



FD187: Flood Consequence Assessment for a Change of Use of the Cabin at The Old Forge, The Old Smithy, Main Road, Portskewett, Monmouthshire, NP26 5SG

Contract Ref: FD187

On behalf of Kim Sumner

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Quality Assurance Record

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1	28/02/2024	A. Osborne	C. Townsend	C. Townsend	1 st Issue

Limitation of Liability and Use

The work described in this report was undertaken for the party or parties stated; for the purpose or purposes stated; to the time and budget constraints stated. No liability is accepted for use by other parties or for other purposes, or unreasonably beyond the terms and parameters of its commission and its delivery to normal professional standards.

1. INTRODUCTION

1.1 Purpose of this Report

Townsend Water Engineering Ltd. has been appointed by Kim Sumner for a Flood Consequence Assessment (FCA) for a single dwelling for a change of use at the Cabin at The Old Forge, The Old Smithy, Main Road, Portskewett, Monmouthshire, NP26 5SG. This report has been prepared in support of the planning permission for a change of use for the aforementioned development. The cabin is currently used by the owner for musical gatherings and family stays, it is proposed to change the use to allow for Air B n B lettings. It is proposed that the development will only be used 50% of the time.

The report is based on the available flood risk information for the site detailed in Section 1.2 and prepared in accordance with the planning policy requirements set out in Section 1.3. The scope of the FCA is consistent with the 'Technical Advice Note 15: Development, Flooding & Coastal Erosion'.

1.2 Sources of Information and Consultation

This Report has been informed by:

- Site Plan and Topographic plan delivered by the client;
- [Consultancy Report Template \(monmouthshire.gov.uk\)](https://www.monmouthshire.gov.uk); and
- The *NRW* online flood maps;

1.3 Policy Context

This report has been prepared in accordance with the relevant national, regional and local planning policy and statutory guidance as follows:

- National policy contained within the *Technical Advice Note 15 (TAN15)* dated July 2021, issued by *Welsh Assembly*.

1.4 Structure of this Report

The Report has been prepared based on the following structure:

- Section 2 refers to spatial planning considerations by reference to the proposed land use, flood zoning and *TAN15* vulnerability;
- Section 3 presents the assessment of existing flood risk at the site;
- Section 4 presents the proposed development and findings of flooding; and
- Section 5 provides a summary of the assessments.

Additional Appendices are provided that deal with the following:

- Appendix A Topographical Survey; and
- Appendix B: Flood Model.

