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CONSULTING ENGINEERS

DOCUMENT TITLE

FLOOD RISK ASSESSMENT FOR NEW SDCC TRAVELLERS ACCOMODATION

CLIENT
SDCC

PROJECT NO. 5823

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P1	25.11.2025	ASM	NOB	RMc	Issued for planning
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1 Contents

2 Introduction

McCrae Consulting Engineers (MCE) has prepared this site-specific Flood Risk Assessment (FRA) as part of a planning application to demonstrate that the proposals to develop a vacant site located parallel to the R120 Adamstown Road are in full compliance with the requirements of **The Planning System and Flood Risk Management** (PSFRM) guidelines published by the Department of Environment, Heritage and Local Government in November 2009.

2.1 Overview of the Proposed Development

The development site is located parallel to the R120 Adamstown Road and comprises a total area of approximately 2.37 hectares.

The site consists of two distinct areas:

1. The demolition of the existing Traveller Accommodation Site (Area 0.81 hectares) known as 'Rock Road Mansions', Lucan, Co. Dublin
2. The development of a new Traveller Accommodation group housing scheme (Area 1.56 hectares) to be know as 'Lock Road', Grange Castle West, Lucan, Co. Dublin.

The proposed new development will include;

- New single story detached house with 2 No. car parking spaces.
- No. new halting site bays, each with a single story day unit, an adjacent mobile unit and 2 No. car parking spaces.
- New single story homework club.
- New play area and hard standing.
- New enterprise area.
- 2 no. storage sheds.
- New external bin store.
- New Irish Water pumping station.
- Installation of new external site lighting.
- Reconfiguring of the existing entrance to the site to provide pedestrian & vehicle access.
- All associated roadways, paths and boundary fencing.
- All hard and soft landscaping to include a Berm to the West and South of the proposed development.
- All associated ancillary site works as may be required in adjacent lands but not limited to foul and surface water drainage and utility supplies.

The site is located about 1.5km northwest of Grange Castle Business Park South in a commercial area bounded to the north by EdgeConneX Data Centre and parallel to R120 Adamstown Road. A location map is shown in figure 2.1. Irish grid coordinates for the Centre of the site are E302605 and N231572.

