



OBA | CONSULTING
CIVIL & STRUCTURAL
ENGINEERS

SITE SPECIFIC FLOOD RISK ASSESSMENT FOR PLANNING SUBMISSION

**Belturbet Community & Enterprise Hub,
Main Street,
Belturbet,
Co. Cavan**

Reference: 99-07
Date: 05 February 2024



**ENGINEERS
IRELAND**



ACEI
Association of Consulting
Engineers Ireland

OBA Consulting Engineers Ltd
The School Yard
1 Grantham Street
Dublin 8
Tel +353 1 535 0084
Web www.obaconsulting.ie

Client: Cavan County Council
 Architect: Cooney Architects
 Report prepared by: Ciaran O'Brien

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FLOOD RISK ASSESSMENT REPORT

Project: Belturbet Communit & Enterprise Hub
 Job No: 99-07
 Revision:

By: COB

Date: 05.02.2024

1 EXECUTIVE SUMMARY

OBA Consulting were appointed by Cooney Architects to provide a flood Risk assessment and report for the proposed Community & Enterprise Hub, Belturbet, Co. Cavan.

The development consists of renovations and extensions to an existing 'Dinkins Bakery', and provision of a new commercial Community & Enterprise Hub located on Main Street, Belturbet.

The site is located in flood zone C.

Based on the findings below it is our opinion the development poses a negligible flood risk.

2 INTRODUCTION

2.1 PROPOSED DEVELOPMENT

The proposal is to demolish, renovate and extend the existing 'Dinkins Bakery', and provision of a new commercial Community & Enterprise Hub located on Main Street, Belturbet. The proposed site layout plan is provided in figure 2.1 below

