

Project Title:
**Proposed Residential Development,
126 & 126a High Street, Merthyr Tydfil**

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23.5475

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Carter Lauren

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/

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FLOOD RISK ASSESSMENT

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1.0 Introduction

Austin Partnership Limited Consulting Civil and Structural Engineers have been commissioned by Carter Lauren Construction to produce a basic level Flood Consequence Assessment in support of a conversion development of an existing property to 5 self-contained flats above existing commercial units along High Street, Merthyr

The requirement for the assessment is triggered by the site's location within Zone C2 of the Welsh Assembly's Development Advice Maps.

The purpose of the report is to assess in detail the risk of flooding to the site in question and assess its suitability for development in accordance with the Technical Criteria set out in Technical Advice note 15 (TAN 15) (2004).

The scope of the assessment covers the following:

- Assessment of the data against the key tests of Welsh Government Technical Advice Note (TAN15)
- Recommendations on suitability of development in relation to emergency response

2.0 Planning Policy Guidance

"The general approach of PPW, supported by the TAN, is to advise caution in respect of new development in areas at high risk of flooding"

"The Operation of a precautionary framework is governed by a Development Advice Map containing three zones (A, B, C with subdivision into C1 and C2) which should be used to trigger the appropriate planning tests in relations to sections 6 and 7 and appendix 1"

"Definitions of vulnerable development and advice on permissible uses in relation to the location of development and the consequences of flooding"

3.0 Development Advice Maps

The site as identified by the Local Planning Authority falls within **Zone C2** of the Development Advice Maps. TAN15 states that highly vulnerable development should not normally be located within this designation. As this is minor development, it is subject to a Flood Consequence Assessment fulfilling the criteria of Section 7 and Appendix 1 of the Technical Advice Note.

4.0 Nature of Development

Section 5 of TAN 15 outlines several development categories as part of the precautionary framework. The development specific to this application is classified as “Highly Vulnerable Development” under the TAN.

Highly Vulnerable development is accredited to residential development, public buildings, hotels etc. This proposal is for the change of use of the first and second floors from offices and storage to 5 self-contained flats and storage, together with alterations to the roof and other associated external alterations.

5.0 Justification of Development

The development concurs with the aims of Planning Policy Wales and meets the definition of previously developed land. The potential consequences of a flooding event for the development being assessed are addressed in Section 9.

6.0 Site Location

The site is located within a built-up residential area in Merthyr Tydfil. A site plan is included in Appendix A of this report.

The area is within the upper reaches of the Taff Catchment. General site levels slope upward from the River Taff. The main access road is the A4504 which is the primary access routes to settlements to the north and the A470 which is the main access through the Taff catchment from Cardiff to the Brecon Beacons.

7.0 Hydrological Setting

The site is situated close to one major river system that pass through the urban area of Merthyr Tydfil. The river Taff is located some 150 metres to the west of the site. The river Taff is constrained by various river engineering works including reinforcement embankments and raised walls. This is the very upper reaches of the catchment.

In addition to this is the Nant Morlais which is a largely culverted watercourse to the north of the site. Various engineering works have been undertaken on this culvert in the past to ensure it had capacity to take flood flows.

There are no other known water features such as issues, springs, drains present in proximity to the site, although there is a large amount of urban drainage infrastructure.

Figure 1 shows the current flood map at this location based on Welsh Government Development advice maps. This represents the undefended fluvial flood/tidal extents derived from nationally generalised as a major modelled data and historical flood outlines.