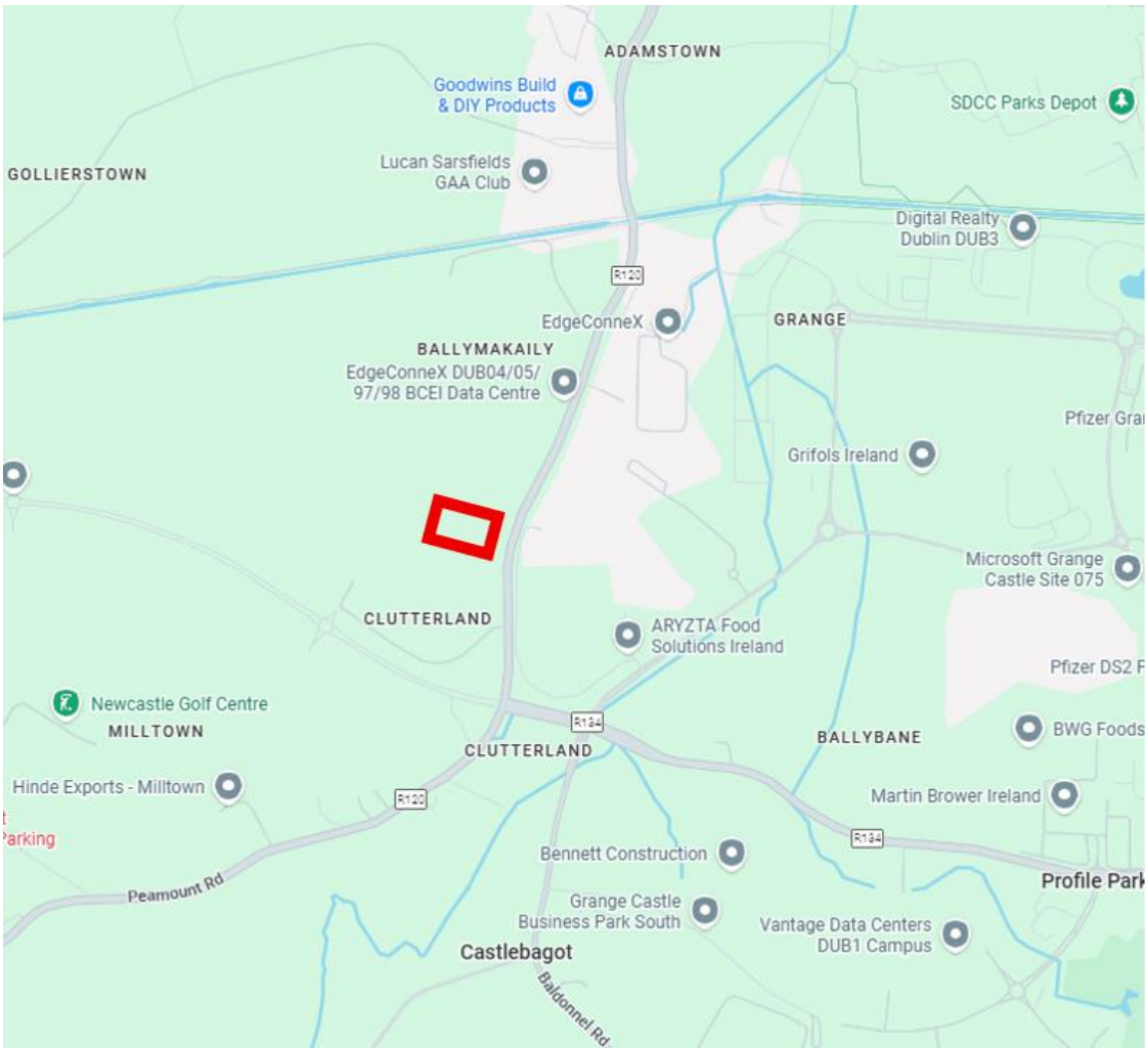


Fig 2.1 showing site location NW of Grange Castle Business Park South denoted in red

3 Flood Risk Management Guidelines

The Planning System and Flood Risk Management Guidelines (hereafter referred to as FRM Guidelines) was published in November 2009.
The core objectives of the Guidelines are to:

- Avoid inappropriate development in areas at risk of flooding.
- Avoid new developments increasing flood risk elsewhere, including that which may arise from surface water run-off.
- Ensure effective management of residual risks for development permitted in floodplains.
- Avoid unnecessary restriction of national, regional or local economic and social growth.
- Improve the understanding of flood risk among relevant stakeholders.
- Ensure that the requirements of EU and national law in relation to the natural environment and nature conservation are complied with at all stages of flood risk management.

The sequential approach mechanism in the Flood Risk Management is based on the identification of flood zones for river and coastal flooding as follows:

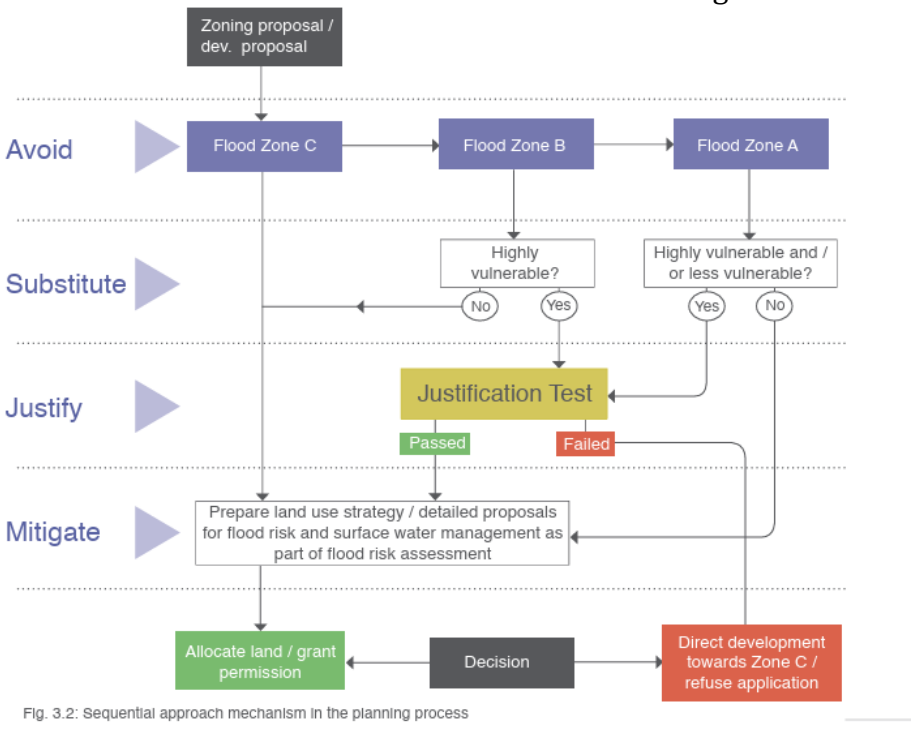


Fig. 3.2: Sequential approach mechanism in the planning process

Flood Zone A

- Lands with a high probability of flooding;
- Subject to flooding in the 1 in 100 year return period storm event - rivers,
- subject to flooding in the 1 in 200 year return period event - coastal/ tidal areas.

