

Flood Risk Assessment

For a Change of Use and Conversion to Flats
96 Gnoll Park Road, Neath, SA11 3DD

FRA-100

Date
25.06.2022

Revision
-



Contents	page
1.0 External Face of Wall	3
2.0 Insulation to Cavity Walls	4
3.0 Internal Face of External Walls	4
4.0 Internal Walls	4
5.0 Concrete Floors	4
6.0 Fittings and Building Services	5
7.0 Bathrooms	5
8.0 Doors & Skirting	5
9.0 Windows	5
10.0 Floor & Wall Coverings	5
11.0 Services	6
11.1 Electrical Supplies & Telephone Services	
11.2 Gas Supplies	
11.3 Boilers	
12.0 References	7
13.0 Appendix 1: Flood Maps	8

Further to ascertaining measures to combat the possibility of flooding information has been ascertained from the document the *Technical Advice Notes (TAN) 15: Development and Flood Risk*. A SuDs Approval Body (SAB) application was also submitted, reference number: SP2021/0021.

This document should be read in conjunction with accompanying planning documentation:

This document should be read in conjunction with the submitted planning application forms and planning documentation

- A1-001: Site & Location Plans
- A1-100: Existing Floor Plans
- A1-101: Existing Elevations
- A1-102: Existing Landscape Plan
- A1-200: Proposed Floor Plans
- A1-201: Proposed Floor Plans Main Building
- A1-202: Proposed Plans Rear Building
- A1-203: Proposed Main + Rear Building Elevations
- A1-204: Proposed Landscape Plan & Proposed Site Section
- A1-205: Comparison Site Plans
- DAS-100: Design and Access Statement
- PS-100: Planning Statement
- ES-100: Environmental Statement

The likelihood of flooding in on this property is in an area has a low probability of flooding, as prescribed by HM Land Registry and Natural Resources Wales Flood Map, see *Appendix I: Flood Maps*.

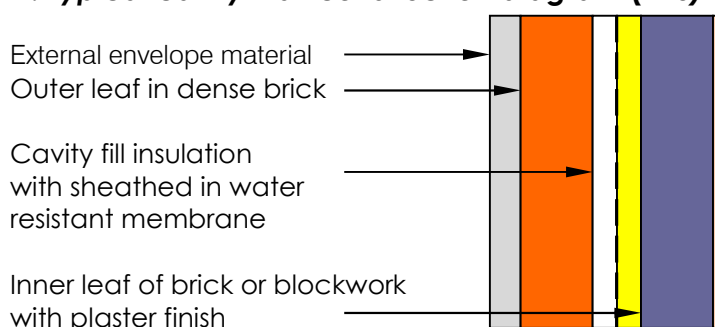
However, the following items are solutions that minimise the effects of local flooding in damaging existing property and new additions to existing property. It should also be noted that all steps in the construction of the wall specialist advice would be incorporated to ensure that the most appropriate system is chosen.

1.0. External Face of Wall

The construction would use dense brick, which would be similar in colour to the existing context (dense brick is considered by far a greater flood resistance). The outside face of the most external walls would be constructed of brickwork, which would be rendered in water-resistant paints and/or coatings (tanking) and or applied materials. This would be an acceptable preventative measure from floodwater soaking into the external face of the wall, thus allowing the wall to dry out more quickly. Stainless steel ties would be used in the wall construction.

Coatings would be applied to 500mm above the maximum expected level of flooding. Any measures to improve water resistance will be compatible with the existing wall materials and will allow adequate water vapour transmission to avoid trapping moisture within the wall.

A. Typical cavity wall construction diagram (NTS)



2.0. Insulation to Cavity Walls

Low absorption boards or semi-rigid self-draining mineral wool batts to 500mm above the expected flood level would be considered. This type of insulation incorporating self-draining mineral fibre batts, boards or rigid plastic insulation would assist in preventing water seepage.

3.0. Internal Face of External Walls

The method to improve water resistance of the internal cavity wall surface (assuming flood water will enter the dwelling) would be to have an internal finish of plaster applied directly to the dense brick/blockwork.

If immersion in floodwater were to occur lime-based plasters over water resistant render should dry out quickly and would not deteriorate even if subjected to repeated exposure to floodwater. The water-resistant render beneath the plaster reduces water penetration into the underlying masonry, allowing the wall to dry out more quickly without the need to remove the plaster finish-this also proves valuable in repair costs.

Ceramic tiles in the kitchen and bathroom areas would also provide a water-resistant surface and can reduce the volume of floodwater penetrating through the masonry from the inside face of the wall. Tiled finishes would not need to be replaced following exposure to flooding provided a water-resistant grout, suitable for the wall surface used in accordance with the manufacturer's instructions. Tiles should be laid over a sand/cement render to provide a flat wall surface. For flood protection purposes, tiles would not be placed over gypsum-based plaster.

