BARRETT **MAHONY**
CIVIL & STRUCTURAL
CONSULTING ENGINEERS

Site Specific Flood Risk Assessment

Project:
Carlisle Residential Development,
Kimmage Road West, Kimmage,
Dublin 12

Job No.
21.221

DOCUMENT CONTROL

Project: Carlisle Residential Development, Kimmage Road West, Kimmage, Dublin 12

Project No: 21.221

Document Title: Site Specific Flood Risk Assessment

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DOCUMENT STATUS

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3	04.02.2022	Issue 3	KB	MH	MH
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5	25.02.2022	Issue 5	KB	MH	MH
6	08.03.2022	Issue 6	KB	MH	MH
7	07.11.2022	Issue 7	MS	MH	MH

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APPENDICES

1. INTRODUCTION

1.1 GENERAL DESCRIPTION

Planning permission is being sought, '1 Terenure Land Ltd', for a proposed residential development at Carlisle Site, Kimmage Road West, Kimmage, Dublin 12.

The proposed Large Scale Residential Development will consist of the construction of 5 no. blocks of development and will range in height up to 6 storeys. This will provide 208 no. residential units (104 no. 1 beds and 104 no. 2 beds) all of which will have associated private balconies/terraces. Car, cycle and motorbike parking will be located at undercroft and surface level. Vehicular/pedestrian/cyclist access is provided off Kimmage Road West via the existing Ben Dunne Gym access route. All associated site development works, open spaces, landscaping, boundary treatments, plant areas, waste management areas, and services (including ESB substations) shall be provided. A full description is set out in the statutory notices included with this application.

This report outlines the findings of the Site Specific Flood Risk Assessment (SSFRA) carried out for the proposed development.

The site consists of approximately 1.25ha net site area and is bounded by residential dwellings to the north, east and west with Ben Dunne gym to the southwest. The site is currently greenfield. Refer Figure 1.1 and Site Plan Layout drawing in Appendix 1 for a satellite and a plan view of the site.

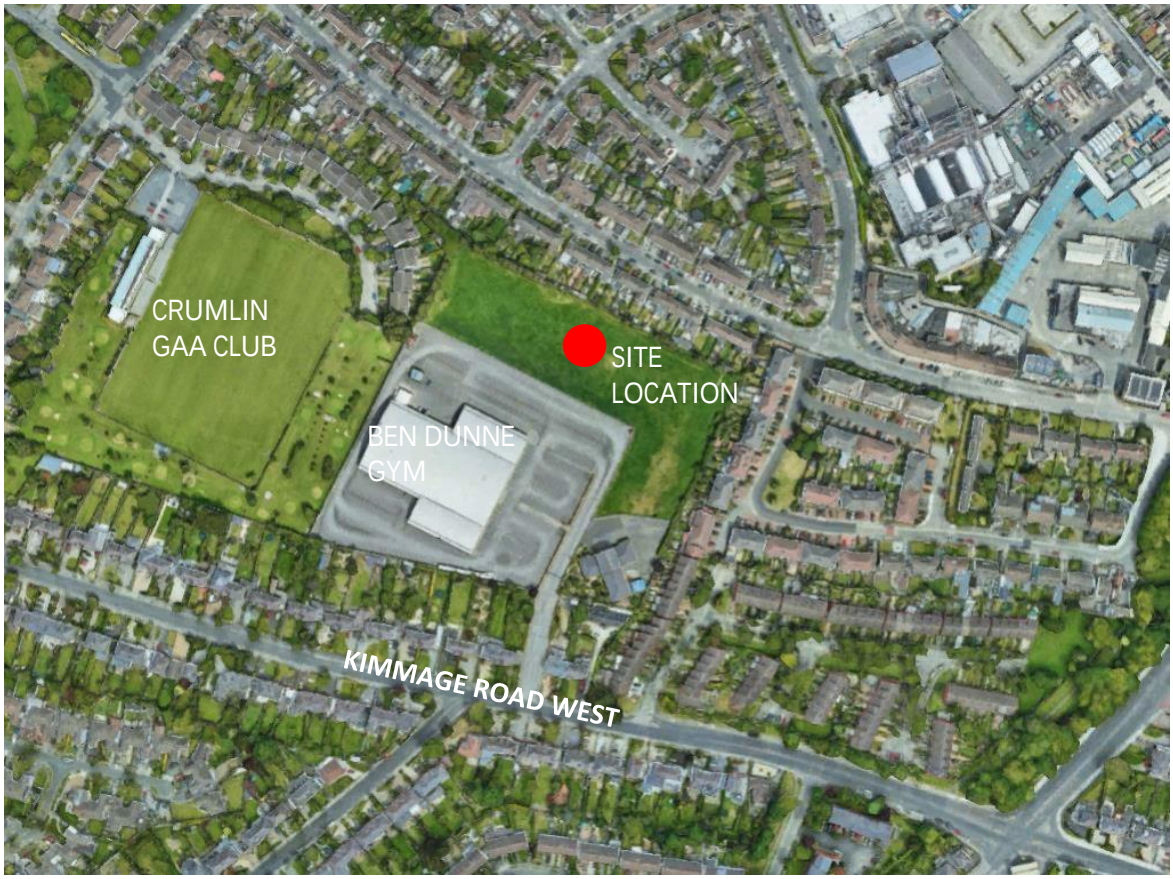

Figure 1.1: Site Location

1.2 SCOPE OF THIS REPORT

This report outlines the findings of the SSFRA (site specific flood risk assessment) carried out for the proposed residential development, and takes cognisance of the following relevant guidelines and policies:

- Department of the Environment Heritage and Local Government (DEHLG) and the Office of Public Works (OPW) Guidelines for Planning November 2009 on *'The Planning System and Flood Risk Management Guidelines for Planning Authorities'.*
- The Planning and Development Act 2000.

The stages involved in the assessment of flood risk are listed in the guidelines as follows:

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

The OPW and DEHLG's publication also outline a Sequential Approach for determining whether a particular development is appropriate for a specified location in terms of flood risk. The categorisation of the subject site in terms of the OPW and DEHLG's sequential approach is further outlined in Section 3.

Permission was granted, under ABP 313043 on the 22/09/2022, for an SHD on the subject site comprising 208 no. apartment units in 5 no. blocks. The current proposed LRD application provides the same layout and quantum of units as this permitted development. The proposed LRD SSFRA is the same as permitted in the SHD application.

2. STAGE 1: FLOOD RISK IDENTIFICATION

Stage 1 identifies whether there are any flooding or surface water management issues at the subject site location and whether a flood risk assessment is required. This involves review of desk study information available as outlined in the following headings.

Table 2.1 The possible sources of flood water

Source	Pathway	Receptor	Likelihood	Consequence	Risk
Tidal Note	Overtop Breach	Property	Very remote	High	Low
Fluvial Note	Overtop Breach	Property	Remote	High	Medium
Groundwater	Rising groundwater levels	Property	Very remote	Medium	Low
Pluvial Surface water	Overflow / Blockage	Property	Possible	Medium	Medium

2.1 HISTORICAL FLOODING

A review of the OPW Historical Flood Maps online was carried out and indicates no flooding events in the immediate vicinity of the site.

On 10th November 2000 flooding occurred due to significant rainfall in the Dublin Area and throughout the country. Rainfall in the South City was recorded as 135mm over 24 hours while gardens flooded along the Poddle Park, located approximately 300m to the east of the subject site.