Flood Zone B

- Lands with a moderate probability of flooding;
- Subject to flooding in the 1 in 100-year return period storm event - rivers,
- subject to flooding in the 1 in 1000-year return period event– coastal/ tidal areas.

Flood Zone C

- Lands with a low probability of flooding;
- Subject to flooding in the 1 in 100-year return period storm event - rivers,
- subject to flooding events greater than the 1 in 1000-year return period.

The guidelines set out the different types of new development appropriate to each zone as shown in tables 3.1 (vulnerability classes of structures) and 3.2 (matrix of vulnerability) overleaf from the FRM guidelines. The guidelines classify Residential units as **Highly vulnerable development**.

Vulnerability class	Land uses and types of development which include*:
Highly vulnerable development (including essential infrastructure)	Garda, ambulance and fire stations and command centres required to be operational during flooding; Hospitals; Emergency access and egress points; Schools; Dwelling houses, student halls of residence and hostels; Residential institutions such as residential care homes, children's homes and social services homes; Caravans and mobile home parks; Dwelling houses designed, constructed or adapted for the elderly or, other people with impaired mobility; and Essential infrastructure, such as primary transport and utilities distribution, including electricity generating power stations and sub-stations, water and sewage treatment, and potential significant sources of pollution (SEVESO sites, IPPC sites, etc.) in the event of flooding.
Less vulnerable development	Buildings used for: retail, leisure, warehousing, commercial, industrial and non-residential institutions; Land and buildings used for holiday or short-let caravans and camping, subject to specific warning and evacuation plans; Land and buildings used for agriculture and forestry; Waste treatment (except landfill and hazardous waste); Mineral working and processing; and Local transport infrastructure.
Water-compatible development	Flood control infrastructure; Docks, marinas and wharves; Navigation facilities; Ship building, repairing and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location; Water-based recreation and tourism (excluding sleeping accommodation); Lifeguard and coastguard stations; Amenity open space, outdoor sports and recreation and essential facilities such as changing rooms; and Essential ancillary sleeping or residential accommodation for staff required by uses in this category (subject to a specific warning and evacuation plan).

*Uses not listed here should be considered on their own merits

Table 3.1 Classification of vulnerability of different types of development

	Flood Zone A	Flood Zone B	Flood Zone C
Highly vulnerable development (including essential infrastructure)	Justification Test	Justification Test	Appropriate
Less vulnerable development	Justification Test	Appropriate	Appropriate
Water-compatible development	Appropriate	Appropriate	Appropriate

Table 3.2: Matrix of vulnerability versus flood zone to illustrate appropriate development and that required to meet the Justification Test.

Exceptions to the restriction of development are provided for using the Justification Test, where the planning need and the sustainable management of flood risk to an acceptable level must be demonstrated. This test recognizes the need for development in existing towns that lie within flood risk zones and that a blanket ban on any future development within those areas is impractical.

The guidelines recommend a three-stage approach to undertaking an FRA as per the following:

- Flood Risk Identification (Stage 1) - Identification of any potential flooding or surface water issues which may impact the proposed development site.
- Initial Flood Risk Assessment (Stage 2) - Establishment of the sources of flooding, the extent of the flood risk, potential impacts and identification of possible mitigation measures.
- Detailed Flood Risk Assessment (Stage 3) - Assess flood risk issues in sufficient detail to provide quantitative appraisal of potential flood risk of the development, impacts elsewhere of the flooding and the effectiveness of any proposed mitigation measures.

This report addresses the requirements for all three stages.

4 Flood Risk Identification (Stage 1)

4.1 PFRA Preliminary Flood Risk Assessment

The Preliminary Flood Risk Assessment (PFRA), a national screening exercise conducted by the OPW to identify areas which may be at significant risk of flooding, was completed in December 2011. It used as its data sources any existing available or readily derivable information including public consultation. It subsequently identified over 300 locations nationwide as Areas for Further Assessment (AFAs) and this does not include proposed site as pointed in the flood maps, noting the town is not at risk of fluvial flooding. (see extract below).