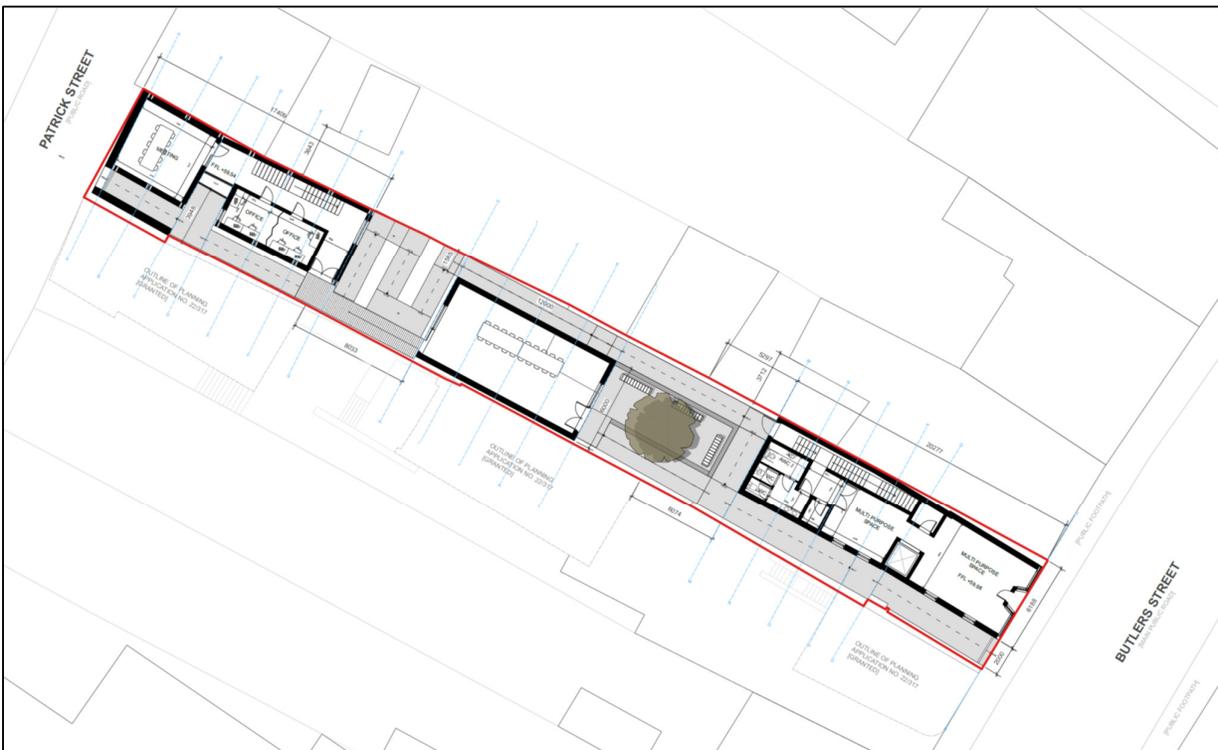


Fig 2.1 Proposed Site Layout Plan

2.2 FLOOD RISK ASSESSMENT METHODOLOGY

This FRA is set out in line with the recommendations contained in the Department of Environment Heritage and Local Government and the Office of Public Works (DEHLG/OPW) Guidelines on The Planning System and Flood Risk Management published November 2009, including identification of risk sources, Pathways, Receptors and Mitigating measures. The basis of this FRA will be site specific.

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2.3 SITE LOCATION

The site, 'Dinkins Bakery', is located on Main Street, Belturbet. Irish Grid Reference X: 236421; Y: 317040.