Flooding occurred on 22nd April 2012 at the junction of Terenure Road and Kimmage Road approximately 300m to the southeast of the subject site. Records show that the source of the flood waters was the River Poddle, which was overtopped and flooding occurred at the culvert which went under the road.

Flooding occurred on Fortfield Road on 8th December 1954 approximately 400m to the south of the site. The Local Authority who provided this Flood Information item notes that a number of defence assets were put in place since this event.

Based on available and recorded information as outlined above, the subject site is considered not to have been subject to flooding in recent history.

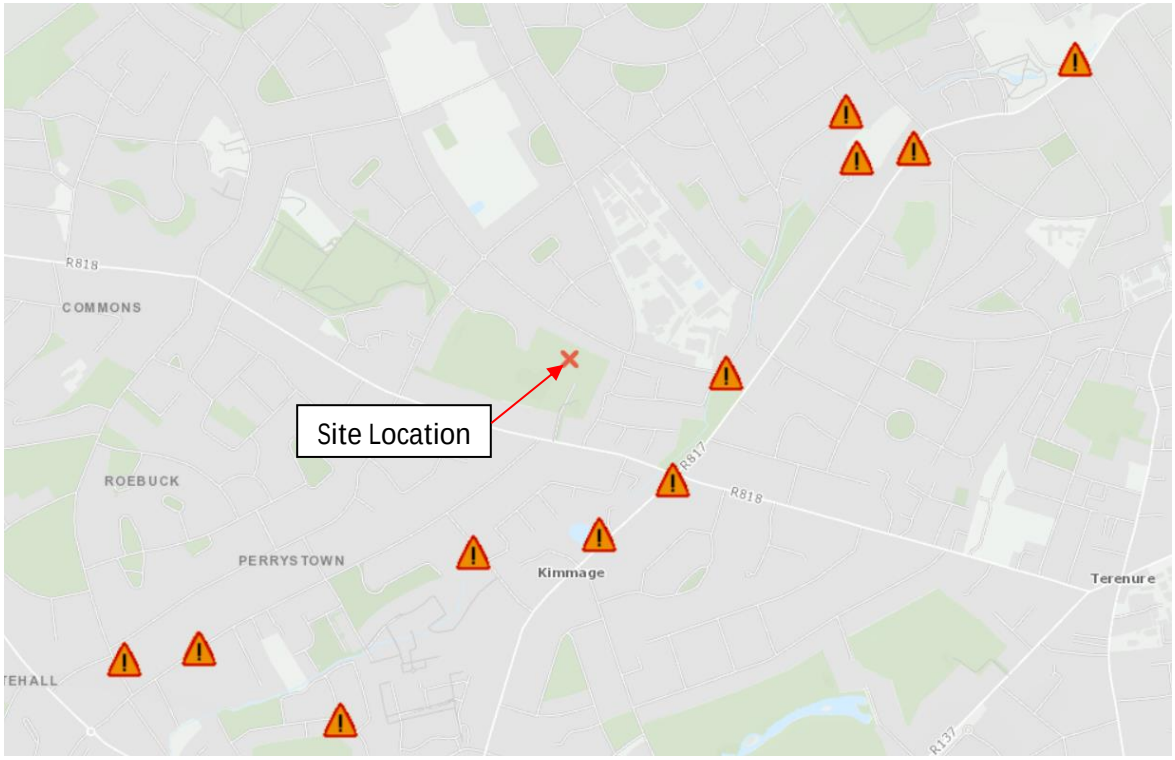

Figure 2.1 Recorded Past Flood Events (Source: OPW – www.floodinfo.ie)

2.2 COASTAL FLOODING

Coastal flooding occurs when sea levels along the coast of estuaries exceed neighbouring land levels or overcome coastal defences where these exist. A review of the OPW Tidal Flood Extents Mapping was carried out and indicates no coastal flooding at the subject site for the following flood event probabilities:

- 10% Tidal AEP (Annual Exceedance Probabilities) or 1 in 10 year return period.
- 0.5% Tidal AEP or 1 in 200 year return period.
- 0.1% Tidal AEP or 1 in 1000 year return period.

Therefore, the risk of tidal flooding is considered low as the subject site lies outside the 0.1% AEP.

Please refer to Figure 2.2 for OPW Tidal Flood Extents Mapping.

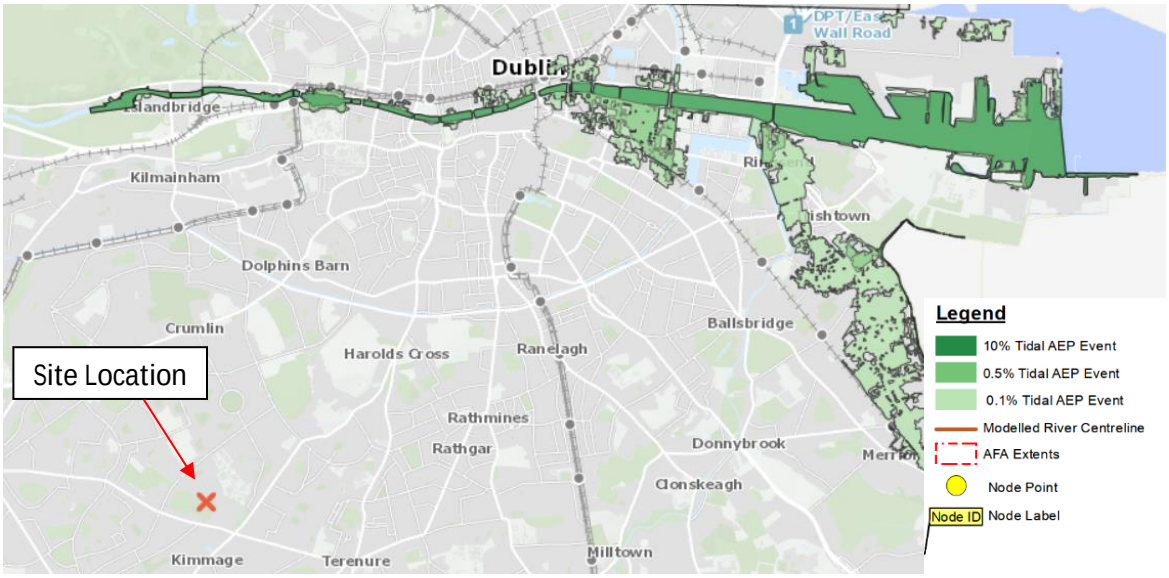

Figure 2.2 Tidal Flood Extends (Source: OPW Eastern CFRAM Study)

2.3 FLUVIAL FLOODING

Fluvial flooding occurs when rivers and streams break their banks and water flows out onto the adjacent low-lying areas. A review of the OPW Fluvial Flood Extents Mapping was carried out and indicates low and medium probability fluvial flooding at the eastern boundary of the subject site for the following flood event probabilities:

- 10% Fluvial AEP (Annual Exceedance Probabilities) or 1 in 10 year return period.
- 1% Fluvial AEP or 1 in 200 year return period.
- 0.1% Fluvial AEP or 1 in 1000 year return period.

The site is located approximately 300m to the west of the River Poddle. A review of the OPW Flood Maps database does not indicate any history of flood events at or near the subject site.