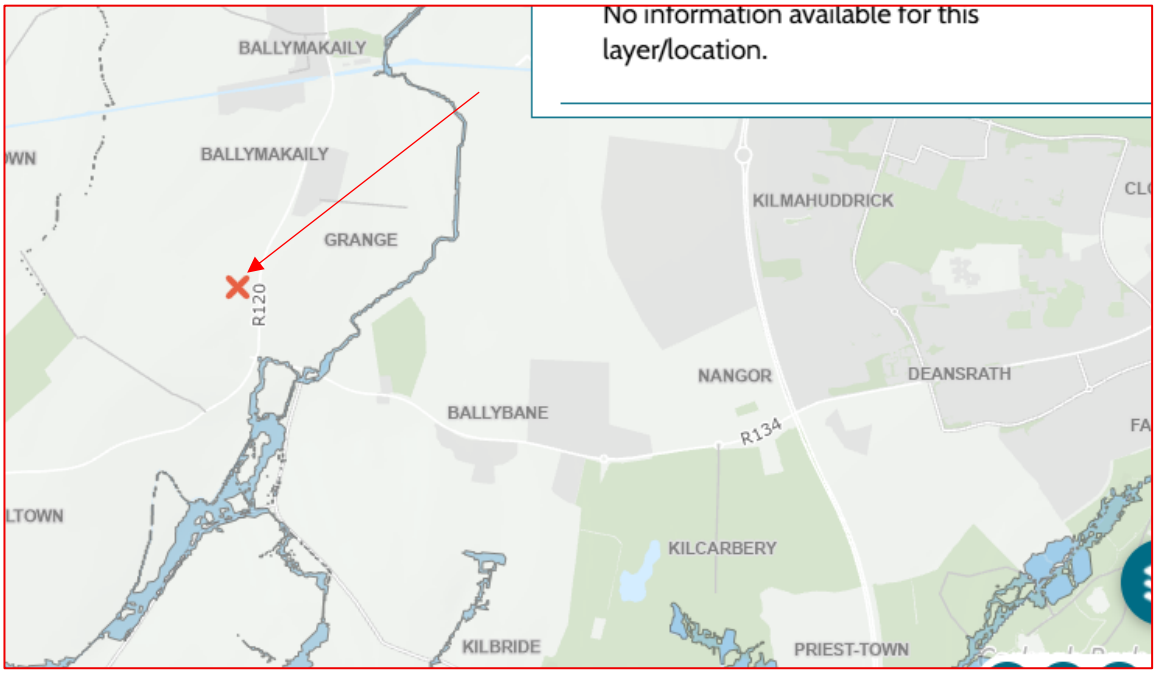
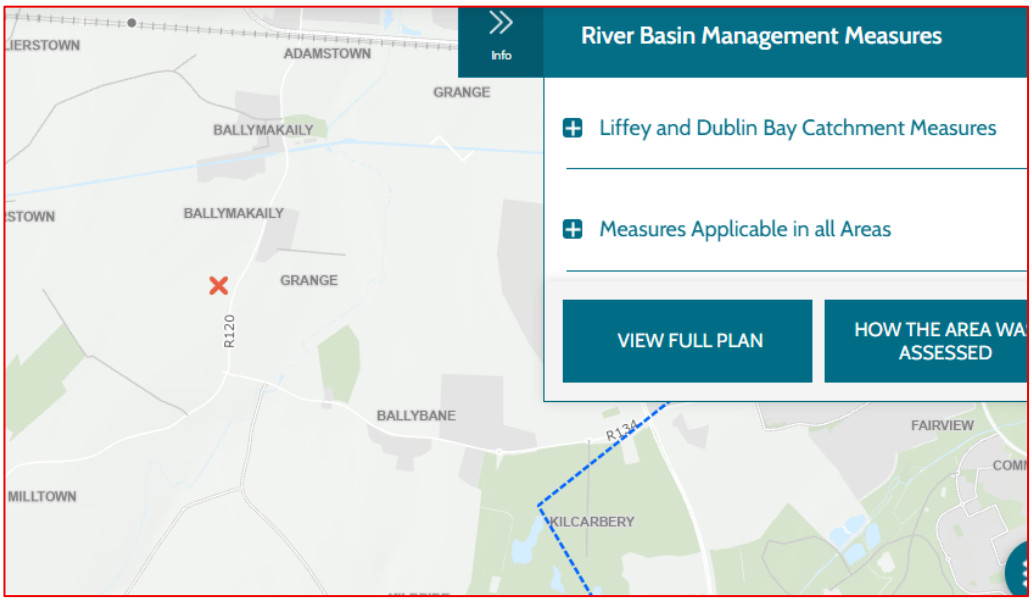