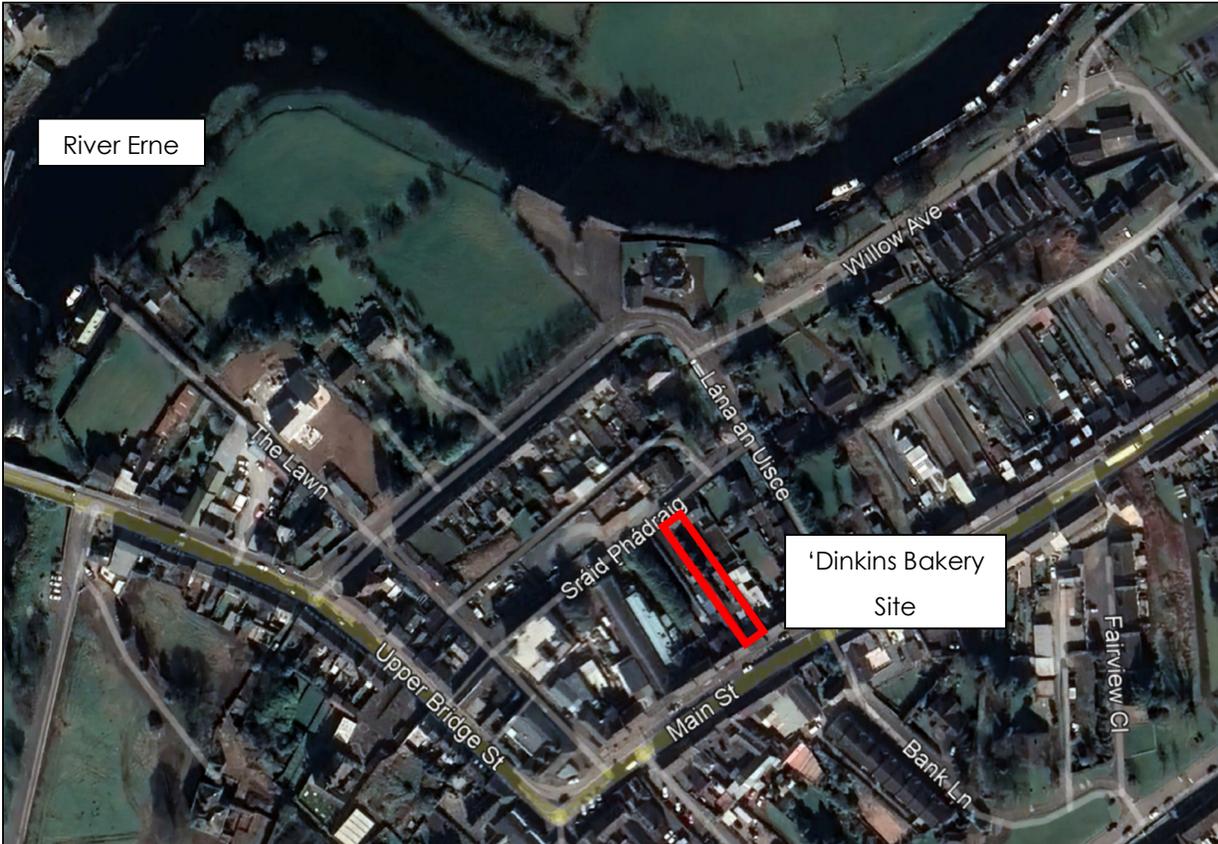


Fig 2.2 Site Location Aerial Map

2.4 EXISTING SITE USAGE & TOPOGRAPHY

The site comprises existing double storey bakery/residential on a site of area of approx. 545 m².

2.5 EXISTING WATER COURSES IN THE VICINITY OF THE PROPOSED DEVELOPMENT

The site is situated in an urban environment with no waterbodies within or bordering the site. As shown in Figure 2.2 the nearest watercourse is the Erne River which is located c. 125m to the north of the subject site. The lower finished ground floor level (56.700 mOD) of the site is suitably elevated above the Erne River Flood extent, in excess of 10m above the Erne River Flood Plain. See also section 3.3.2, below.

3 FLOOD RISK IDENTIFICATION

Historical and predictive information to allow an evaluation of the potential for flooding of the site and proposed building works is available from various sources including state and semi state bodies, recorded planning documentation and local information.

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3.1 ASSESSMENT OF FLOOD MAPS/FLOODING HISTORY

3.1.1 FLOODMAPS.IE WEBSITE

The Office of Public Works as part of their remit have developed a national flooding hazard map which collects recorded data and flooding events across the country.

We have reviewed the Flooding.ie web site. There have been two recorded flooding events in close proximity to the site as can be seen on the attached map extract (figure 3.1).

