



FLOOD RISK ASSESSMENT

**in support of a Planning Application for the
change of use of**

**THE MITRE BUILDINGS
BREWERY PLACE
WREXHAM
LL13 7LU**

On behalf of

**MR G C ROBERTS
TAMWORTH HOUSE
GARDEN COURT
GARDEN VILLAGE
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**Consulting Engineers
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1.0 Introduction

- 1.01 This is a Flood Risk Assessment (FRA) for the proposed change of use at an existing building known as the The Mitre Buildings, Brewery Place Wrexham. It has been prepared in accordance with the requirements of Technical Advice Note 15 (TAN 15): Development and Flood Risk.
- 1.02 **SITE LOCATION**
The site is located at Ordnance Survey Grid Reference SJ 33250 50200 and is bordered by Brewery Place to the north, a car park to the west and other buildings to the south and east. The River Gwenfro (Afon Gwenfro) is within 20m of the site.
- 1.03 **DEVELOPMENT PROPOSALS**
The proposal is to convert the building to 4 residential units. Residential development is classed as 'highly vulnerable development' under TAN 15.
- 1.04 **SITE TOPOGRAPHY**
The floor level of the existing ground floor is 77.80m AOD.
Levels of the car park vary across the site from 77.12m to 76.48 AOD
The level of the footpath in Brewery Place is 77.20m AOD and falls constantly towards the junction with Pentre Felin
- 1.05 **SITE ACCESS**
Access to the site is directly off Brewery Place to the north of the building.

2.0 FLOOD ZONE MAPPING

- 2.01 **USE OF FLOOD MAPS**
TAN 15 refers to the use of Development Advice Maps (DAM) provided by the Welsh Assembly Government and are based on the Environment Agency's extreme flood outlines. The DAM confirms the site is in Zone C2, an area without significant flood defence infrastructure (1000Year)
- The EAW flood map also confirms the site to be within the area of a 1 in 1000 year flood profile.
- 2.02 **FLOOD ZONE**
Further discussion with the EAW have confirmed a more recent study of the Afon Gwenfro has been undertaken by JBA Consulting in 2009 and the flood maps contained in the report have superceeded the DAM.
The JBA map reconfirms the site status as within the Zone C2.

3.0 RISK OF FLOODING

3.01 AFON GWENFRO

The Afon Gwenfro is close to the northern boundary of the site flowing generally in an easterly direction and is culverted where it runs parallel to the northern site boundary, however the entrance to the culvert is only 15m from the north west corner of the site.

Flooding from the Afon Gwenfro has occurred Wrexham although flooding is not known to have occurred at the site.

3.02 FLOODING DEPTHS 1% EVENT

The JBA Consulting Flood Depth Map for a 1% event (1 in 100 year + climate change) confirms no fluvial flooding of the site would be expected, this complies with TAN 15 Appendix 1.14 for the development type.

3.03 FLOODING DEPTHS 0.1% EVENT

The JBA Consulting Flood Depth Map for a 0.1% (1 in 1000 year) confirms some flooding of the site from a depth of 0.2m and increasing to 0.4m over part of the building.

Flooding is understood to be as a result of overland flooding from the open sections of Afon Gwenfro.

3.04 FLOOD HAZARD RATING

The Flood Hazard Map for a 0.1% event produced by JBA Consultants gives the site as 'a very low hazard' rating.

3.05 WATER LEVELS

Modelled water levels for the site are not available and therefore interpolation of the flood depths from the JBA 0.1% event map have been applied to the site levels and the plot of the flood depths suggest the water level would be expected to pond at a level of 77.08m during a 1 in 1000 year event.

The ground floor level of the existing building is at 77.80m and therefore no flooding would be expected.

Flooding of the lower ground floor could be expected.

3.06 ASSESSMENT FOR A CULVERT BLOCKAGE SCENARIO

A flood risk model was provided by JBA Consulting under a blockage scenario in the Gwenfro culvert.

3.07 SITE WATER LEVELS IN BLOCKAGE

The analysis showed under a blockage situation the flood water levels could rise to 77.25m. The maximum period under flood conditions would be relatively short at 5-6 hours and the flows would be shallow and fast

4.0 CONCLUSIONS

4.01 GROUND FLOORS

The predicted flood level of 77.25m under a culvert blockage situation is lower than the ground floor of the existing building at 77.80m providing a freeboard of 0.55m and therefore these habitable areas are not at risk from flooding

4.02 LOWER GROUND FLOOR TO EXISTING BUILDING

The lower ground floor to the existing building which has windows on the west side facing the car park is at risk from fluvial flooding in a 1 in 1000 year event and from a culvert blockage situation. However this floor is to be non-habitable space and have a usage of storage only

4.03 ACCESS TO AND FROM THE SITE

The access to and from the site is via the main entrance on Brewery place and in the event of a flood dry escape can be made by using this entrance. This entrance and the surrounding footpath / highway of Brewery Place are above the flood levels