Fig 4.1: CFRAM flood map indicating the proposed area

4.2 CFRAM Flood Risk Mapping

The National Catchment Flood Risk Assessment and Management Program (CFRAM) was developed to meet the requirements of the EU Floods Directive (2007/60/EC) and falls under the auspices of the OPW, the lead agency for flood risk management in Ireland. As part of the CFRAMS program, no localized measures were assessed for the region of proposed site. The area comes under the flood risk management plan for the Liffey & Dublin Bay River Basin (UOM09).



4.3 Historical Records

A review of available historical sources has not indicated any history of flooding associated with the site. The old Ordinance Survey maps do not contain any indication of the area either being prone to flooding or being recorded as marsh land.

Floodmaps.ie indicate one flooding event (from 2000) located within 2.5km radius. A copy of this map is included in the appendices.

4.4 Local Knowledge

We did not establish any local anecdotal evidence of past flooding events which would contradict or otherwise impact on the conclusions arrived at from review of the other publicly available primary sources of information.

4.5 Stage Conclusions

The outcome of the flood risk identification stage is that there is recorded evidence that flooding has occurred in the past at **Peamount R134 R120 junction Nov 2000** however there is no evidence of the area around the proposed site being flooded.

5 Initial Flood Risk Assessment (Stage 2)

5.1 Potential Flood Sources

All potential flood risks and flood water sources pertaining to the site area outlined are as follows:

Fluvial Flood Risk

Fluvial flooding arises from a watercourse exceeding its capacity and spilling over adjacent flood plain. There is no presence of an adjacent watercourse flowing in the general area .

Pluvial Flood Risk

Pluvial flooding is the result of rainfall (usually high intensity) generated overland flows which arise before runoff can enter a watercourse or storm sewer.

The proposed site lies on a largely level plain and there are no neighboring hills or elevated geological structures, although there are challenges in connecting the surface water to existing manholes via gravity.

To overcome this constraint, the surface water runoff from various areas of the site will be collected through gullies and conveyed directly to soakaway strips proposed along both sides of the development. These strips have been designed to accommodate storm events with a return period of up to 1 in 100 years, including a 20% uplift for climate change, ensuring robust performance under extreme weather conditions.

We therefore conclude that pluvial flooding will not pose a risk to the development.

Groundwater Flood Risk

Groundwater flooding occurs because of water rising up from the underlying rocks or from groundwater flowing from abnormal springs. This type of flooding is usually associated with extended periods of heavy rainfall and is associated with the formation or re-occurrence of turloughs/winter lakes mostly in the karstic limestone areas as found primarily in the West of Ireland. In addition to a review of geological mapping and local records, the Office of Public Works (OPW) Preliminary Ground Water Flood Hazard Map for Ireland (2010) was also examined, and it was determined that ground water flooding does not pose a key risk at this site.