2. SPATIAL PLANNING CONSIDERATION

2.1 Location and Background

The location of the proposed development site is shown in

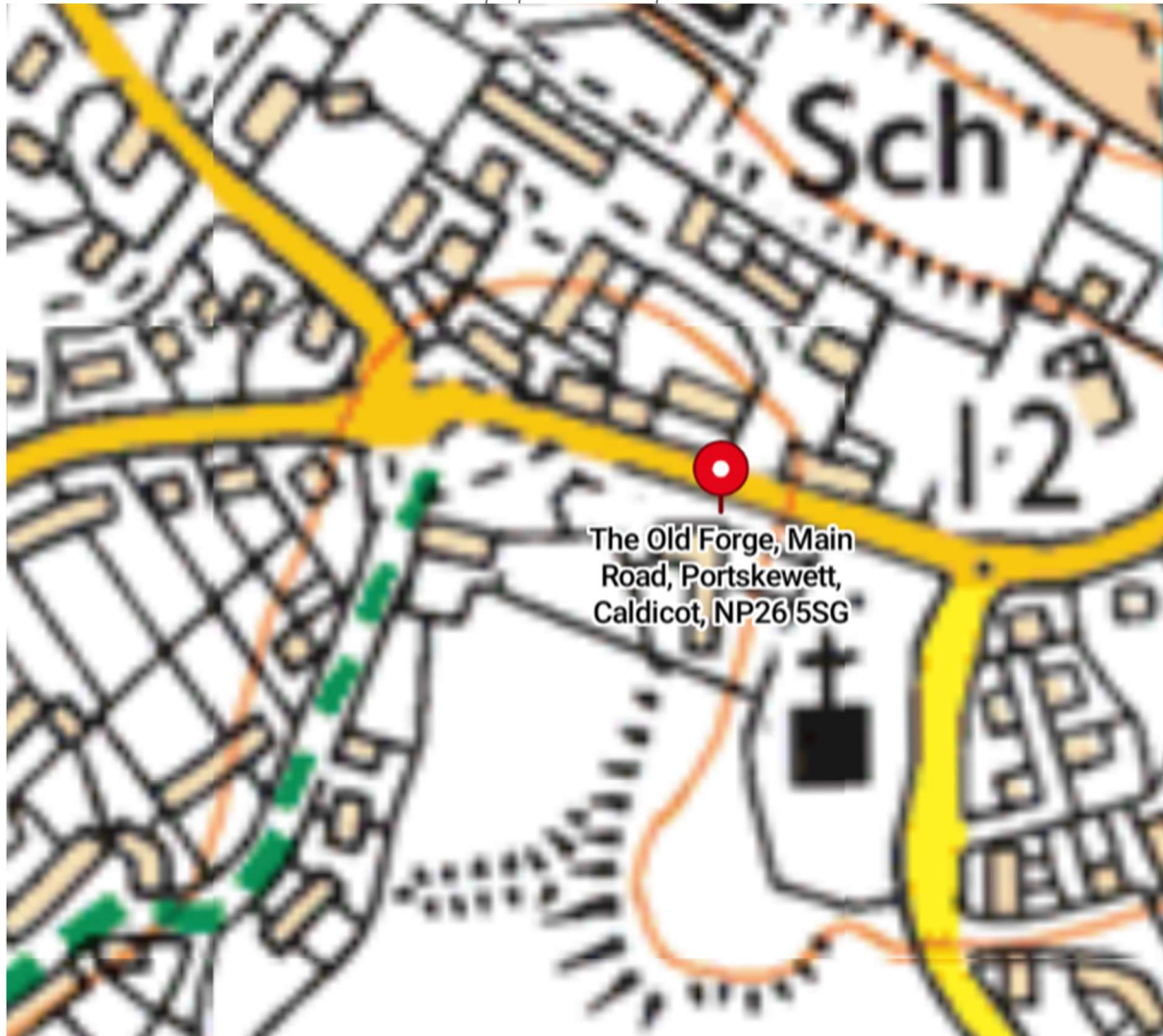


Figure 1: Site location (Source: Bing Ordnance Survey Map and Figure 2: Aerial View of the Site (Source: Google Maps), with location details found in Table 1. The site is located at the Cabin at The Old Forge, The Old Smithy, Main Road, Portskewett, Monmouthshire, NP26 5SG (Grid Ref: 349826 ,188188). (Table 1: Site Details).

The planning application is for a change of use for a single dwelling. The entire development site is approximately 0.03ha. The existing site is a brownfield site. The site is a cabin. There is an existing access road on the North-East border. There is no increase in size of the building. The proposed cabin will be use only 50% of the time.

To the North of the site is *Main Road*, followed by a residential area. To the East is a dwelling (*The Old Forge*) and then a cemetery. To the South of the site is *Harolds Park*. To the West of the site is a grass area followed by *Manor Way*, further to the West is a residential area.

