2021/21 Rathcoole

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Proposed Development
Main Street, Rathcoole, Co. Dublin

Flood Risk Assessment

Status	Author	Approved by	Issue Date
Draft	AG	AG	01/11/2021
Planning	AG	AG	17/12/2021

Contents

1. Introduction

EDPM Ltd was appointed by Lorat Trading Ltd to prepare this Flood Risk Assessment report. This report will support the planning application for a residential development at Main Street, Rathcoole, Co.Dublin.

The site is located in the centre of Rathcoole, it has a long narrow aspect with a north-south orientation. It is currently used as a commercial premises with customer parking to the rear. The site is in a mature urban setting with existing buildings and infrastructure on adjacent sites.

The proposed development will consist of the demolition of some existing structures on site and the construction of 2 apartment blocks which will provide for 21 apartments. The development will also comprise of the refurbishments of three existing cottages to provide for 2 additional units.

The existing site is an open brown field site. A significant portion of the site will be hardsurfaced and this will be controlled by surface water attenuation (see separate report). The development will not obstruct important flow paths.

The development will be considered a minor proposal as per clause 5.28 of *'The Planning System and Flood Risk Management, Guidelines for Planning Authorities'*. The flood risk assessment is carried out in accordance with this publication and the stages involved with such an assessment are listed below:

- Stage 1 : Flood Risk Identification
- Stage 2 : Initial Flood Risk Assessment
- Stage 3 : Detailed Flood Risk Assessment

Stage 1 identifies whether there are any flooding or surface water management issues on the site and identifies whether a flood risk assessment is required.

The components to be considered in the identification and assessment of flood risk are as per Table A1 to the technical appendix of the above mentioned guidelines:

- Tidal
- Fluvial
- Surface Water
- Ground Water
- Human/Mechanical error

Each component will be investigation from a Source, Pathway and Receptor point of view, followed by an assessment of the likelihood of a flood occurring and the possible consequences.

From the consideration of the likelihoods and the possible consequences, a risk is evaluated. Should the presence of such a risk exist, mitigation measures will be explored and a residual risk presented.

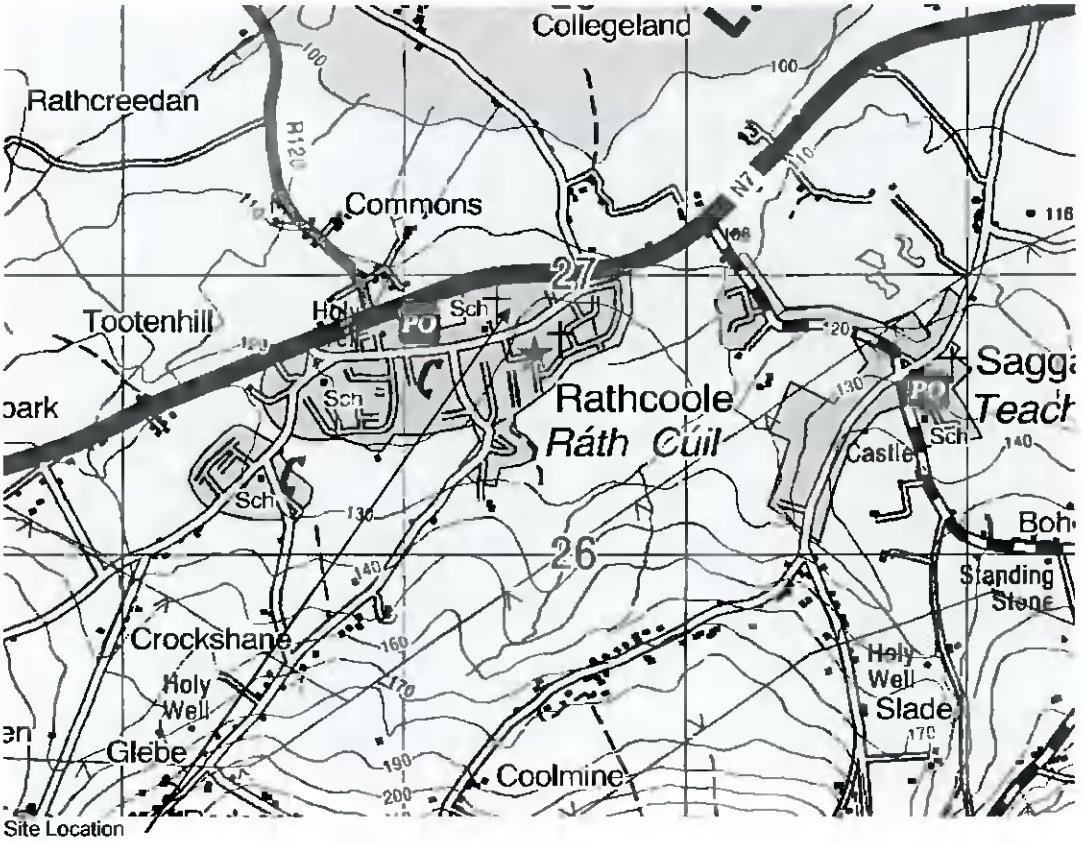
2. Tidal

The site is approximately 16km from the coast and c.120m OD Malin.