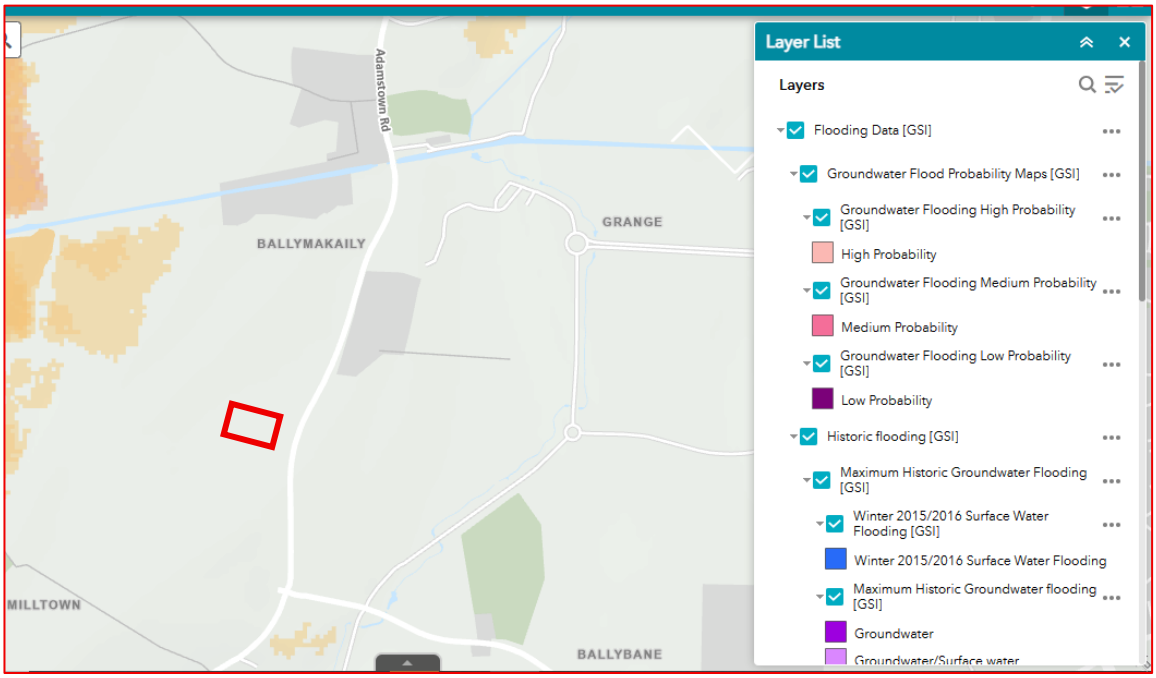


Fig 5.1 Groundwater flooding data map

Coastal/Tidal Flood Risk

Coastal/Tidal flooding results from a high tide combined with a storm surge resulting in the inundation of the flood plain at coastal locations or on the tidal reaches of rivers. As the proposed site is located some 16 km from the coast (nearest point Malahide estuary) and the site is some 70m above sea level no risk is associated with coastal/tidal flooding.

Surcharge of Existing Drainage Systems

No records of any surcharge of the existing drainage systems on the site are recorded on the OPW flood maps.

5.2 Stage Conclusions

The outcome of the **initial flood risk assessment** is that there is no risk of **flooding** at the proposed site

6 Detailed Flood Risk Assessment (Stage 3)

6.1 Flood Modelling

A review of the CFRAM mapping (Appendix 2) indicates that the proposed development site is situated above the flood levels associated with both the medium- and high-risk model scenarios. The lowest-risk model, representing a 1 in 1000-year (0.1% AEP) event, shows a predicted water level of 67.41 m OD at the nearest modelled node (09GRIF005571), located approximately 400 m south of the site. Although the CFRAM mapping dates from mid-2016, the junction where flooding previously occurred has since been redeveloped, resulting in ground levels now exceeding the 0.1% AEP water level and effectively preventing any overland flow route towards the proposed development. The existing ground level at the site is approximately 67.0 m OD, with a proposed finished floor level of 67.11 m OD. While this is marginally below the modelled 0.1% AEP water level, the site's distance from the modelled node, combined with the altered topography and flow path obstruction, indicates that the development is not at significant flood risk.

Thus, the site may be classified as **Flood Zone C** in the matrix of vulnerability given in the FRM guidelines (see section 2 above) meaning that the proposed development is appropriate and there is no requirement to apply the justification test.

6.2 Fluvial Flooding Pathways

The proposed ground floor level will be comfortably above flood levels associated with 1-in-1000 year events as outlined above. The fluvial flooding map included on the FloodInfo website (screenshot reproduced below) does not anticipate encroachment overland in the area of the proposed site.