Please see

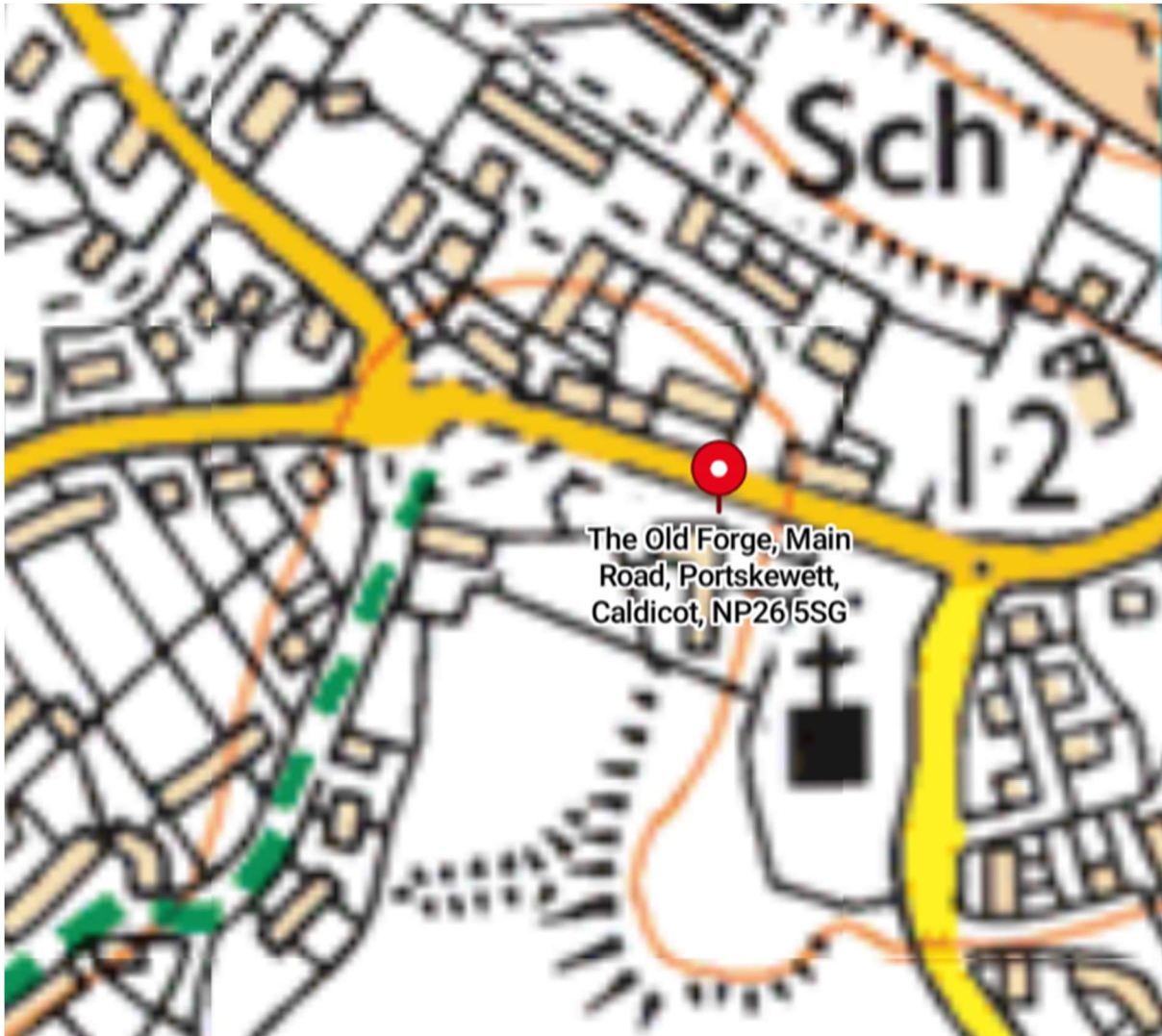


Figure 1 and Figure 2 for the location of the site.

Table 1: Site Details

Reference	Value
OS X (Eastings)	349826
OS Y (Northings)	188188
Nearest Post Code	NP26 5SG
Nat. Grid	ST 49826 88188

Grid reference details taken from the site <https://www.streetmap.co.uk/>

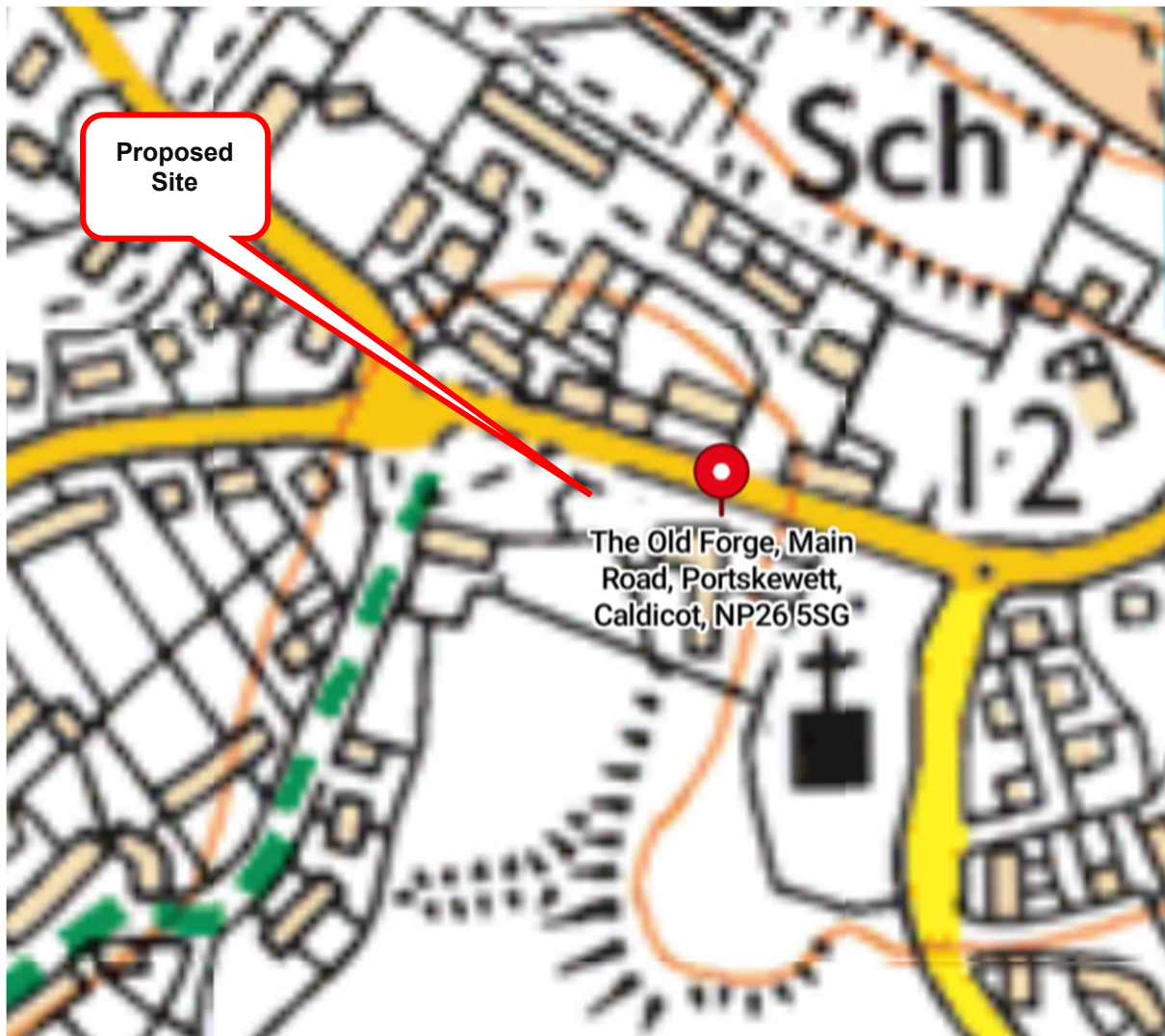


Figure 1: Site location (Source: Bing Ordnance Survey Map)

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Figure 2: Aerial View of the Site (Source: Google Maps)

2.2 Topography

According to the topographical survey, the site slopes gently from the North-East to the South-West. Site levels range between 9.05mAOD in the North-East to 8.59mAOD in the South-West. Please see the Topographical Survey below and in Appendix A.