Flood risk modelling conducted on behalf of the OPW under the Eastern CFRAM (Catchment Flood Risk Assessment and Management) Study indicates that the subject site is within an area with a fluvial flood event AEP of less than 1%. The risk of fluvial flooding within the site is therefore considered low. The OPW Fluvial Flood Extents Maps near the subject site is included in Appendix 2 for further information.

Please refer to Figure 2.3 for OPW Fluvial Flood Extents Mapping in the vicinity of the site.

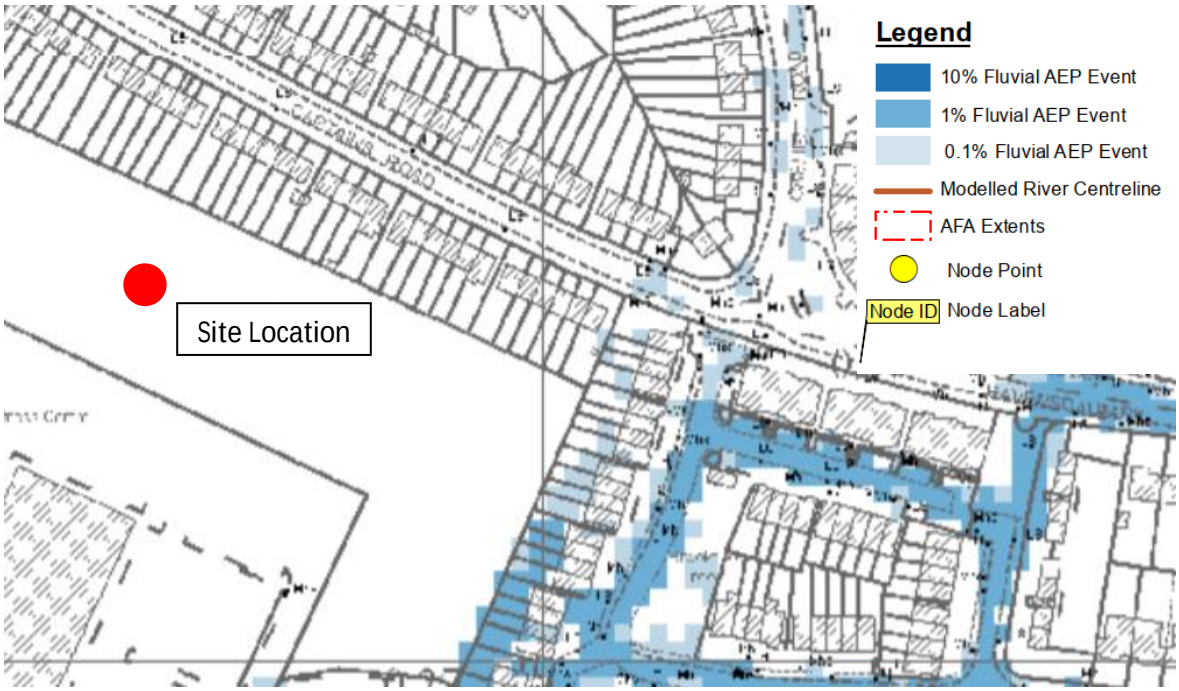

Figure 2.3 Fluvial Flood Extents (Source: OPW Eastern CFRAM Study)

2.4 GROUND WATER

Groundwater flooding occurs when the level of water stored in the ground rises as a result of prolonged rainfall, to meet the ground surface and flows out over.

Ground investigations have been undertaken on the site and ground water seepage was encountered at depths varying from 1.9m to 2.9m BGL. Refer to Figure 2.4 below. The ground water levels will be monitored over the next 12 months.

The locations of the site investigation exploration points are indicated in Appendix 3.

GI Ref	Water Level (mbgl)	Comments
BH01	2.90	Slight seepage
BH04	2.60	
BH05	2.80	Seepage at 2.80
CBR01	2.00	Slow seepage at 2.00m
TP01	2.40	Fast seepage at 2.40m
TP04	1.95	Slow seepage at 1.95m
TP06	2.90	Fast seepage at 2.90m
WM02	4.00	

Figure 2.4 Summary of Ground Water Strikes

The risk of flooding due to ground water ingress to the proposed development is considered low.

A review of the groundwater vulnerability data from the Geological Survey Ireland (GSI) website was also carried out and the model indicates a moderate risk of groundwater contamination, for the vast majority of the site. The map identifies how susceptible areas are to groundwater contamination.

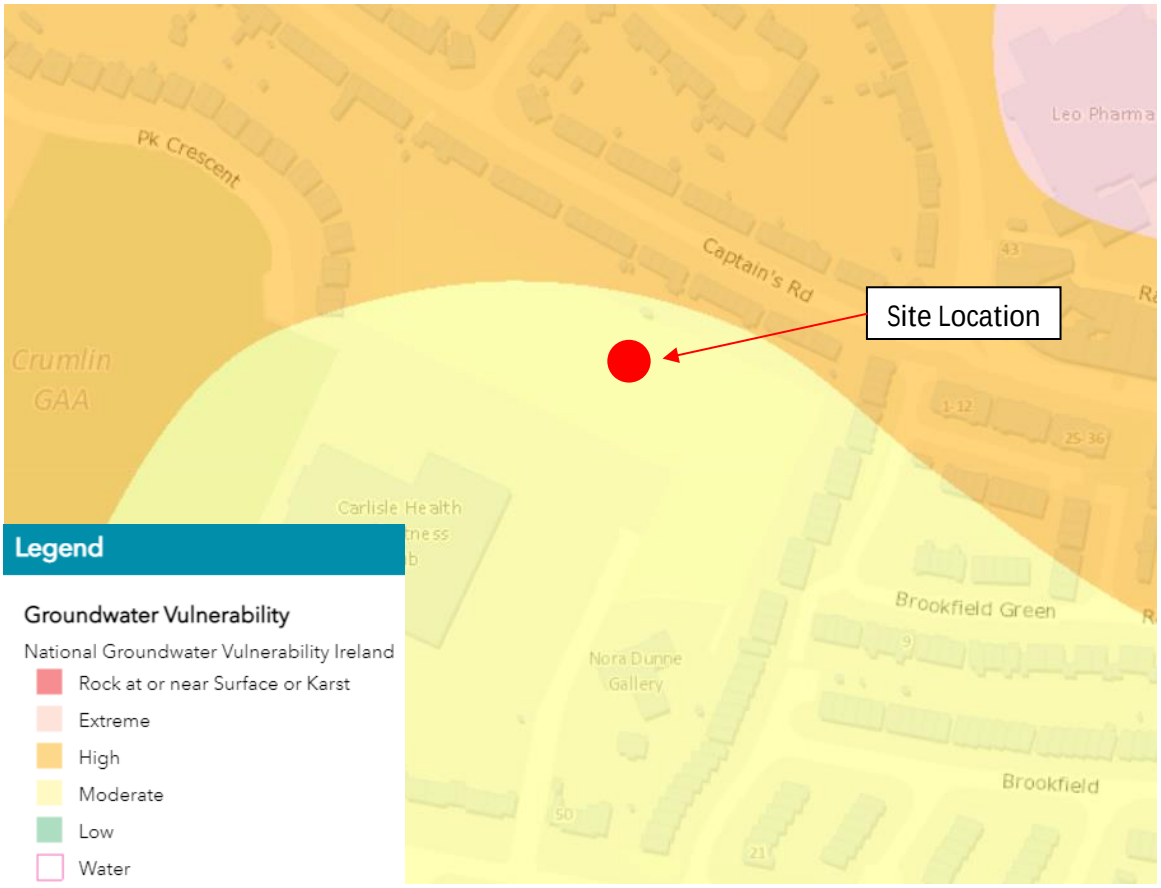

Figure 2.5 Groundwater Vulnerability (Source: GSI Data Viewer Map)

2.5 PLUVIAL FLOODING

Pluvial flooding occurs when the amount of rainfall exceeds the capacity of urban surface water drainage systems or the ground to absorb it. A review of the available literature including the DCC FloodResilienCity (FRC) project was carried out and indicates some pluvial flooding in the site. Note, these maps are 'predictive' flood maps showing areas predicted to be inundated during a theoretical or 'design' flood event with an estimated probability of occurrence, rather than information for actual floods that have occurred in the past, which is presented on 'historical' flood maps.

