



Magee Barracks, Kildare

Planning Application

Flood Risk Assessment

March 2018

GARLAND
Concepts Realised

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Description of change	Originator	Rev	Approval	Date
Initial Release	SR	1st	KR	14.7.17
Final Release	SR	2nd	KR	21.03.18

1. INTRODUCTION

1.1. Background

GARLAND Consulting Engineers has prepared this Site Specific Flood Risk Assessment (FRA) to demonstrate that the proposal to develop the site of the former Magee Barracks in Kildare Town for housing and commercial uses, is in full compliance with the requirements of “The Planning System & Flood Management Guidelines” published by the Department of Environment, Heritage and Local Government in November 2009.

1.2. Flood Risk Management Guidelines

“The Planning System and Flood Risk Management Guidelines” (hereafter referred to as FRM Guidelines) was published by the government in November 2009. The core principle of the guidelines is to adopt a risk based sequential approach to managing flood risk and to avoid new development in areas that are at risk. The guidelines sets out the following description of flood risk zones;

Flood Zone A (High Probability)

- Subject to flooding in the 1 in 100 year return period storm event – rivers;
- Subject to flooding in the 1 in 200 for year return period event – coastal/ tidal areas.

Flood Zone B (Moderate Probability)

- Subject to flooding in the 1 in 1000 year return period storm event – rivers;
- Subject to flooding in the 1 in 1000 for year return period event – coastal/ tidal areas.

Flood Zone C (Low Probability)

- Subject to flooding only for events storm greater than the 1 in 1000 year return period.

The guidelines set out the different types of development appropriate to each zone, as shown in Table 1.1. Housing is considered highly vulnerable development while commercial uses are considered less vulnerable development and therefore is considered “Appropriate” for location in Flood Zone C without the need for a justification test.

	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 1.1 – Development in Flood Zones

Exceptions to the restriction of development are provided for through the use of the Justification Test as noted in the Table 1.1, whereby the planning need and the sustainable management of flood risk must be demonstrated for a new development. This recognises that there is need for new development in existing towns and urban centres that lie within flood risk zones and that the avoidance of all new development in these areas would be unsustainable.

2. REVIEW OF POTENTIAL FLOOD RISK

2.1. Data Sources

In the case of this development, we have reviewed the main sources of potential flood risk to determine the Flood Risk Zoning applicable to this development. The site extent reviewed as part of this flood risk assessment is shown in Figure 2.1, but note that this not necessarily reflect the red line boundary for the planning application. All potential flood risks and sources of flood water have been considered. In establishing extent of the flood risk, a number of sources of information have been considered, including;

- The OPW Flood Hazard Mapping website,
- The OPW CFRAMS Study and Flood Risk Mapping;
- The Kildare County Development Plan 2017-2023 Strategic Flood Risk Assessment Report;
- Office of Public Works (OPW) Preliminary Ground Water Flood Hazard Map for Ireland (2010);
- Local and historical information, including 6” (refer to Figure 2.2) and 25” mapping for the site.