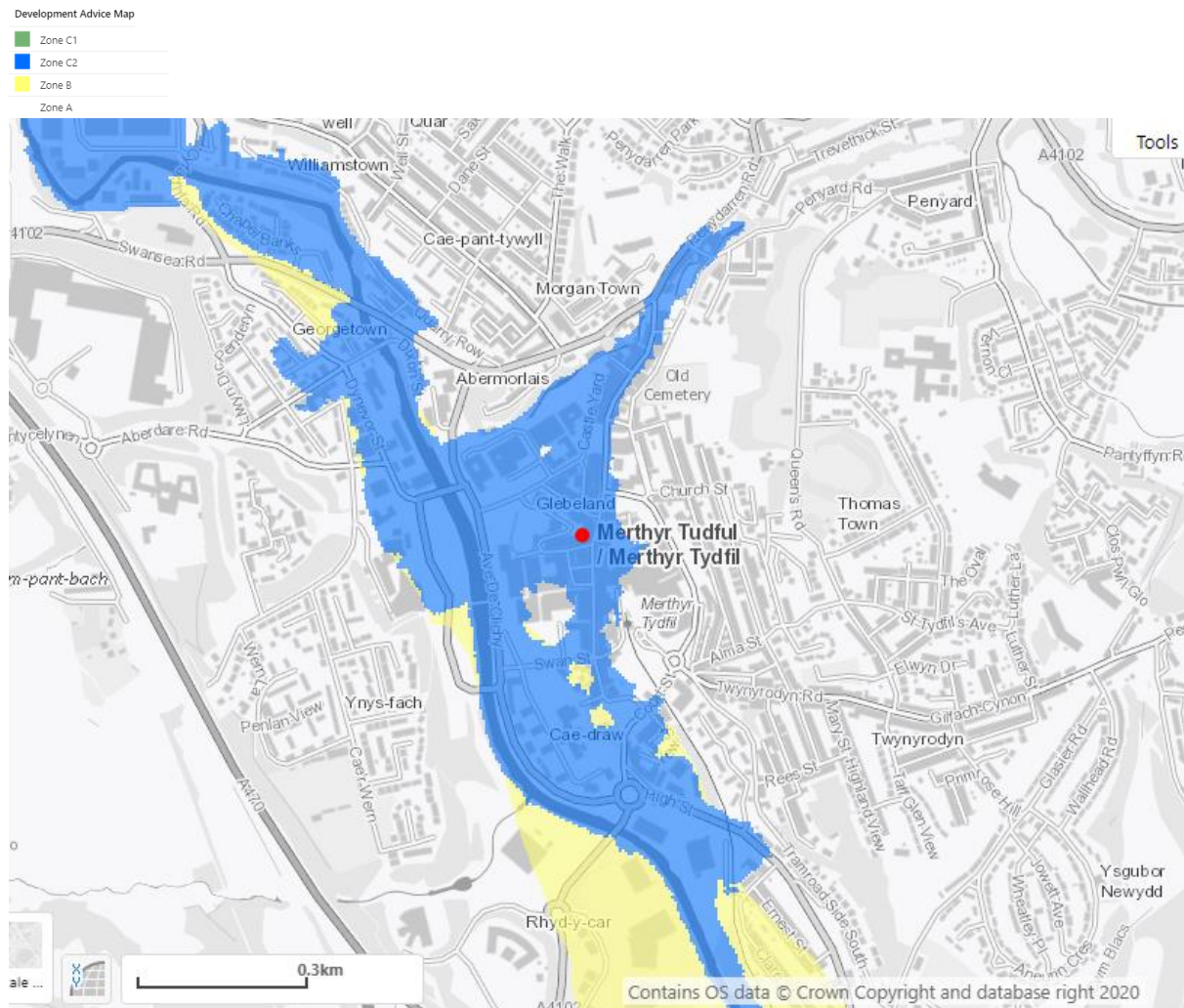


Figure 1: Welsh Government Development Advice Maps

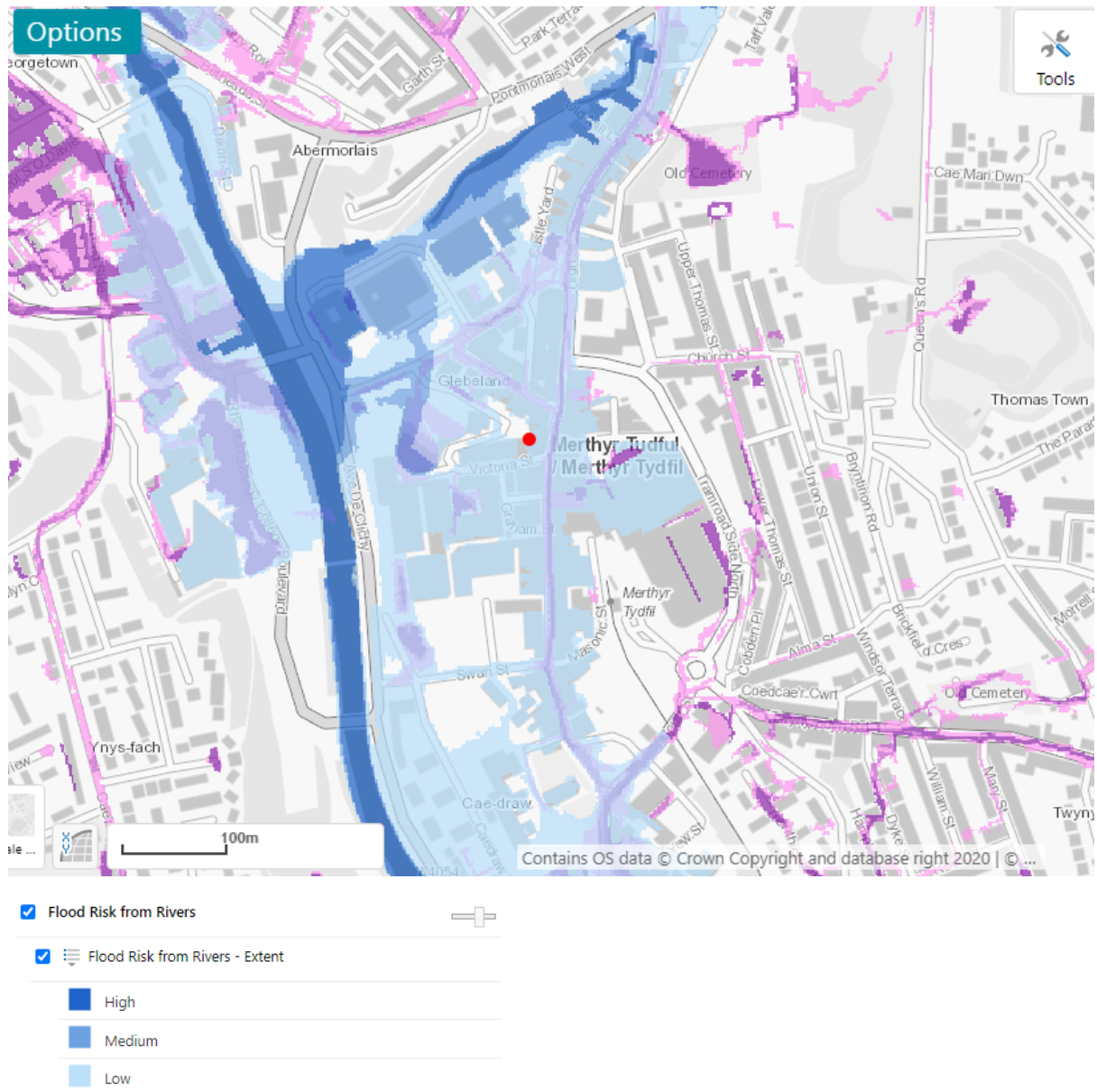


Figure 2 - Natural Resource Flood Risk Map

The map above shows the areas of flood risk described by Natural Resources Wales. The mapping is created by using computer models to predict the risk of flooding from rivers, the sea and surface water and small watercourses. The mapping is a combination of national scale modelling and detailed "local" model data.

The property where the conversion takes place is at the very periphery of the low area of flood risk. This is probably due to the fact the site levels are slightly higher in this area than surrounding areas.

9.0 Flood Risk and Acceptance Criteria

TAN 15 requires that proposals for developments in Zone C1/2 should be supported by an assessment that considers particular “Acceptability Criteria” as outlined in Section 7 and Appendix 1.

The acceptability criteria for highly vulnerable development such as the proposed residential development are indicated in Appendix 1 of TAN15.