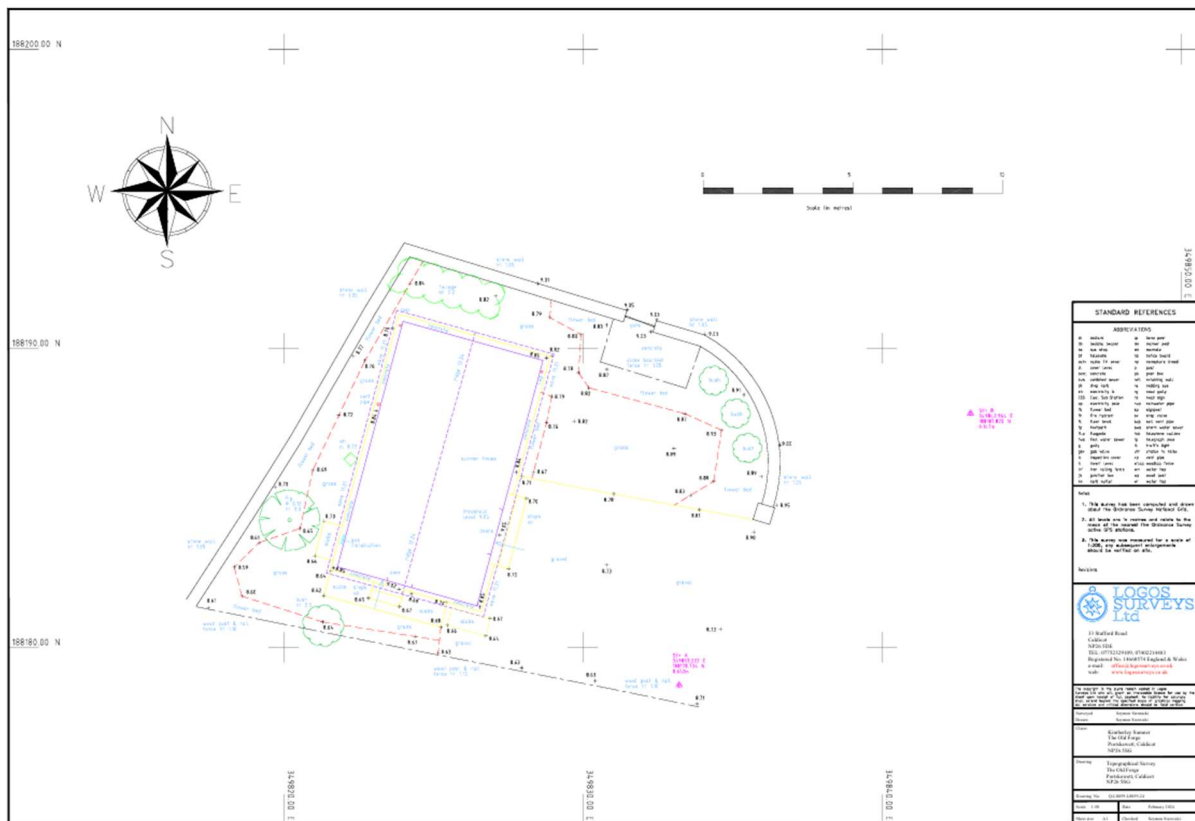


Figure 3: Topographical Survey

2.3 Flood Zone

The existing site is within Flood Zone C1, please see Figure 4. Flood Zone C1 is an area of the floodplain which are developed and served by significant infrastructure, including flood defences. This suggests the site is at high risk of fluvial flooding, but is defended. In normal circumstances, this site does not flood if the flood defences hold. Furthermore, there is a railway embankment between the site and the estuary.



Figure 4: Flood Risk Maps

Townsend Water Engineering (TWE) has compared the Environment Agency flood model levels to the sites topographical levels. The 1 in 100 year + climate change flood level at the site is 10.233m AOD, while the topographical level is between 9.05m AOD in the North-East to 8.59m AOD in the South-West. This means that the flood level is between 1.64m AOD and 1.18m AOD higher than the ground levels at the site.

However, this is unlikely, as the road to the North is of a similar level and does not flood. This suggests that the model may be overly conservative. The site is served by flood defences, also, to the South of the site, there is a large railway embankment. This would serve as a flood defence in the event of tidal or fluvial flooding and only flood in a flood defence breach, which is a rare occurrence.

Please see the map below indicating this.