Given that the site is located inland and the level difference between the site and the coastal area, a pathway does not exist between the source and receptor and therefore a risk from tidal flooding is extremely low and therefore no flood mitigation measures need to be implemented.

3. Fluvial

There are no significant water courses within the general area of the site. There are a number of open ditches and minor courses within 0.5km of the site, see the extract from Discovery Mapping below:



Site Location

The OPW records for predictive and historic flood maps and benefiting maps are shown below. No history of flooding has been recorded on this site.

Past Flood Event Local Area Summary Report

OPW

Report Produced: 16/8/2021 12:01

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

9 Results

	Name (Flood_ID)	Start Date	Event Location
1.	Newcastle Greenoge Recurring (ID-1215)	n/a	Approximate Point
	Additional Information: Reports (2) Press Archive (0)		
2.	Aylmer Road Newcastle recurring (ID-1223)	n/a	Approximate Point
	Additional Information: Reports (2) Press Archive (1)		
3.	Rathcoole Bridge recurring (ID-1224)	n/a	Approximate Point
	Additional Information: Reports (2) Press Archive (4)		
4.	Aylmer Road Newcastle Nov 2000 (ID-3319)	05/11/2000	Approximate Point
	Additional Information: Reports (2) Press Archive (1)		
5.	Flooding at Avoca Road, Saggart on 24th Oct 2011 (ID-11560)	24/10/2011	Exact Point
	Additional Information: Reports (1) Press Archive (0)		
6	Flooding at Fortunestown Lane, Citywest, Co. Dublin on 24th Oct 2011 (ID-11600)	24/10/2011	Approximate Point
	Additional Information: Reports (1) Press Archive (0)		

The above OPW map indicates 8 flood events within 2.5 kilometers of the site (fluvial), the nearest event is to the north of the site. ID-1224, which occurred on the N7. The level of the N7 to the north of the site is c.113.30m OD, the lowest level of the site at its northern boundary is c.116.00m OD.

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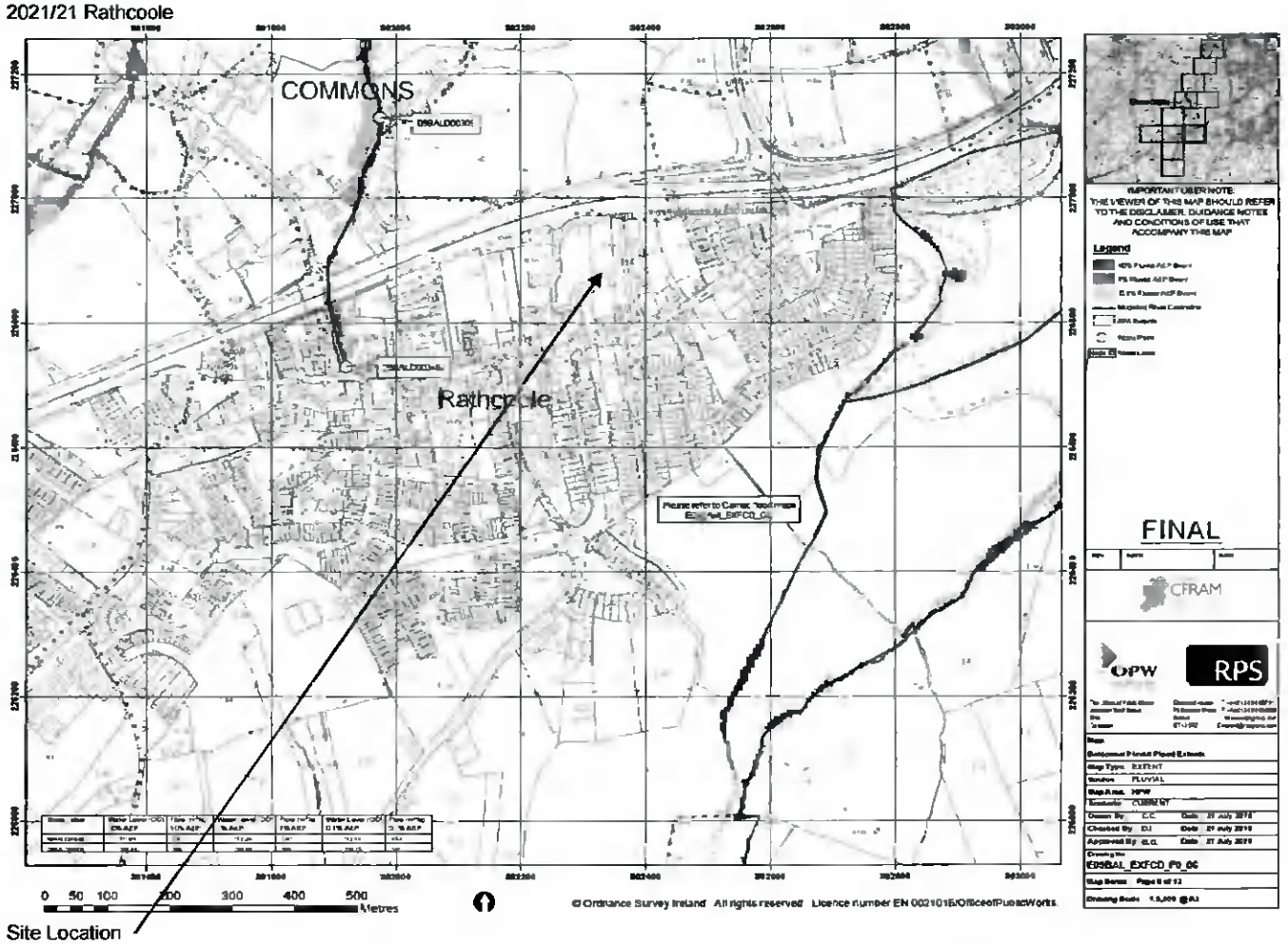

