111 ft)
 Water not struck
 November 1981

Waste 14.7 m
 Bedrock 0.3 m*

LOG

Geological classification	Lithology	Thickness m	Depth m
	Soil	0.2	0.2
Glacial Silt and Clay	Clay, silty, pebbly, mottled moderate yellowish brown and light brown with streaks of medium bluish grey, sporadically laminated, hard	1.3	1.5
	Clay, silty, stoneless, moderate brown, laminated, rare shell fragments, very hard to 7.0 m, becoming firm below	13.2	14.7
Sherwood Sandstone Group	Sandstone, moderate yellow, very hard but friable	0.3*	15.0