Figure 2.1 – Aerial View of Former Magee Barracks Site subject to this FRA

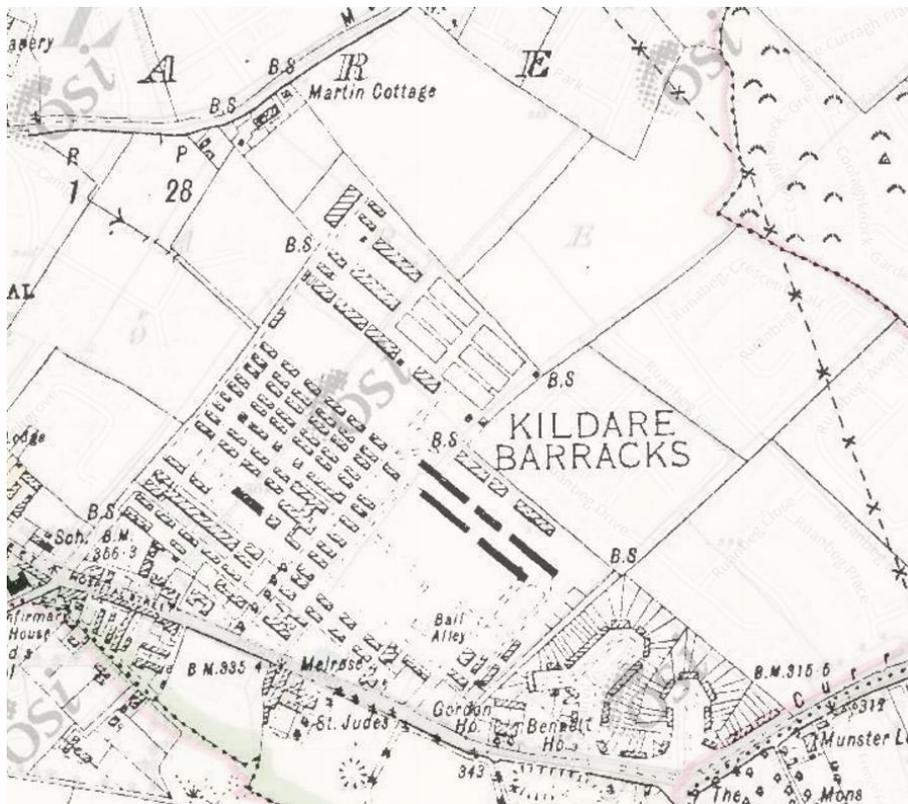


Figure 2.2 – Historical 6" Cassini Map (1837-1842)

2.2. Fluvial Flood Risk

Fluvial Flooding is the result of a watercourse (river, stream etc.) exceeding its capacity and excess water spilling out onto the adjacent floodplain. Figure 2.1 from the Kildare County Development Plan 2017-2023 Strategic Flood Risk Assessment Report below indicates the watercourses in the county. In Kildare town and surrounds, there are no watercourses identified. The nearest channels, tributaries of the River Barrow, are located to the south of the M7 Motorway.