The FRC project considers the subject site to be low to medium risk of pluvial flooding as shown in figure 2.6 below.

A new surface water system is proposed to collect rainwater from all impervious areas of the proposed development along with green roof areas and landscaping to reduce the developments impact on existing surface water drainage systems. All stormwater will be attenuated and discharged at a controlled rate. The risk of pluvial flooding is considered low to medium, due to the proposed measures.

Figure 2.6 Pluvial Flood Extents (Source: OPW Eastern CFRAM Study)

2.6 CLIMATE CHANGE

All new developments are required to take climate change into consideration when assessing the flood risk of a site. When designing for extreme rainfall events an allowance of 20% additional flow should be taken. The system is designed for storms up to and including the 1 in 100 year storm and 20% extra for climate change. Hence the development can be considered to be climate change resilient.

3. STAGE 2: INITIAL FLOOD RISK ASSESSMENT

The purpose of an initial flood risk assessment is to examine flood risk issues highlighted as part of Stage 1 Flood Risk Identification.

Based on available recorded information as outlined in Stage 1, the site is considered to not been subject to flooding in recent history.

The risk of tidal flooding is considered low as the subject site lies outside the 0.1% AEP.

The risk of fluvial flooding is considered low based on the Eastern CFRAM Study.

The risk of flooding due to ground water ingress to the proposed development is considered low.

The risk of pluvial flooding is considered low to medium, due to the site location and proposed measures for the development.

3.1 SEQUENTIAL APPROACH

The sequential approach used in this assessment follows the guidelines from The Planning System and Flood Risk Management Guidelines for Planning Authorities, 2009, see Figure 3.1 for a graphical representation. As outlined in the OPW and DEHLG publication, new developments are divided into three categories which are as follows:

- Highly Vulnerable Development (i.e. power stations, residential)
- Less Vulnerable Development (i.e. retail, leisure)
- Water-compatible Development (i.e. car parking, recreational space)

The proposed residential development comes under the heading of Highly Vulnerable Development.

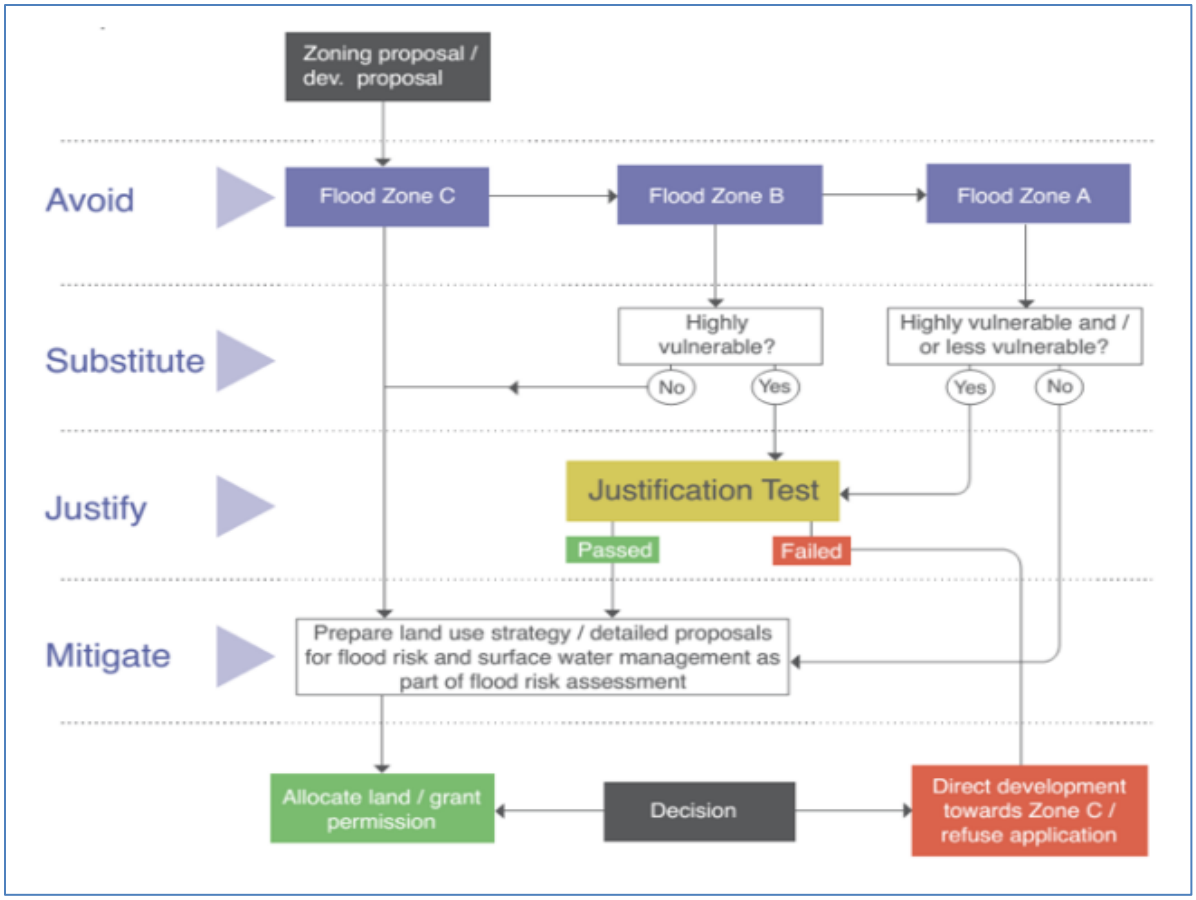

Figure 3.1 Sequential Approach (Source: Guidelines for Planning Authorities, 2009)

Table 3.1 Matrix of vulnerability versus flood zone (Source: Guidelines for Planning Authorities, 2009)

	Flood Zone A	Flood Zone B	Flood Zone C
Highly vulnerable development	Justification Test	Justification Test	Appropriate
Less vulnerable development	Justification Test	Appropriate	Appropriate
Water compatible development	Appropriate	Appropriate	Appropriate

Geographical areas are similarly divided into three categories, based on their risk of river and tidal flooding. The three categories are as follows:

- Flood Zone A – where the probability of flooding from rivers and the sea is highest (greater than 1% or 1 in 100 for river flooding or 0.5% or 1 in 200 for coastal flooding).
- Flood Zone B – where the probability of flooding from rivers and the sea is moderate (between 0.1% or 1 in 1000 and 1% or 1 in 100 for river flooding and between 0.1% or 1 in 1000 and 0.5% or 1 in 200 for coastal flooding).
- Flood Zone C – where the probability of flooding from rivers and the sea is low (less than 0.1% or 1 in 1000 for both river and coastal flooding i.e. all areas which are not within zone A or B).