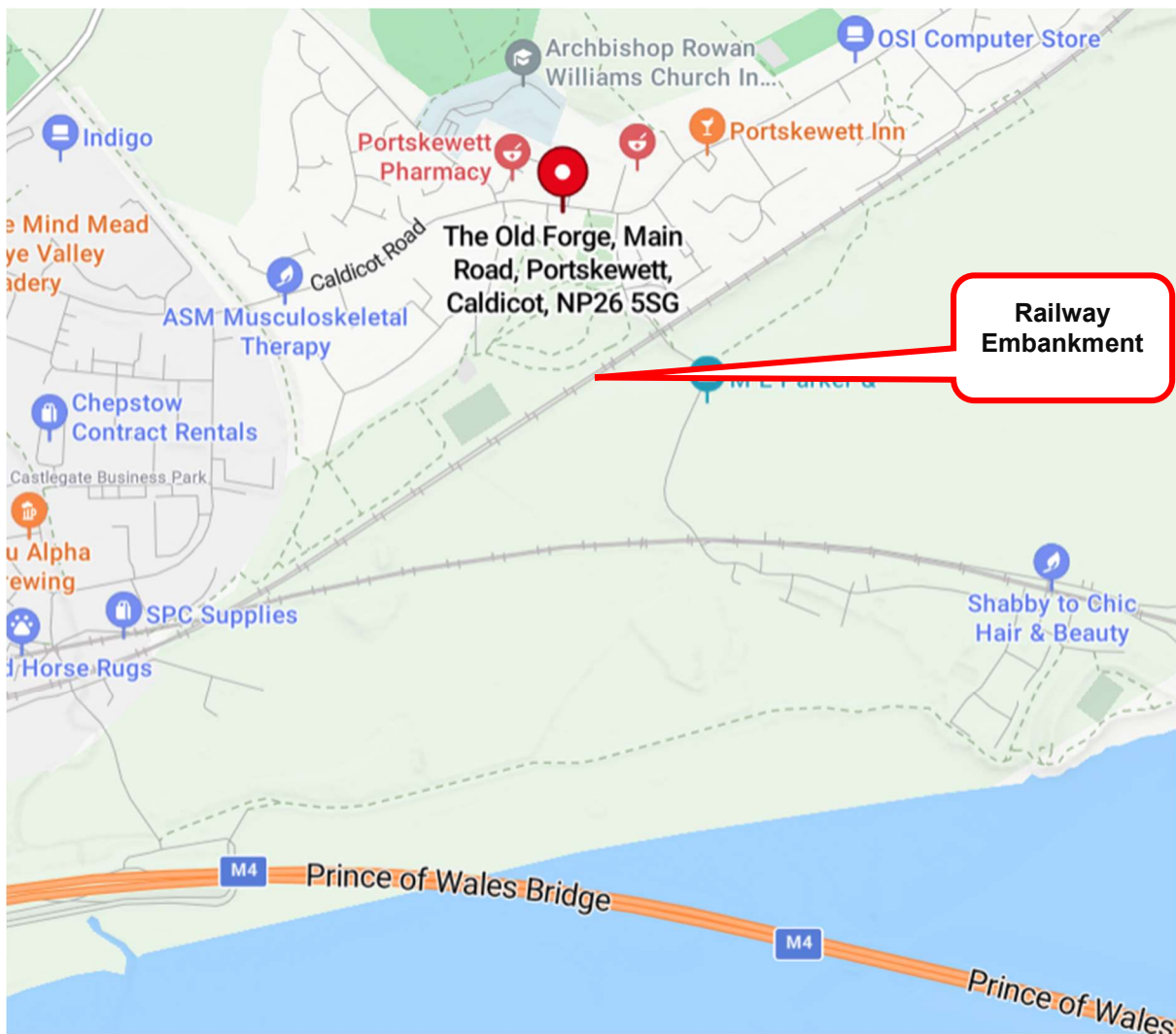


Figure 5: Map Showing Railway Embankment

2.4 NPPF Vulnerability

The development will be classed as 'Highly Vulnerable' under the *TAN15* vulnerability classification (Table 2). As noted in Section 2.3, the dwelling is within Flood Zone C1.

Table 2: Flood Risk Vulnerability Classification (Source: NPPF Technical Guide)

Development category	Types
Highly vulnerable development	<p>All residential premises (including hotels, Gypsy and Traveller sites and caravan parks and camping sites).</p> <p>Schools and childcare establishments, colleges and universities.</p> <p>Hospitals and GP surgeries.</p> <p>Especially vulnerable industrial development (e.g. power generating and distribution elements of power stations, transformers, chemical plants, incinerators), and waste disposal sites.</p> <p>Emergency services, including: ambulance stations, fire stations, police stations, command centres, emergency depots.</p> <p>Buildings used to provide emergency shelter in time of flood.</p>

As the dwelling is within Flood Zone C1 and the house is situated outside of the 0.1% AEP return period surface water envelope, the proposed development passes the justification test. Also, it is a change of use from a musical gatherings and sleeping quarters for visiting family members, converting to an Air BnB. There is an argument that the risk will go down, as the change of use occupancy is less than the current occupancy; it will only be used as an Air BnB for 50% of the year.