4.0. Internal Walls

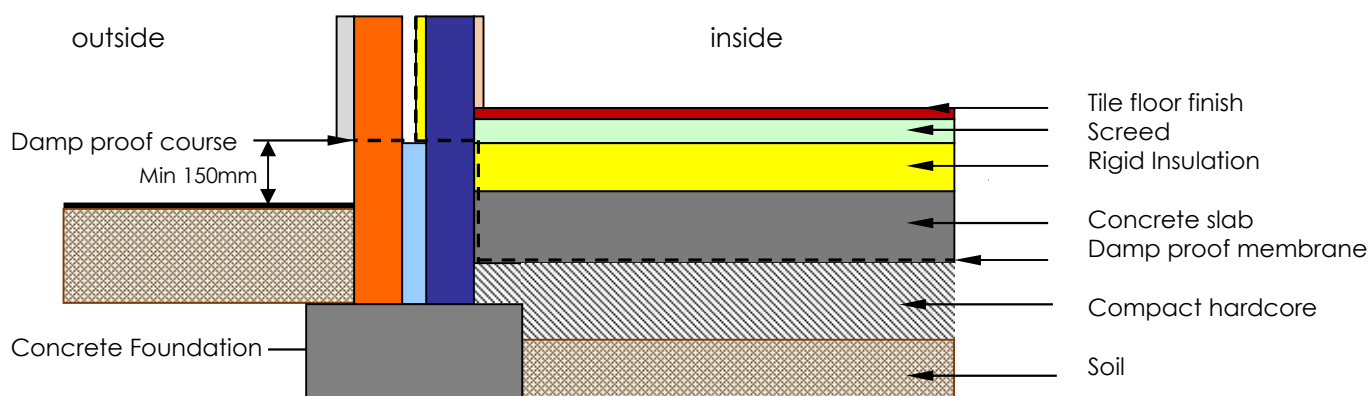
The principals set out in 3.0 Internal Face of External Walls can improve the flood resistance of internal masonry walls.

5.0. Concrete Floors

The floor would be solid concrete floors with damp proof membranes are generally considered as the most flood resistant floor types as they reduce the rate of water seepage into the dwelling and are easier to clean and restore compared to suspended floors.

Damp proof membranes (dpm) and damp-proof courses (dpc) would be installed connecting the walls to floors, so floodwater ingress is less likely to occur. The floor would have dpm between the surface screed and the concrete slab, this will allow the concrete slab to dry out more quickly than floors with dpm below the concrete slab.

B. Concrete floor build-up diagram (NTS)



6.0 Fittings and Building Services

As most kitchen storage units are formed of chipboard and MDF with plastic coatings, such units will almost need to be raised by 100mm to 150mm above the finished floor level by means of plastic legs to prevent damage in the event of shallow flooding.

Water resistant PVCu or similar type kitchen units are readily available in the UK, which can be cleaned and re-used following exposure to floodwater.

Separate hobs and built-in ovens would be installed as these may not be affected by floodwater and are preferable to stand alone cookers.

A qualified services engineer will inspect all gas and electrical appliances that may come in contact with floodwater before they are re-used.

Fridge's, washing and drying machines are usually stand-alone, and these will be mounted approximately 100mm to 150mm above the finished floor level.

7.0 Bathrooms

The bathroom will not have any chipboard or MDF fittings and furnishings, as these are prone to dampness causing warping and discolouration. High quality bath fittings and fixtures would be considered during their installation.

8.0 Doors & Skirting

Solid hardwood doors may be dry but can be prone to warping or discolouration of the surface finish and could lead to the doors to be replaced. If sufficient warning is provided the doors may be removed in advance of water entering the property.

Fire doors will be constructed of layers of fire-resistant material but could become damaged when exposed to floodwater and would be replaced along with the doorframe seals.

Solid timber skirting boards would not normally be affected by floodwater and the faces would be appropriately sealed with an oil-based paint and/or stain before being fixed to the wall.

9.0 Windows

Timber window frames would be installed as they stay in keeping with the context and neighbouring properties. However, timber frames may distort following exposure to floodwater and would need to be re-fitted.

Appropriate staining and timber sealants would be used to minimise distortion and discolouration.

10.0 Floor & Wall Coverings

Floor coverings would be kept to two types:

a. Sheathed in stained and lacquered timber flooring fixed to a concrete and screed substructure.

b. The kitchens and bathrooms would be sheathed in ceramic floor tiles fixed onto a concrete and screed substructure.