Based on the flood risk identification in Stage 1, the proposed development falls in Flood Zone C, therefore, a 'Justification Test' and / or Stage 3 Detailed Flood Risk Assessment is not required. The

sequential approach shown recommends mitigation measures for residual risks. In addition, extract from DCC Development Plan 2016-2022 in Figure 3.2 shows the proposed development, the vast majority of which falls in Flood Zone C in agreement with this SSFRA. While some parts of the boundary lies within Flood Zone A and Flood Zone B, no buildings are proposed in these areas and as such we can assume the development falls within Flood Zone C.

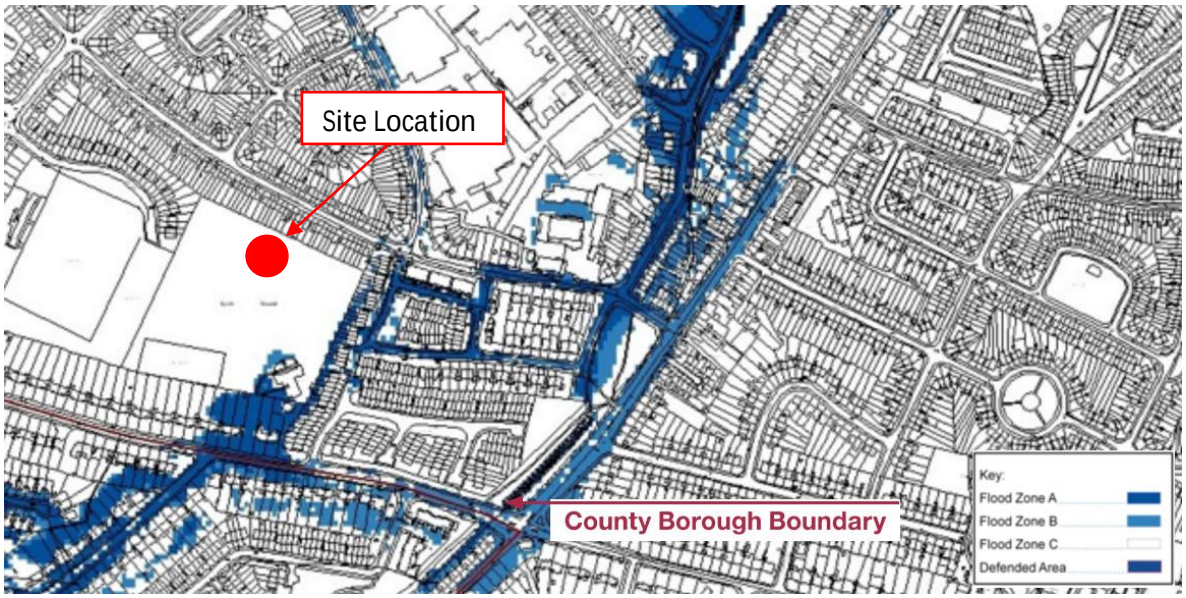

Figure 3.2 Strategic Flood Risk Assessment (Source: Dublin City Development Plan 2016-2022)

4. RESIDUAL FLOOD RISK MANAGEMENT

As highlighted in Section 2, during extreme rainfall events and where the proposed drainage system is blocked, there is a chance that localised ponding will occur. Ensuring that internal finished floor levels are set above the highest external surface levels in the vicinity will allow for any runoff or ponding to be retained on access road and bicycle parking surfaces. This measure during the unlikely event is considered appropriate for the nature of the development.

5. CONCLUSION

This report outlines the findings of the SSFRA carried out for the mixed use, primarily residential development at Carlisle, Kimmage, Dublin 12. This SSFRA was carried out in accordance with the DEHLG guidelines for Planning 2009 and The Planning and Development Act 2000.

Based on available and recorded information, the site has not been subject to flooding in recent history.

The risk of tidal flooding is considered very low as the subject site lies outside the 0.1% AEP.

The risk of fluvial flooding in the area is considered low as the proposed site lies outside the 1% AEP.

The risk of flooding due to ground water ingress to the proposed development is considered low.

The risk of pluvial flooding is considered low, due to the site location and proposed measures for the development.

Based on the flood risk identification in Stage 1, the proposed development falls in Flood Zone C. Therefore, the proposed development is deemed ‘Appropriate’ in accordance with the guidelines of the OPW’s publication.

Appendix 1

Site Plan Layout

DRAWING KEY

TOTAL AMOUNT OF UNITS	**208 UNITS**
1 Bed	104 - 50%
2 Bed	104 - 50%
DUAL ASPECT UNITS	110 (52.9%)
UNITS <10% ABOVE MINIMUM	110 (52.9%)
TOTAL SITE NETT AREA	1.25Ha
TOTAL SITE GROSS AREA	2.34Ha
SITE DENSITY	166.4 UNITS/Ha
TOTAL BUILDING FOOTPRINT	5390m^2
SITE COVERAGE	43.1%
PLOT RATIO	1.63:1
PUBLIC OPEN SPACE c.1261 sqm	10.1% site area
COMMUNAL OPEN SPACE c.1619 sqm	(1248 sqm - required)
CAR PARKING 100 spaces (of which 6 UA spaces)	0.48 spaces/unit

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SUBJECT PROPOSAL BOUNDARY LINE

Notes
1. Copyright Reserved
2. Work to figured dimensions only. Do not scale drawing.
3. The contractor is responsible for checking all levels and dimensions on site and shall refer all discrepancies to the Architect
4. Where appropriate, for details of r.c. structure, or mechanical and electrical details, see Engineers drawings
5. Proprietary items shall be fixed in strict accordance with manufacturers instructions.
6. Sizes of proprietary items shall be checked with manufacturer.
7. The contractor shall be responsible for the coordination of structure, finishes and services.

M:\Project Section - Current\6269 Carlisle Site Terenure\CAD\Drawings\Planning\220208_Planning Pack\03_Proposed Site Layout Plan\Proposed Site Layout Plan.dwg 09/03/2022 17:21:09

Issue Status	
Progress	
Planning Application	■
Fire Cert	
Disability Cert	
Tender	
Construction	
As Built	
Information Only	

No.	Date	Revision	Initials
04	30.09.2021	Issued for Information	VF
05	05.10.2021	Issued for Information	VF
06	08.10.2021	Issued for general revision	VF
07	12/10/21	SHD architectural drawing pack	BKD
08	21/01/22	Issued for general revision	BKD
09	09/02/22	Issued for general revision	BKD
10	14/02/22	Access Road & Landscape updated	BKD
11	24/02/22	Access Road updated	BKD
12	09/03/22	Issued for final revision	BKD

Project: **Carlisle Site, Kimmage Residential Development**

Drawing Title: Proposed Site Layout Plan - Sheet 1/2

Drawing No: 6269-P-003a

Scale	Rev	Drawn	Date
1:500@A0	12	BKD	Oct 21

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e architecture@bkd.ie
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bkdarchitects
BURKE-KENNEDY DOYLE