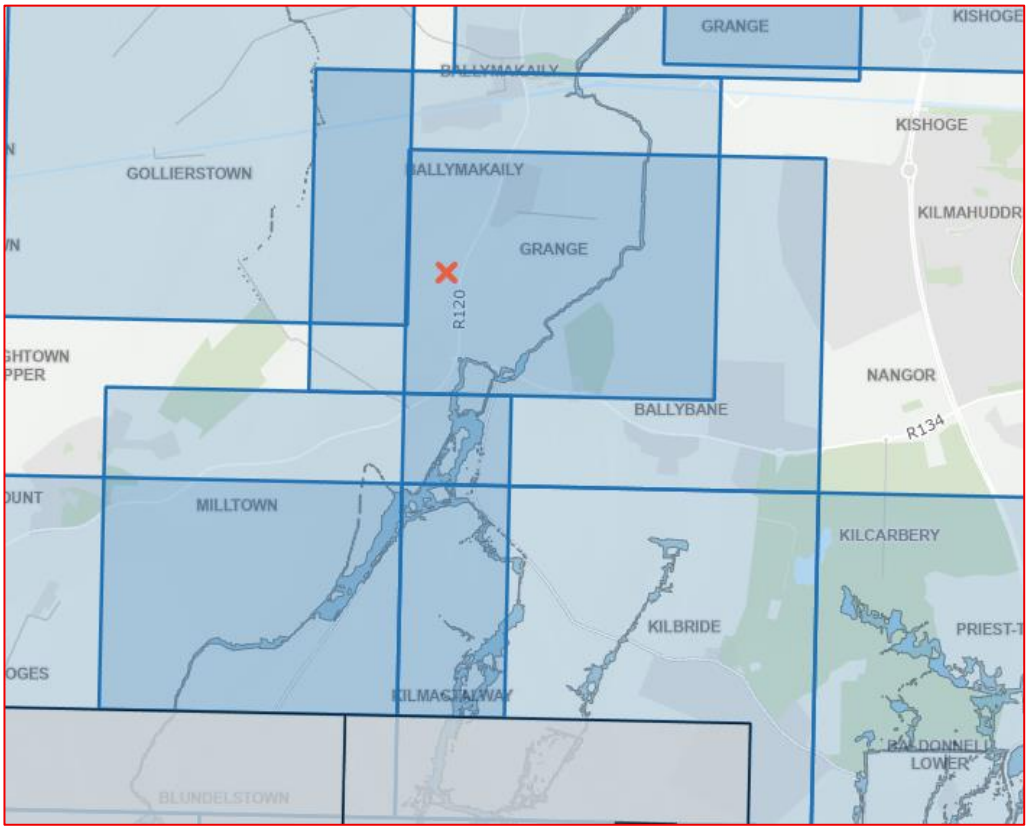


Fig 6.2 Extract from Flood Info indicating fluvial tile in the proposed area, site location marked by red X.

6.3 Downstream Impact

As it is proposed to minimize impermeable areas and to dispose of Surface Water on site with Soakaway system, there is no anticipated downstream impact associated with the proposed development.

7 Conclusion

All existing available information has been reviewed in preparation of this flood risk assessment. The CFREWS flood zoning maps published by the Office of Public Works (OPW) indicate that the development will not be affected by a 1-in-1000 year flood event. We are therefore satisfied that the proposals to develop this site properly achieve full compliance with the requirements of **The Planning System and Flood Management Guidelines** as published by the Department of Environment, Heritage and Local Government in November 2009.

Alby Sara Mathew MIEI
16/01/2026

8 Appendix 1 – Area Flood History Map from Floodmaps.ie

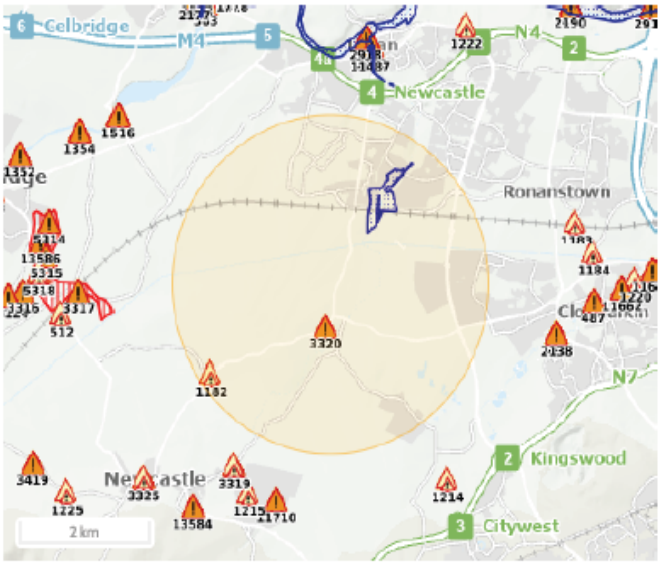
Past Flood Event Local Area Summary Report