Walls and vertical surface coverings would almost always need to be replaced; hence the scheme would avoid using wallpaper.

The use of low permeability lime-based paints would be used as this allows the walls to dry out more quickly following flooding.

11.0 Services

11.1 Electrical Supplies & Telephone Services

All electrical supplies would be turned off prior to the event of floodwaters arriving from the mains fuse box and prior to being re-connected it would be checked by a qualified electrician.

Plastic cable conduits would be directly chased into the walls and socket heights would be located as the building regulations consider appropriate usually 150mm above finished floor level.

Where possible incoming telephone lines and internal cable boxes will be raised above the expected flood levels.

11.2 Gas Supplies

All gas supplies would be turned off prior to the event of floodwaters arriving from the mains gas meter and prior to being re-connected all gas appliances and pipes would be checked by a qualified registered gas inspector.

11.3 Boilers

The gas pipes would be connected to the existing boiler system, which is located above at ground floor level and approximately 1000mm above finished floor level.

New pipes and heating systems will be accessible to allow pipes to be maintained and cleaned down following flooding.

12.0 References

Information within the document refers to the document provided by:

- Technical Advice Note 15: Development and Flood Risk
- Natural Resources Wales, Map Perygl Llifogydd / Flood Risk Map
- https://maps.cyfoethnaturiolcymru.gov.uk/Html5Viewer/Index.html?configBase=https://maps.cyfoethnaturiolcymru.gov.uk/Geocortex/Essentials/REST/sites/Flood_Risk/viewers/Flood_Risk/virtualdirectory/Resources/Config/Default&layerTheme=0

13.0 Appendix 1: Flood Maps

The following information is downloaded from the Natural Resources Wales and HM Land Registry maps. Both confirm the proposal site is low risk of flooding.