Appendix 2

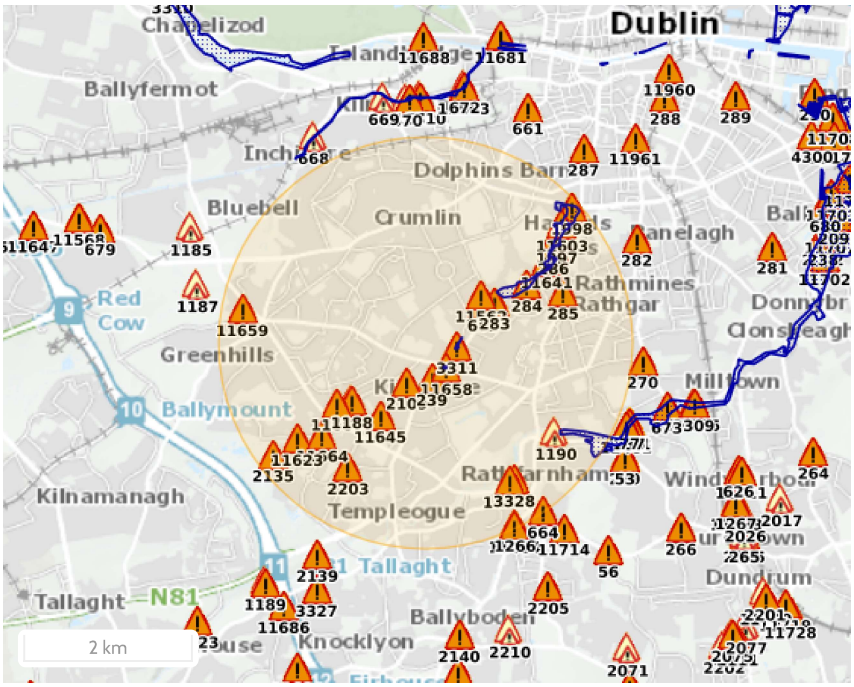
OPW Flood Maps

Past Flood Event Local Area Summary Report

Report Produced: **29/7/2021 15:23**

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*

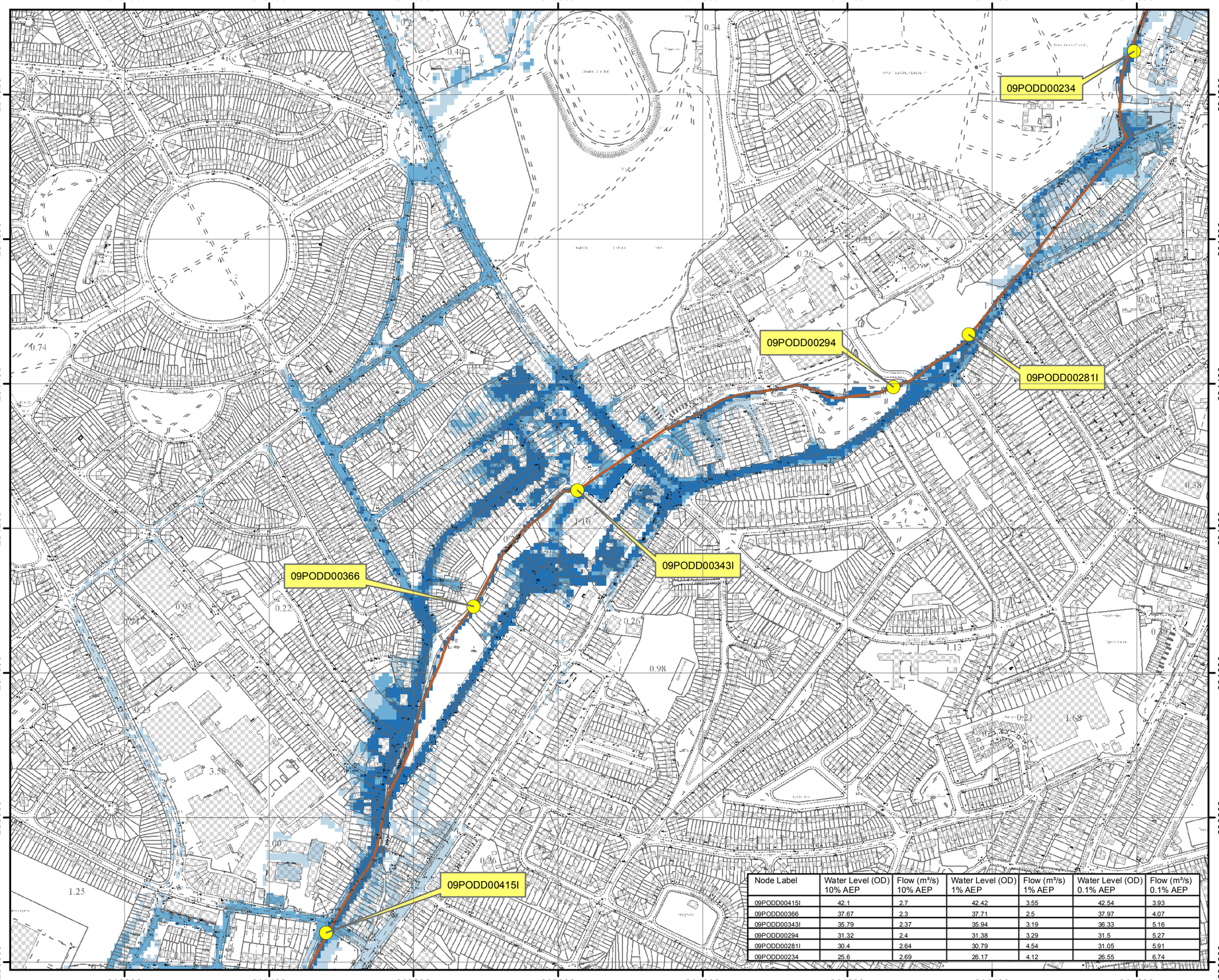
* Important: These maps do not indicate flood hazard or flood extent. Their purpose and scope is explained on Floodinfo.ie

33 Results

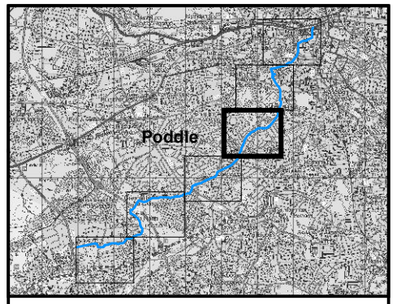
	Name (Flood_ID)	Start Date	Event Location
1.	Poddle August 1986 (ID-32)	25/08/1986	Area
	Additional Information: Reports (9) Press Archive (1)		
2.	Dodder August 1986 (ID-1)	25/08/1986	Area
	Additional Information: Reports (21) Press Archive (18)		
3.	Poddle Fortfield Road Dec 1954 (ID-239)	08/12/1954	Approximate Point
	Additional Information: Reports (1) Press Archive (0)		
4.	Kimmage June 1963 (ID-283)	11/06/1963	Exact Point
	Additional Information: Reports (4) Press Archive (2)		
5.	Kimmage Mount Argus June 1963 (ID-284)	11/06/1963	Exact Point
	Additional Information: Reports (4) Press Archive (2)		
6.	Harold's Cross June 1963 (ID-285)	11/06/1963	Exact Point
	Additional Information: Reports (4) Press Archive (2)		