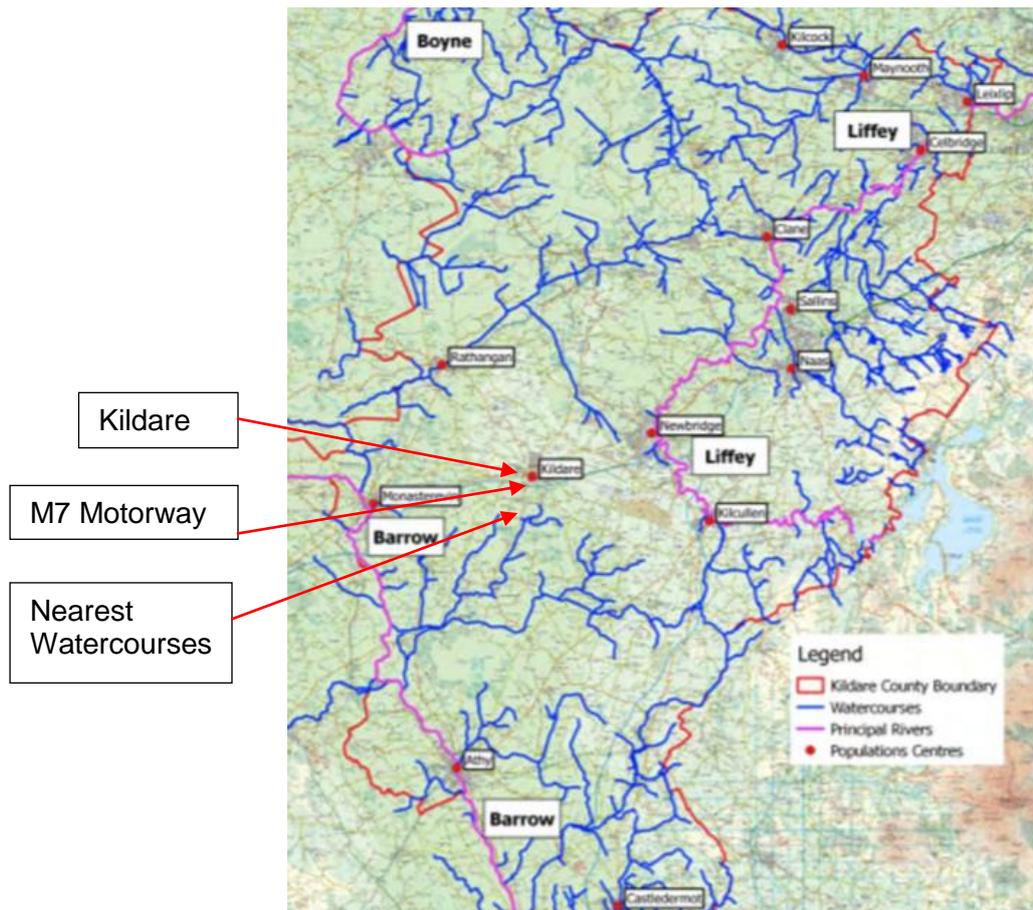


Figure 2.1 – Watercourses in Kildare County

Due to the absence of watercourses, the OPW CFRAMS study did not consider the town an area of fluvial flood risk and no detailed CFRAMS flood risk mapping were therefore prepared for the town. The preliminary OPW flood risk mapping for the town confirms this, with an extract from the relevant map provided in Figure 2.2 overleaf. In addition to this, the OPW Flood Hazard Mapping has no records of flooding at this site.

We are therefore fully satisfied that the site of the proposed development is not located in a fluvial flood plain and can be considered to be located in Flood Zone C (low risk) as it pertains to fluvial flooding.

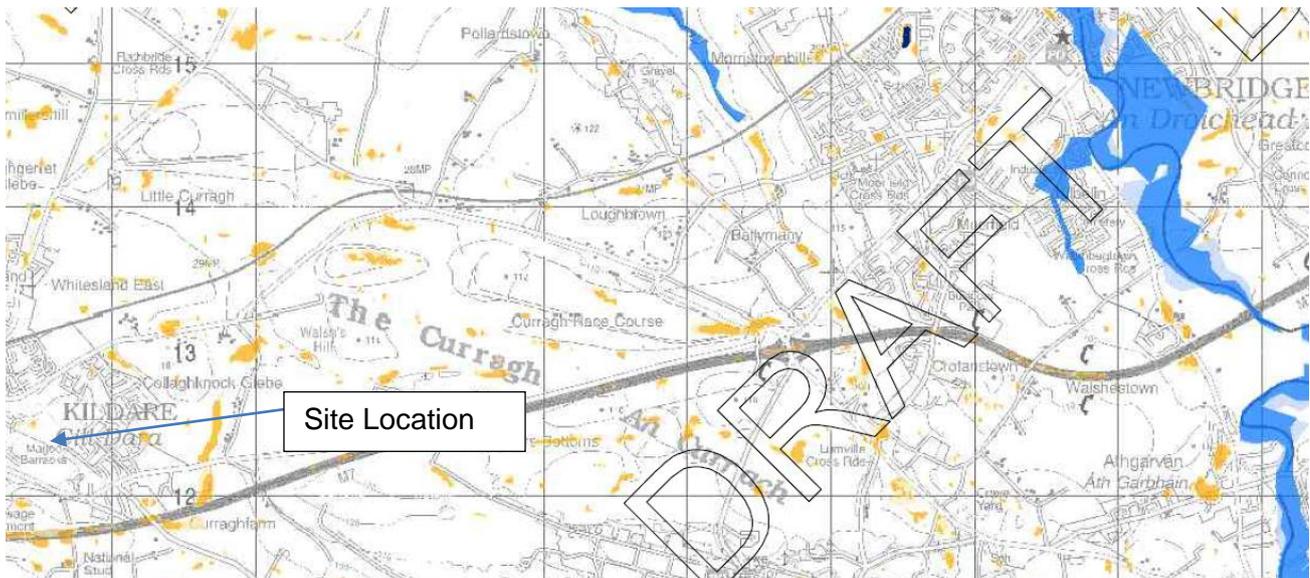


Figure 2.2 OPW Preliminary Flood Risk Mapping

Legend:

Flood Extents

- Fluvial - Indicative 1% AEP (100-yr) Event
- Fluvial - Extreme Event
- Coastal - Indicative 0.5% AEP (200-yr) Even
- Coastal - Extreme Event
- Pluvial - Indicative 1% AEP (100-yr) Event
- Pluvial - Extreme Event
- Groundwater Flood Extents
- Lakes / Turloughs

PFRA Outcomes

- ✱ Probable Area for Further Assessment
- ✱ Possible Area for Further Assessment

Office of Public Works
Jonathon Swift Street
Trim
Co Meath
Ireland



Project :
PRELIMINARY FLOOD RISK ASSESSMENT (PFRA)

Map :
PFRA Indicative extents and outcomes
- Draft for Consultation

Figure By : PJW	Date : July 2011
Checked By : MA	Date : July 2011

Figure No. : 2019 / MAP / 219 / A	Revision 0
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Drawing Scale : 1:50,000 Plot Scale : 1:1 @ A3

2.3. Pluvial/ Storm Water Flood Risk

Pluvial flooding is the result of rainfall-generated overland flows which arise before run-off enters a watercourse or sewer (i.e. storm flows). Pluvial flood risk at this site will be addressed by the provision of a sustainable urban drainage system (SUDS) that will collect and discharge storm water to ground, with overflows to the adjacent public storm system. This SUDS system has been designed in accordance with the Greater Dublin Strategic Drainage Study (GDSDS) and CIRIA SUDS Manual. The design of the SUDS system is addressed in the accompanying engineering services report. Based on the provision of a SUDS system designed to the relevant standards, the site can be considered to be in Flood Zone C (low risk) as it pertains to pluvial flooding.

2.4. Coastal/ Tidal Flood Risk

Coastal/Tidal Flooding is the result of a high tide or a high tide combined with a storm surge which results in inundation of the floodplain. Kildare is not located on the coast or on the tidal reach of a river so the site is not at risk of coastal flooding.

2.5. Groundwater Flood Risk

Groundwater flooding occurs as a result of water rising up from the underlying rocks or from groundwater flowing from abnormal springs. This type of flooding tends to occur after very long periods of sustained high rainfall and typically manifests itself as winter lakes or turloughs. The conclusion of the Kildare County Development Plan 2017-2023 Strategic Flood Risk Assessment Report is that “*ground water flooding is not a significant risk for Kildare*” but notes that it should be examined at detailed FRA level “*particularly if the development includes proposals for basements*”. For this site, our review of hydro-geological mapping and the Office of Public Works (OPW) Preliminary Ground Water Flood Hazard Map for Ireland (2010) has determined that groundwater flooding is not a key risk at this site. We therefore note that the site can be considered to be in Flood Zone C (low risk) as it pertains to ground water flooding.

3. CONCLUSION

All existing information has been reviewed regarding flood risk in the location of the proposed development. We are fully satisfied, based on the available information, that the site of this proposed development is located in Flood Zone C (low risk) for all sources of flood risk. The proposals for housing and commercial development on this site therefore achieve full compliance with the requirements of “The Planning System & Flood Management Guidelines” published by the Department of Environment, Heritage and Local Government in November 2009.



Signed:

SARAH RYAN
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CHARTERED WATER AND ENVIRONMENTAL MANAGER

Date: 14th March 2018

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