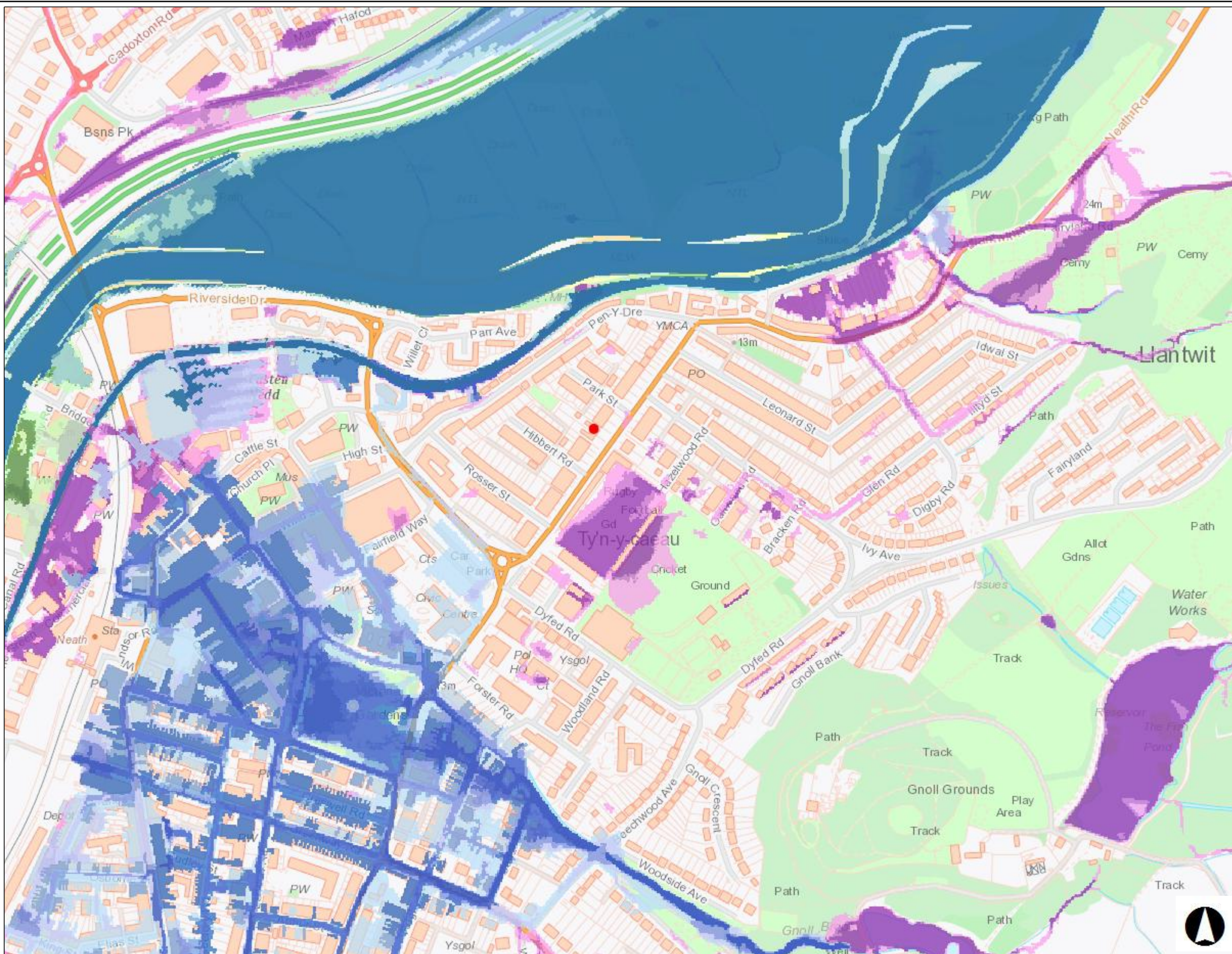
Map Perygl Llifogydd / Flood Risk Map -

Allwedd / Map Key

- Risk Level Under Review
- Flood Risk from Rivers - Extent**
 - High
 - Medium
 - Low
- Flood Risk from the Sea**
 - High
 - Medium
 - Low
- Flood Risk from Surface Water & Small Watercourses - Extent**
 - High
 - Medium
 - Low

Graddfa / Scale at A3 1: 5,000

Dyddiad / Date
13/04/2021



0.3 0 0.13 0.3
British_National_Grid Kilometers

© NRW/CNC. Some information derived from © UK Centre for Ecology & Hydrology © UKCEH, the Environment Agency © EA and Getmapping Plc and Bluesky International Limited, Defra, © Met Office and DARD Rivers Agency, © Cranfield University, © James Hutton Institute, © Ordnance Survey, © Land & Property Services. All rights reserved. © NRW/CNC. Cafwyd rhywfaint o wybodaeth o © Canolfan Ecoleg a Hydroleg y DU © UKCEH, the Environment Agency © EA a Getmapping Plc a Bluesky International Limited, Defra, © Y Swyddfa Dywydd ac Asiantaeth Afonydd DARD, © Prifysgol Cranfield, © Sefydliad James Hutton, © Yr Arolwg Ordnans, © Gwasanaethau Tir ac Eiddo. Cedwir pob hawl.



in association with the



Flood Risk Indicator

Title number and property description

WA869879

96, Gnoll Park Road, Neath, SA11 3DD

Flood risk

The land registered under the above title number does not fall within a river or sea floodplain and is more than 50 metres from the nearest river or sea floodplain.

The land is in an area that has a very low chance of flooding from rivers or the sea which means that it is unlikely to flood except in extreme conditions. The chance of flooding each year is less than 0.1 percent (1 in 1000). This takes into account the effect of any flood defences that may be in this area.

This result was produced on 7 April 2021 based on Environment Agency and Natural Resources Wales flood risk data that was current as of July 2018 and Land Registry data that was current as of 7 April 2021. The Flood Risk Indicator is based on the most up to date Environment Agency and Natural Resources Wales flood data available at the date and time of your search.

Disclaimer

The information contained in this document is for general information purposes only. The flood risk information is provided by the Environment Agency and Natural Resources Wales. You should note that:-

The Flood Risk Indicator shows only the predicted likelihood of flooding of areas of land from rivers or the sea and it is not detailed enough to describe the likelihood of flooding for individual properties.

Individual properties may not always face the same chance of flooding as the areas that surround them because, for example the property may be higher than the surrounding land. There may also be particular occasions when flooding occurs and the observed pattern of flooding does not in reality match the predicted patterns shown on the Environment Agency and Natural Resources Wales flood data.

Because the flood data from the Environment Agency and Natural Resources Wales is created as a result of a modelling process, it may by its nature not be as accurate as might be desired.

If you believe that a particular property does not face the chance of flooding shown on the Environment Agency and Natural Resources Wales flood data, or if you have information that you believe may not have been taken into account, then you should contact your local Environment Agency or Natural Resources Wales office or see the Environment Agency or Natural Resources Wales website for more information on flood data.

We will endeavour to keep the information up to date and correct but make no representations or warranties of any kind, express or implied, about the completeness, accuracy, reliability, suitability or availability with respect to the flood data. Any reliance you place on such information is therefore strictly at your own risk.

See <https://www.gov.uk/browse/environment-countryside/flooding-extreme-weather>
and <http://www.naturalresourceswales.gov.uk/flooding-and-water>