The full 'Past Flood Events' report can be reviewed in appendix A

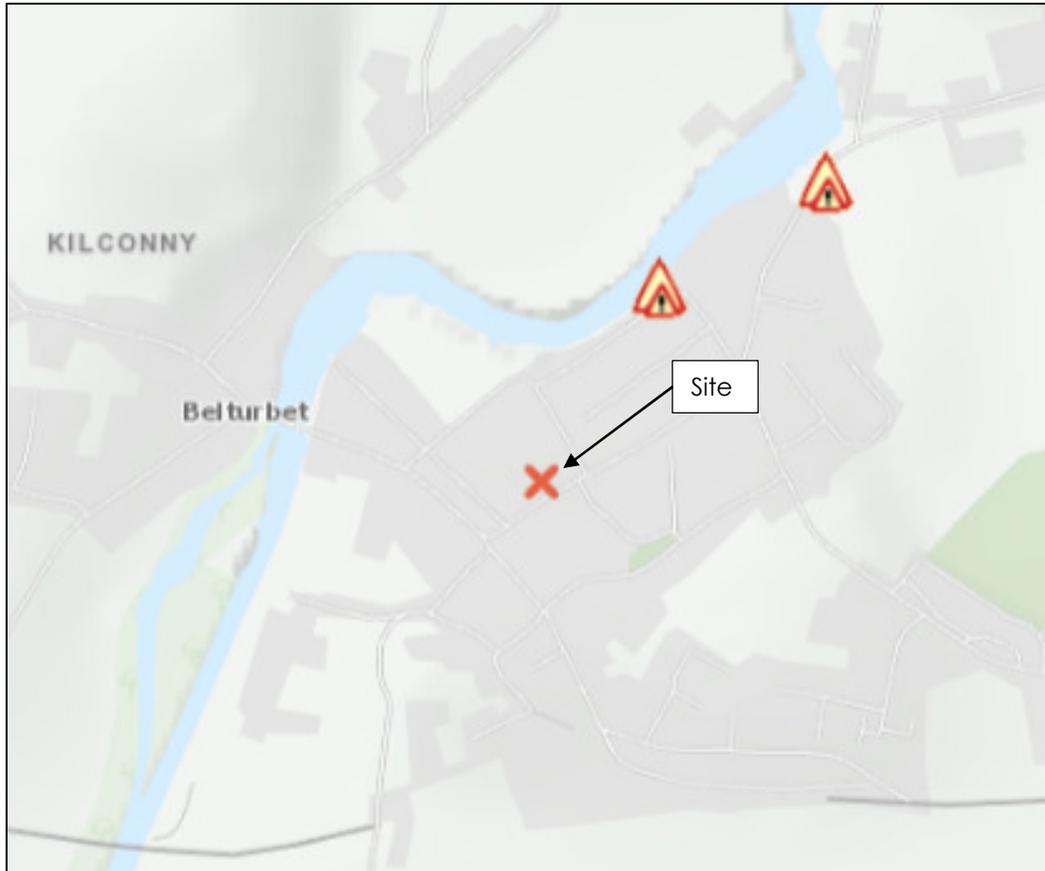


Fig 3.1 Extract from OPW website showing the previous flooding events in close proximity to the site.

3.2 PREDICTIVE FLOODING INFORMATION

The Eastern CFRAM study is the most detailed mapping undertaken in the Dublin region. It commenced in June 2011 with final flood maps issued during 2016. The Eastern CFRAM involves detailed hydraulic modelling of rivers and their tributaries. Following the detailed hydraulic modelling, flood maps were produced for the 10%, 1% and 0.1% AEP flood events. There are no available CFRAM maps covering the proposed site area.

However, considering the elevation above River Erne, there is no flooding predicted for either a 100-year or 1000-year event for Fluvial flooding.

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3.3 SOURCES OF FLOODING

The initial stage of a Flood Risk Assessment requires the identification and consideration of probable sources of flooding. Following the initial phase of this Flood Risk Assessment, it is possible to summarise the level of potential risk posed by each source of flooding. The flood sources are described below.

3.3.1 COASTAL

Review of the Eastern CFRAM flood maps confirms that the site is not at risk of Tidal flooding originating from the Erne River, the site is beyond the tidal influence. this risk can be screened out of this report.

3.3.2 FLUVIAL

All available sources of historic flooding have been researched as part of the FRA. The nearest watercourse to the site is the Erne River c. 125m to the north. Review of the fluvial flood mapping produced as part of the CFRAM study confirms that the site is located in Flood Zone C. (Refer to Fig. 3.3).

The site is located at an elevation of approximately 57.7 mOD with the Erne River 1000-year (0.1% AEP) flood at 53.42 mOD to the north-west, this risk can be screened out of this report.



Fig 3.3 Extract of CFRAM mapping showing extents of Fluvial flooding

3.3.3 PLUVIAL

Pluvial or surface water flooding is the result of rainfall-generated flows that arise before run-off can enter a watercourse or sewer. A number of sources have been researched as part of the OPW PFRA flood mapping and review of floodmap.ie.

The OPW mapping does not extend to show pluvial events for this location, however for good practice, pluvial flooding will be considered further and mitigation measures proposed.

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3.3.4 GROUND WATER.

The OPW PFRA was reviewed and did not indicate groundwater flooding at the site or surrounding area. The GSI groundwater vulnerability for the site is classified as moderate. Furthermore, there are no karst features in the area which would indicate areas at risk of groundwater flooding. In summary, there is no known risk of groundwater flooding in this area and this has been screened out at this stage.

4 FLOOD RISK IMPACT ASSESSMENT, RECEPTORS & MITIGATION.

Review of the available sources of flooding outlined above confirms that there are no identified historic flooding events within or in close proximity to the site.

The site is located within Flood Zone C.

4.1 FLOOD RISK & MITIGATING MEASURES.

A.

| | |
|------------|--|
| Source | Surcharge backup from public sewers. |
| Receptor | Ground floor of the Community & Enterprise Hub |
| Likelihood | Low. No historic event of this nature recorded in relatively close proximity |
| Mitigation | Provision of storm water attenuation and rainwater harvesting tank will reduce storm discharge from the site. Maintain existing floor, footpath, road levels, which currently provide natural watershed away from the building eastwards. Provide new entrance to the building with sufficient threshold to ensure natural watershed away from the access point in the unlikely event of pluvial flooding. |

4.2 IMPACT ON ADJOINING PROPERTIES.

The provision of the site-specific drainage system, inclusive of rainwater harvesting tank, surface water attenuation and limited discharge ensure no surface water from within the site will impact on adjoining properties.