In terms of hazard identification, the issue is addressed by considering the predicted flood levels and comparing them to site levels and proposed finished floor levels. A design level can then be interpreted using the table in Section A1.14 and A1.15 of TAN 15.

A1.14 (TAN15)

This prescribes that development should be “flood free” in the 1 in 100 flood Event (Inc climate change). Design levels should be indicated to demonstrate this. There should also be dry access from the site in a flood event of this return period.

For conversion development this criterion can be assessed more simply given that the new flats are within an existing building on the first floor and above. On this basis the floor levels of the habitable rooms are all above this threshold.

Access from the site to land outside the area of risk is immediately to the rear of the site as indicated on the flood risk maps.

A1.15 (TAN15)

This provides indicative thresholds of flooding where development could be considered suitable for development subject to an assessment of the consequences of flooding. The Q1000 flood event is at a probability (1 in 1000 years), hence very unlikely although requires consideration for planning purposes.

Like the assessment under A1.14, the converted apartments are on the first floor and above and therefore would be not a risk of flooding although the surrounding area could be more susceptible to risk, albeit low.

The additional criteria of TAN15 are addressed below:

A1.12 – A1.17

The developer must ensure that potential purchasers are aware of flood risk.

- ✓ This can be highlighted through Natural Resource Wales Flood maps that are picked up in Environmental Searches. The proposed properties would not be affected by flooding from the adjacent watercourses

- ✓ *Effective Flood Warnings can be provided at the site*

Natural resources Wales have provided information on flooding warning at this site.

A flood warning system is in place for this area. Natural Resources Wales (NRW) provide a staged warning service along the River Taff. The service encompasses the threat of flooding from both tidal and river flows.

Escape and Evacuation routes must be shown to be operational under all conditions.

- ✓ The access routes immediately adjoin the public highway and leads to an area that is outside any flooding influence.

No flooding Elsewhere

- ✓ Just a conversation development. No new buildings.

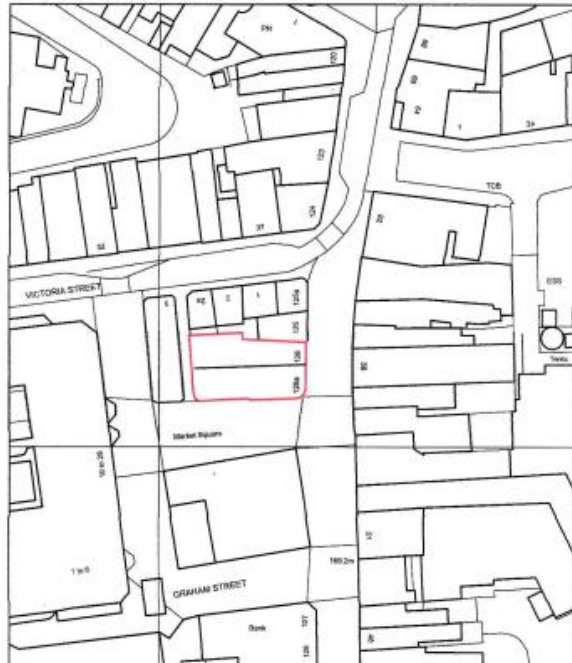
10.0 Conclusions

A basic level FCA has been undertaken to assess the general flood risk that is commensurate with the scale and nature of the development. Given the property is being converted to flats on the first floor and above, there isn't an immediate risk to the habitable areas. The property is essentially converted back to its original use with retail development remaining on the ground floor.

The general area is at low risk of flooding at there is immediate access to ground outside the influence of mapped floodwater. There are flood warning systems in place so occupiers could decide to remain within the properties until any flood subsided in the general area.

A more detailed analysis using more detailed flood modelling data could provide greater resolution on flood magnitudes but given this is more a small-scale conversion of upper floor development on the edge of a flood risk area it would unlikely have any bearing on the outcome of the acceptability criteria under TAN15.

Appendix A



Key

 Site boundary

Site Location Plan