The above CFRAM map (from the OPW flood mapping) shows no fluvial events on or within the vicinity of the site.

Given that the OPW records show no site flooding, the risk of fluvial flooding is extremely low. Therefore no flood mitigation measures need to be implemented.

4. Surface Water

As the site is a brown field site and in partial use, it is assumed there is some existing surface water discharge from the site. This is most likely from existing hardsurfaces of the existing buildings, some of which may discharge into the existing public system. The existing car park to the rear of the site is finished with compacted hardcore and has no controlled collection system. Further, due to the topography, it is assumed that there is no significant run-off onto the site from adjacent lands.

As part of this development, it is proposed to install a new separate drainage system including attenuation surface water storage (see the Design of Site Development Works report which details these proposals).

The pathway for surface water discharge is a proposed surface water network to a connection point on the public road to the south of the site. This network will collect all surface water run-off for the development (note: there maybe some roof areas on the existing public house fronting onto the Main Street that have existing connections to the public surface water drain).

The development is c.40m from the point if discharge and the proposed floor level is c.2.4m above the invert level of the outlet. There is no history of the site flooding from a surcharge of the existing public drain. The attenuation storage could act as flood storage in the event of a blockage.

The development does not obstruct existing flood plains or flood routes.

There is a low risk anticipated to the development with respect to surface water flooding.

5. Ground Water

No trial holes have been excavated on site. Trial pits and testing on the adjacent site immediately to the west noted no ground water at a depth of 1.9m below existing ground level. This would imply that the development is not susceptible to flooding from ground water.

The bedrock is calcareous greywacke siltstone and shale. This has the potential to produce relatively fast ground water flows. The site boarders a poor and locally important aquifer which is moderately productive. The vulnerability to the ground water is extreme. It is extremely unlikely that ground water would develop to the surface after a period of prolonged rainfall.

The new building will sit on pad and strip foundations, on a suitable formation, and will not intersect with the ground water.

6. Human/Mechanical Error

The development will be served by a gravity surface water drainage system connected to an existing surface water drainage network. It is not proposed to construct any mechanical devices to assist the drainage.

It would be the site owners responsibility to maintain the integrity of the drainage system.

Overland flood routes away from the development exist in the event of any blockages caused by human error.

7. Conclusions and Recommendations

The development has been analyzed for risks from flooding from tidal, fluvial, surface water, ground water and mechanical system sources. Through design and appropriate measures the risks and consequences of flooding have been mitigated, these are summarized in the table below

Source	Pathway	Receptor	Likelihood	Consequence	Risk	Mitigation Measure	Residual Risk
Tidal	None	People, Development	Extremely Remote	None	Very Low	None	Very Low
Fluvial	Over bank	People, Development	Very Remote	None	Low	None	Low
Surface Water	Drainage Network	People, Development	Remote	Site runoff enters drainage network at alternative location off site	Low	Design levels to influence runoff flow	Low
Ground Water	None	People, Development	Very Remote	None	None	None	Very Low
Human/ Mechanical Error	None	People, Development	Very Remote	Site runoff enters drainage network at alternative location off site	Very Low	Design levels to influence runoff flow	Low

It has been shown that the design of the proposed development has considered the various sources of flooding and the Stage 1 flood risk identification concludes that further flood risk assessments are not required.