2.5 Climate Change Allowances for Peak Rainfall Intensity

The *NRW* require a consideration of the impacts of climate change in Flood Consequence Assessments (FCA). In September 2022, the *NRW* updated the climate change allowances required in Flood Consequences Assessments (*NRW, 2022*); this advice updates previous climate change allowances.

Peak river flow allowances Table 1 indicates the anticipated increase in peak river flows for the 3 river basin districts that cover Wales. The proposed site is within the Severn Catchment. The allowances present the current national representation of how climate change could impact peak flow. This data will be updated once revised data is made available through UKCP18. The allowances are based on percentage increases of change from a 1961-1990 baseline and are provided for the: • 10th percentile (lower end estimate) • 50th percentile (change factor/central estimate) • 90th percentile (upper end estimate). September 2021 3 Table 1: peak river flow allowances by river basin district (using 1961 to 1990 baseline 1) Total potential change anticipated by the 2020s Total potential change anticipated by the 2050s Total potential change anticipated by the 2080s Severn Upper end estimate 25% 40% 70% Change factor /central estimate 10% 20% 25% Lower end estimate 0% 5% 5% West Wales Upper end estimate 25% 40% 75% Change factor /central estimate 15% 25% 30% Lower end estimate 5% 10% 15% Dee Upper end estimate 20% 30% 45% Change factor /central estimate 10% 15% 20% Lower end estimate 5% 5% 5% The projected peak river flow change is a range, with the highest estimate equally likely to occur as the lowest estimate. For this reason, it is recommended that the central estimate, or change factor, for the 2080s for the relevant river basin district is used to assess the potential impact of climate change as part of a flood consequence assessment (FCA) and to inform design levels. If a figure other than the central estimate is used, applicants will be expected to provide full justification within the FCA.

The climate change used in this area is 25%.

Table 1: peak river flow allowances by river basin district (using 1961 to 1990 baseline¹)

	Total potential change anticipated by the 2020s	Total potential change anticipated by the 2050s	Total potential change anticipated by the 2080s
Severn			
Upper end estimate	25%	40%	70%
Change factor /central estimate	10%	20%	25%
Lower end estimate	0%	5%	5%
West Wales			
Upper end estimate	25%	40%	75%
Change factor /central estimate	15%	25%	30%
Lower end estimate	5%	10%	15%
Dee			
Upper end estimate	20%	30%	45%
Change factor /central estimate	10%	15%	20%
Lower end estimate	5%	5%	5%

Table 3: Flood Consequence Assessment of Table 1: Peak River Flow Allowances by River Basin District (using 1961 to 1990 baseline)

3. FLOOD HAZARD FOR EXISTING SITE

3.1 Source of Flood Risk

Flood sources and their possibilities described below.

3.1.1 Flood Risk from Fluvial Sources

The proposed dwelling is situated within Flood Zone C1 (an area of high flood risk, but defended) and therefore, is at high risk of flooding, but is served by flood defences and is protected by a large railway embankment that resides between the site and the sea.

3.1.1.1 Access and Egress Outside of the Redline Boundary

The roads the North-East and North-West of the site are flood free in the 1 in 100 year event plus climate change.

Therefore, if the site floods, the residents can wait out the flood, or they can walk or drive to *Crick Road* in the North-West or *Main Road* to the North-East, which are inside Flood Zone A. As the flood risk is from tidal flooding, there would be plenty of time to evacuate the area.

3.1.2 Surface Water

The *NRW* surface flood extents have been obtained from the *NRW* open dataset. Figure 6 shows that the site is at very low risk of flooding from surface water. Therefore, flood risk from surface water is believed to be low at the site. Furthermore, the access track is outside of the flood area. Therefore, in a surface water flood event, the site has safe access and egress.