OPW

Report Produced: 24/11/2025 10:44

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

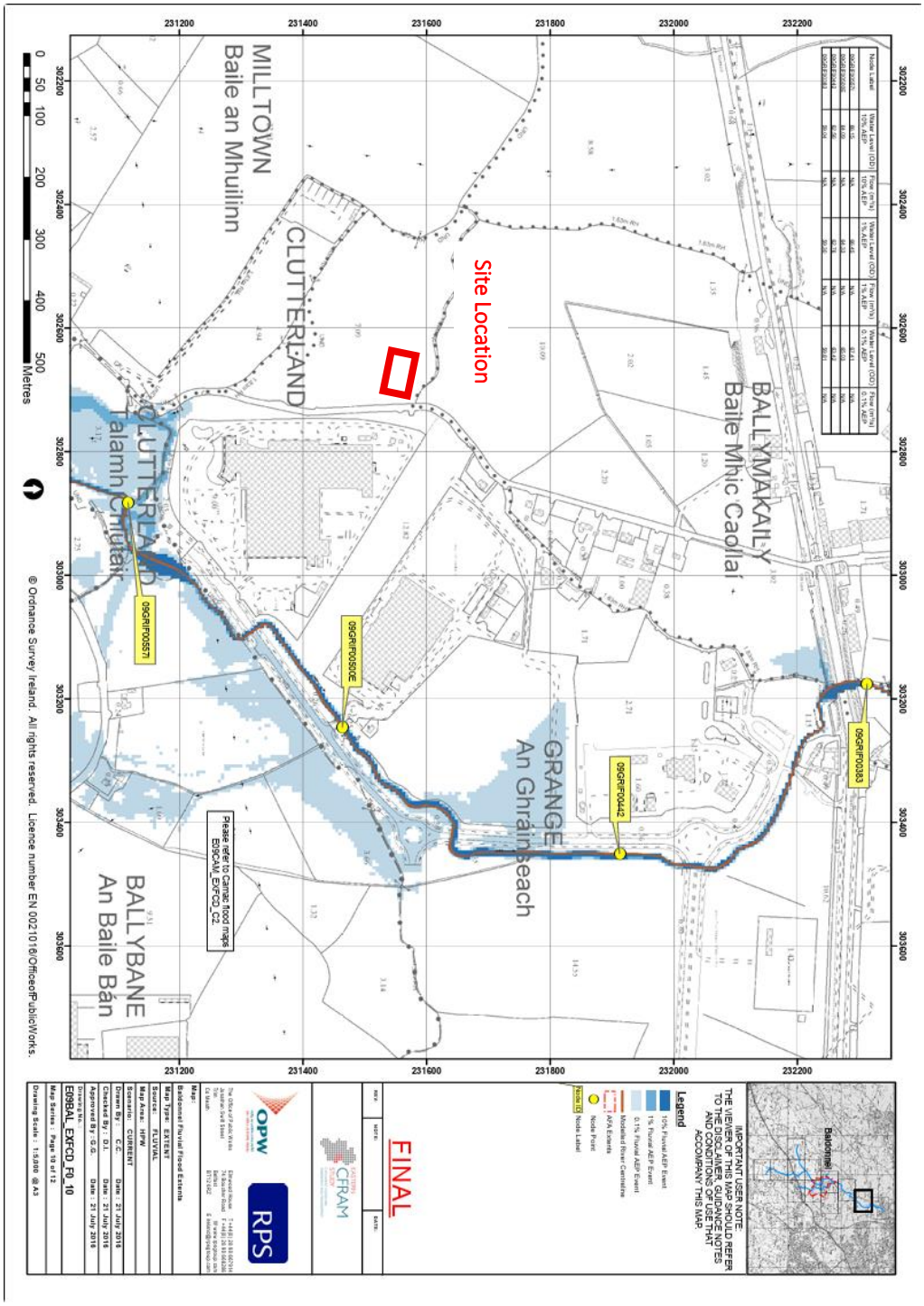
- Single Flood Event
- Recurring Flood Event
- Past Flood Event Extents
- Drainage Districts Benefited Lands*
- Land Commission Benefited Lands*
- Arterial Drainage Schemes Benefited Lands*

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

3 Results

	Name (Flood_ID)	Start Date	Event Location
1.	Peamount R134 R120 junction Nov 2000 (ID-3320)	05/11/2000	Approximate Point
	Additional Information: Reports (1) Press Archive (1)		
2.	Griffeen November 2000 (ID-1237)	05/11/2000	Area
	Additional Information: Reports (16) Press Archive (6)		
3.	Peamount Road Recurring (ID-1182)	n/a	Approximate Point
	Additional Information: Reports (2) Press Archive (1)		

9 Appendix 2 – CFRAM Model: 0.1%, 1% & 10% Probability Flood Events



10 Appendix 3 – CFRAM Model: Flood Depths For Low Risk Events