	Name (Flood_ID)	Start Date	Event Location
7.	Mount Jerome Harold's Cross June 1963 (ID-286) **Additional Information:** Reports (4) Press Archive (2)	11/06/1963	Exact Point
8.	Poddle Harold's Cross undated 1940's (ID-662) **Additional Information:** Reports (1) Press Archive (0)	n/a	Exact Point
9.	Poddle Larkfield Mills Undated 1940s (ID-663) **Additional Information:** Reports (1) Press Archive (0)	n/a	Approximate Point
10.	Willbrook Rathfarnham Dec 1958 (ID-664) **Additional Information:** Reports (1) Press Archive (0)	16/12/1958	Approximate Point
11.	Whitehall Road Kimmage Recurring (ID-1188) **Additional Information:** Reports (2) Press Archive (0)	n/a	Approximate Point
12.	Dodder Lower Dodder Road Recurring (ID-1190) **Additional Information:** Reports (3) Press Archive (0)	n/a	Approximate Point
13.	Owendoher Willbrook Road August 1986 (ID-1266) **Additional Information:** Reports (2) Press Archive (1)	25/08/1986	Approximate Point
14.	Poddle St Claires Ave Sept 1931 (ID-1997) **Additional Information:** Reports (1) Press Archive (0)	03/09/1931	Approximate Point
15.	Poddle Limekiln Lane Aug 1905 (ID-1998) **Additional Information:** Reports (1) Press Archive (0)	24/08/1905	Approximate Point
16.	Poddle River Whitehall Gardens June 1993 (ID-2109) **Additional Information:** Reports (1) Press Archive (1)	11/06/1993	Exact Point
17.	Poddle River Whitehall Road June 1993 (ID-2112) **Additional Information:** Reports (1) Press Archive (0)	11/06/1993	Approximate Point
18.	Poddle Glendown Crescent Feb 1994 (ID-2203) **Additional Information:** Reports (1) Press Archive (0)	03/02/1994	Exact Point
19.	Poddle Limekiln Lane Sept 1931 (ID-3267) **Additional Information:** Reports (1) Press Archive (0)	03/09/1931	Approximate Point
20.	Poddle Park Nov 2000 (ID-3311) **Additional Information:** Reports (1) Press Archive (0)	05/11/2000	Approximate Point
21.	Dodder Woodview Cottages Rathfarnham Nov 2000 (ID-3328) **Additional Information:** Reports (1) Press Archive (3)	05/11/2000	Approximate Point
22.	Flooding at Church Lane, Rathfarnham, Dublin 14.on 24th Oct 2011 (ID-11717) **Additional Information:** Reports (1) Press Archive (0)	24/10/2011	Exact Point
23.	Osprey Estate Nov 1982 (ID-2135) **Additional Information:** Reports (1) Press Archive (0)	05/11/1982	Exact Point

	Name (Flood_ID)	Start Date	Event Location
24.	Owendoher River 24th Oct 2011 Willbrook Road (ID-11484) **Additional Information:** Reports (1) Press Archive (0)	24/10/2011	Approximate Point
25.	Flooding at Blarney Park, Crumlin, Dublin 12 on 24th Oct 2011 (ID-11562) **Additional Information:** Reports (1) Press Archive (0)	24/10/2011	Approximate Point
26.	Flooding at Harold's Cross, Dublin City on 24th Oct 2011 (ID-11603) **Additional Information:** Reports (1) Press Archive (0)	24/10/2011	Approximate Point
27.	Flooding at Limekiln Road, Ballyboden Rd, Co. Dublin on 24th Oct 2011 (ID-11623) **Additional Information:** Reports (1) Press Archive (0)	24/10/2011	Approximate Point
28.	Flooding at Mount Argus Road and Kimmage Road Lower on 24th Oct 2011 (ID-11641) **Additional Information:** Reports (1) Press Archive (0)	24/10/2011	Exact Point
29.	Flooding at Riverside Apartments, Milltown Road, Dublin 6 on 24th Oct 2011 (ID-11645) **Additional Information:** Reports (1) Press Archive (0)	24/10/2011	Exact Point
30.	Flooding at Junction of Terenure Road and Kimmage Road, Dublin 6W on 24th Oct 2011 (ID-11658) **Additional Information:** Reports (1) Press Archive (0)	24/10/2011	Exact Point
31.	Flooding at Walkinstown Crescent, Walkinstown, Dublin 12 on 24th Oct 2011 (ID-11659) **Additional Information:** Reports (1) Press Archive (0)	24/10/2011	Exact Point
32.	Flooding at Wellington Lane, Dublin 24 on 24th Oct 2011 (ID-11664) **Additional Information:** Reports (1) Press Archive (0)	24/10/2011	Exact Point
33.	Flooding at Whitehall Road, Templeogue, Dublin 6W on 24th Oct 2011 (ID-11666) **Additional Information:** Reports (1) Press Archive (0)	24/10/2011	Exact Point



Node Label	Water Level (OD) 10% AEP	Flow (m³/s) 10% AEP	Water Level (OD) 1% AEP	Flow (m³/s) 1% AEP	Water Level (OD) 0.1% AEP	Flow (m³/s) 0.1% AEP
09PODD00415I	42.1	2.7	42.42	3.55	42.54	3.93
09PODD00366	37.67	2.3	37.71	2.5	37.97	4.07
09PODD00343I	35.79	2.37	35.94	3.19	36.33	5.16
09PODD00294	31.32	2.4	31.38	3.29	31.5	5.27
09PODD00281I	30.4	2.64	30.79	4.54	31.05	5.91
09PODD00234	25.6	2.69	26.17	4.12	26.55	6.74



IMPORTANT USER NOTE:
THE VIEWER OF THIS MAP SHOULD REFER TO THE DISCLAIMER, GUIDANCE NOTES AND CONDITIONS OF USE THAT ACCOMPANY THIS MAP.

Legend

- 10% Fluvial AEP Event
- 1% Fluvial AEP Event
- 0.1% Fluvial AEP Event
- Modelled River Centreline
- AFA Extents
- Node Point
- Node ID Node Label

FINAL

REV:	NOTE:	DATE:

EASTERN CFRAM STUDY
CATCHMENT FLOOD RISK ASSESSMENT AND MANAGEMENT

OPW
Oifig na nOibreacha Poiblí
The Office of Public Works

RPS

The Office of Public Works
Jonathan Swift Street
Trim
Co Meath

Elmwood House
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F +44(0) 28 90 668286
W www.rpsgroup.com
E ireland@rpsgroup.com