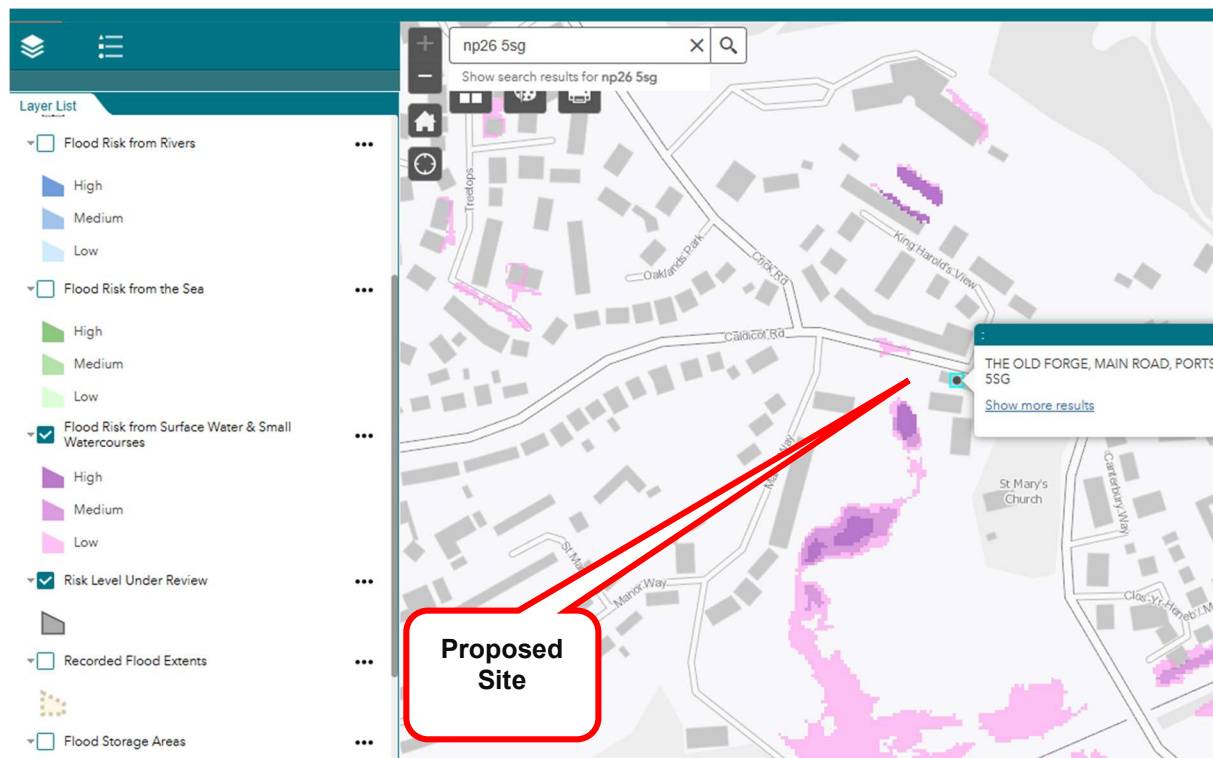


Figure 6: Extent of Flooding from Surface Water

3.1.3 Flood Risk from Reservoir /Canals / Other Artificial Sources

There is no flood risk from canals or other artificial sources, as there are no canals or artificial sources within the vicinity of the site.

3.1.4 Flood Risk from Groundwater

According to the *Monmouthshire County Council 'FLOOD RISK REGULATIONS 2009 PRELIMINARY FLOOD RISK ASSESSMENT REPORT'*, there is no data indicating this site floods from groundwater. Groundwater flood risk is considered to be low in Monmouthshire. Please see Figure 7 **Error! Not a valid bookmark self-reference.**

Groundwater

5.3 It is understood that there is no local information on future groundwater flooding for Monmouthshire. The risk of groundwater flooding is considered to be low, and it is not considered to be a significant issue within the catchment.

Figure 7: Monmouthshire PFRA Extract

3.1.5 Flood Risk from Sewers

There is no known public history of sewer flooding in the area, therefore, there is minimal risk of flooding from sewers in this area.

4. ASSESSMENT OF FLOOD RISK FOR PROPOSED DEVELOPMENT

4.1 Development Proposals

It is proposed to change the use of the cabin, a single dwelling shown on the indicative masterplan Figure 8. The cabin is currently used for 'music practice and playing in small groups with friends (string quartets etc.) and also occasional weekend overnight stays at weekends for family and friends', it is proposed to change the use of the cabin to allow the owner to let it out as an Air B n B for 50% of the year.

The area of the site is 0.03ha. The full layout is within Appendix B.