The site is outside the predicted flooding areas based on the CFRAM maps. Therefore, there can be no displacement effect.

5 CONCLUSION

- No records of flooding in the immediate vicinity of the site were localised to the Erne river and close proximity. The site is approximately 10m above the predicted 1000-year (0.1% AEP) fluvial flood level.
- The proposed development is located outside the predicted CFRAM flooding zone.
- The topography to the north-east of 'Dinkins Bakery' has moderate fall (watershed) along Main Street towards the junction with Water Lane and beyond.
- There are no foreseen effects on the adjoining neighbouring sites
- Proposed development is a redevelopment of an existing site. Proposed levels consistent with the existing.
- Proposed relocated entrance door will mitigate the unlikely potential for pluvial flooding by providing improved watershed away from the access point.

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- Proposed SUDS to include sedum green roof, rainwater harvesting and attenuation, which will reduce existing SW discharge rate to the public sewers.

Given the findings above it is our opinion that the site and development pose negligible flood risk.

The assessment is a desk top study based on the best available data, this report provides, in our view, the best available assessment of the effect of flooding at the site. In using the DEHLG/OPW Guidelines it is determined that the development site is located within Flood Zone C.

References

1. National Flood Hazard Mapping, www.floodmaps.ie, OPW.
2. CFRAM Study, Flood Maps, www.floodinfo.ie/map/floodmaps/ OPW.
3. Greater Dublin Strategic Drainage Strategy; and
4. Greater Dublin Regional Code of Practice for Drainage Works.



Ciaran O'Brien

BEng, CEng, MIEI, Eurlng, FConsEI



6 APPENDIX A

OPW FLOOD HAZARD MAPPING

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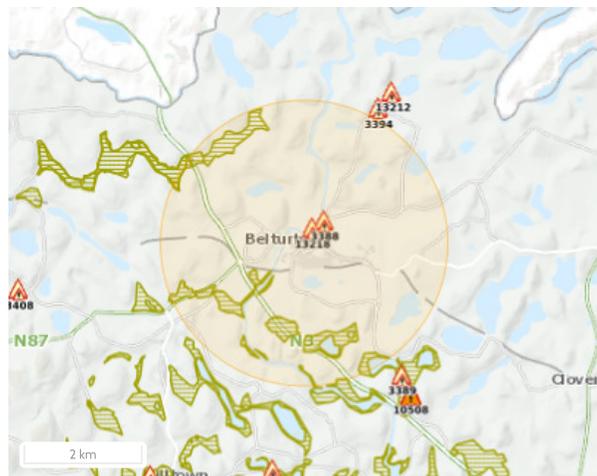
Date: 05.02.2024



Report Produced: 5/2/2024 23:43

This Past Flood Event Summary Report summarises all past flood events within 2.5 kilometres of the map centre.

This report has been downloaded from www.floodinfo.ie (the "Website"). The users should take account of the restrictions and limitations relating to the content and use of the Website that are explained in the Terms and Conditions. It is a condition of use of the Website that you agree to be bound by the disclaimer and other terms and conditions set out on the Website and to the privacy policy on the Website.



Map Legend

- Single Flood Event
- Recurring Flood Event
- Past Flood Event Extents
- Drainage Districts Benefited Lands*
- Land Commission Benefited Lands*
- Arterial Drainage Schemes Benefited Lands*

* Important: These maps do not indicate flood hazard or flood extent. Their purpose and scope is explained on Floodinfo.ie

2 Results

| | Name (Flood_ID) | Start Date | Event Location |
|----|---|------------|-------------------|
| 1. | Creeny Bridge, Belturbet Recurring (ID-3388) Additional Information: Reports (2) Press Archive (0) | n/a | Approximate Point |
| 2. | Flooding at Belturbet on 01/12/2015 (ID-13218) Additional Information: Reports (0) Press Archive (0) | 01/12/2015 | Approximate Point |