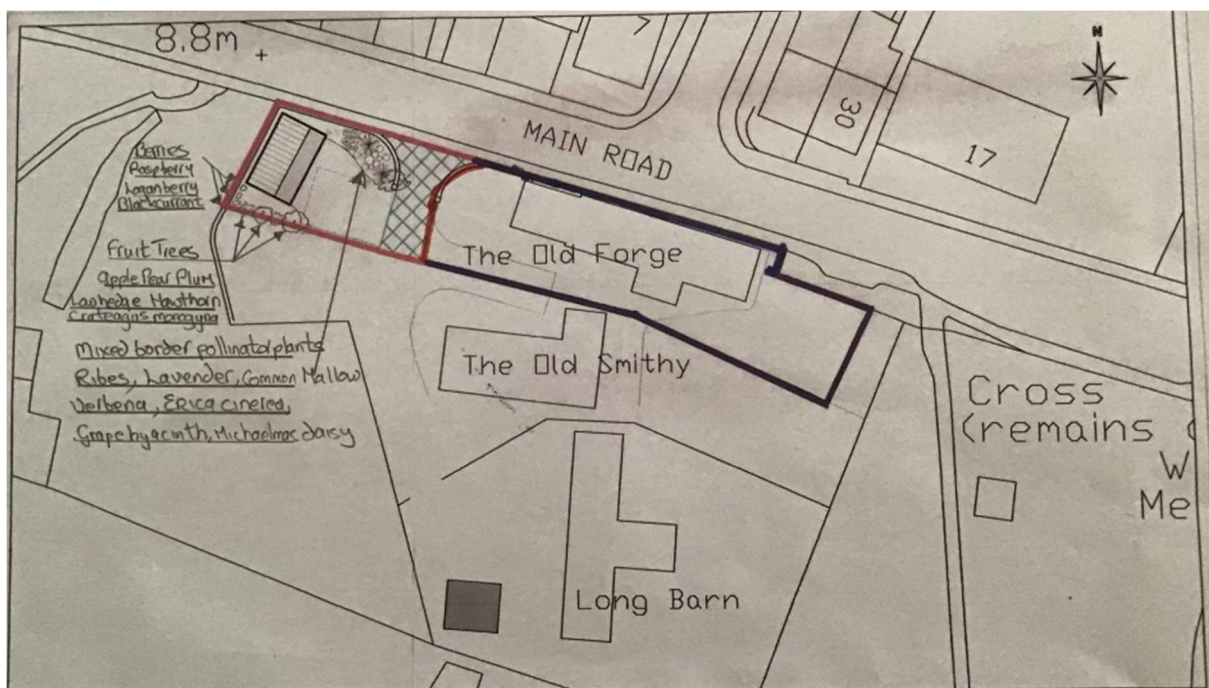


Figure 8: Proposed Site (Source: Client)

4.2 Fluvial Flood Management

The dwelling is within Flood Zone C1. It is believed the dwelling is at high risk of fluvial flooding, but defended. Furthermore, the site is protected by a large railway embankment that resides between the site and the sea.

No compensatory storage is required because the building is already there.

Furthermore, as the proposed use is for an Air B & B that will only be let for 50% of the year, the owner states that she would not let the cabin out if there was a flood forecast.

The building is already built and is used for sleeping quarters. The change of use is purely changing from residential to a holiday let (Air BnB). There is no material difference between people sleeping in it

from the owners family to Air BnB users sleeping in it. The site will always be manned, so in times of flooding, there is help.

As the building is an existing building, the finished floor levels cannot be raised.

A discussion was undertaken between Charles Townsend (author of this report) and Rachel Thomas (Natural Resources for Wales) on 28th February 2024. Rachel Thomas indicated that, as the building is already residential, there is no increase in the risk of flooding. She suggested that the FCA should make potential residents more aware of the flooding. Therefore:

- It is recommended that the owner of the site will join the flood warning scheme undertaken by Natural Resources for Wales; and
- An evacuation plan will be undertaken. So in the event of flooding, the cabin can be evacuated. Please can this be conditioned?

By joining the flood warning scheme and the evacuation plan, the site has decreased its risk of flooding.

4.2.1.1 Access and Egress outside of the Redline Boundary

The roads the North-East and North-West of the site are flood free in the 1 in 100 year event plus climate change.

Therefore, if the site floods, the residents can wait out the flood, or they can walk or drive to *Crick Road* in the North-West or *Main Road* to the North-East, which are inside Flood Zone A. As the flood risk is from tidal flooding, there would be plenty of time to evacuate the area.

4.3 Surface water Flooding

According to the Surface Water Flood maps, the risk of flooding from surface water is very low at the site. Therefore, the risk of flooding from surface water to the site is believed to be low.

4.4 Groundwater Flooding

As previously stated, there is no known groundwater flooding in the area. Therefore, it is believed that the groundwater is flood risk is low.

4.5 Infrastructure Flooding

There is no existing infrastructure on the site, therefore, the risk of flooding from infrastructure to the site is believed to be low.

5. SUMMARY & CONCLUSIONS

A summary of the main conclusions for the FCA is presented below:

- Development proposals are for a change of use of a cabin at The Old Forge, The Old Smithy, Main Road, Portskewett, Monmouthshire, NP26 5SG;
- The development site is approximately 0.03ha;
- The site is within Flood Zone C1. An area at high risk of fluvial flooding, but defended. However, there is a large railway embankment between the site and the sea, that would defend the site against flooding;
- The proposed use is for an Air B & B, to be used 50% of the year, and only let out if there is no flood risk forecast;
- Furthermore, as the proposed use is for an Air B & B that will only be let for 50% of the year, the owner states she would not let the cabin out if there was a flood forecast;
- The building is already built and is used for sleeping quarters. The change of use is purely changing from a residential to a holiday let. There is no material difference between people sleeping in it from the family or strangers. The site will always be manned, so in times of flooding, there is help;
- As the building is an existing building, the finished floor levels cannot be raised;
- A discussion was undertaken between Charles Townsend (author of this report) and Rachel Thomas (Natural Resources for Wales) on 28th February 2024. Rachel Thomas indicated that as the building is already residential, there is no increase in risk of flooding, she suggested that the FCA should make the potential residents more aware of the flooding. Therefore:
 - It is recommended that owner of the site will join the flood warning scheme undertaken by Natural Resources for Wales.
 - An evacuation plan will be undertaken. So in the event of flooding, the cabin can be evacuated. Please can this be conditioned?
- By joining the flood warning scheme and the evacuation plan the site has decreased its risk of flooding;
- The proposed development has dry access and egress inside the site;
- There is no known history of groundwater flooding at the site; and
- The site is at low risk of surface water flooding.

Appendix A: Topographical Survey

Appendix B: Flood Model