Map:
Poddle River Fluvial Flood Extents

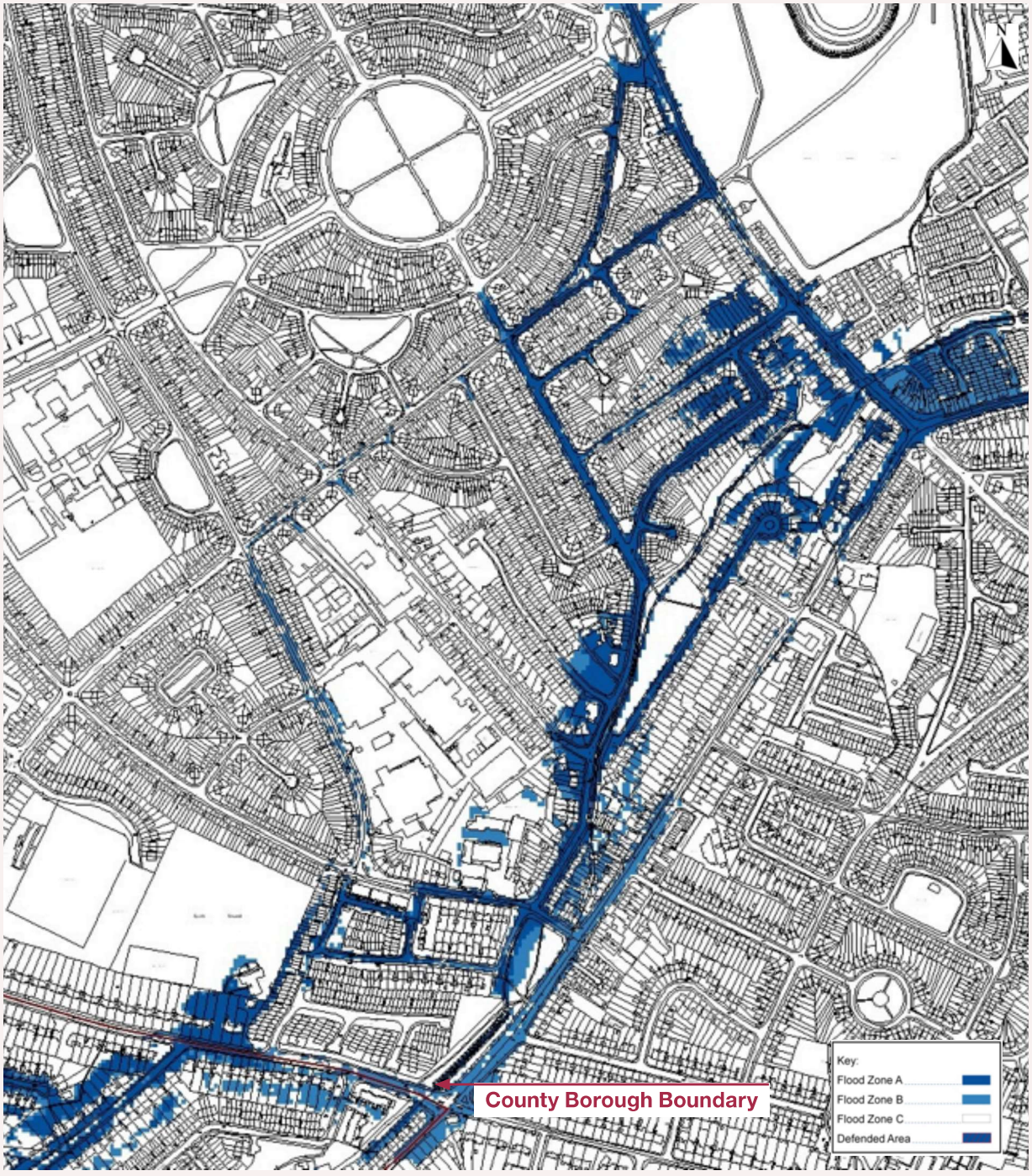
Map Type:	**EXTENT**	
Source:	**FLUVIAL**	
Map Area:	**HPW**	
Scenario:	**CURRENT**	
Drawn By :	**F.M.C.**	**Date : 11 August 2016**
Checked By :	**A.S.**	**Date : 11 August 2016**
Approved By :	**S.P.**	**Date : 11 August 2016**

Drawing No. :
E09POD_EXFCD_F0_04

Map Series : Page 4 of 6

Drawing Scale : 1:5,000 @A3

Site: 16. Poddle: Sundrive Road – Kimmage Road West



Appendix 3

Site Investigation Exploration Points (including Ground Water Monitoring)

NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL ENGINEERS & ARCHITECT'S DRAWINGS.FIGURED DIMENSIONS ONLY (NOT SCALING) TO BE USED. WHERE A CONFLICT OF INFORMATION EXISTS OR IF IN ANY DOUBT - 'ASK'.
2. CONSULTANTS TO BE INFORMED IMMEDIATELY OF ANY DISCREPANCIES BEFORE WORK PROCEEDS.

BLOCK 1 FFL +47.000

BLOCK 2 FFL +47.000

BLOCK 3 FFL +46.775

BLOCK 4 FFL +46.450

BLOCK 5 FFL +46.400

ATTENUATION TANK STORMTECH SC740 SYSTEM OR SIMILAR APPROVED TANK VOLUME EQUALS 146m³

ATTENUATION TANK STORMTECH SC740 SYSTEM OR SIMILAR APPROVED TANK VOLUME EQUALS 551 m³

GREENLEAF REROOT TREE ROOT PROTECTION SYSTEM OR SIMILAR APPROVED

GREENLEAF REROOT TREE ROOT PROTECTION SYSTEM OR SIMILAR APPROVED

EXISTING 450Ø STORM DRAINAGE TO BE DIVERTED

DIVERSION OF EXSITING STORM DRAINAGE

PETROL INTERCEPTOR
UNIT TYPE: NSBE030
SILT CAPACITY: @ 3000 ltrs
SILT CAPACITY: @ 300 ltrs
REFER TO DETAIL B

HYDROBRAKE FLOW CONTROL
UNIT TYPE: HYDROBRAKE S-TYPE UNIT
FLOW RATE: 2.0 l/s
ASSUMED WORKING HEAD: 1.2m
MIN OUTLET DIA: 150mm
MIN CHAMBER DIA: 1200 mm

NOTE: ALL EXISTING U/G SERVICES TO BE DIVERTED AWAY FROM THE FOOTPRINT OF THE PROPOSED FOUL PUMPING STATION

MINIMUM DISTANCE FROM PUMPUNG STATION TO PROPOSED STRUCTURE

MINIMUM DISTANCE FROM PUMPUNG STATION TO STRUCTURE

FOUL PUMPING STATION REFER TO DRAWING 1206 FOR DETAILS

NEW SW MANHOLE

NEW SW MANHOLE

NEW SW MANHOLE

EXISTING GULLIES TO REMAIN

EXISTING IL 44.45

CONNECTION TO EXISTING

CONNECTION TO EXISTING SEWER

Carlisle Health And Fitness Club

Car Park

Art Gallery

KIMMAGE ROAD W

KIMMAGE

SWAN NECK UNABLE TO SEWER

CIVIL LEGEND

EX. FOUL MANHOLE	Ex.F
EX. FOUL PIPE	PIPE DESCRIPTION
NEW FOUL MANHOLE	F
NEW FOUL PIPE	PIPE DESCRIPTION
EX. SURFACE WATER MANHOLE	Ex.S
EX. SURFACE WATER PIPE	PIPE DESCRIPTION
NEW SURFACE WATER MANHOLE	S
NEW SURFACE WATER PIPE	PIPE DESCRIPTION
EX. COMBINED MANHOLE	Ex.C
EX. COMBINED PIPE	PIPE DESCRIPTION
NEW COMBINED MANHOLE	C
NEW COMBINED PIPE	PIPE DESCRIPTION
NEW RISING MAIN	PIPE DESCRIPTION
PIPE CROSSOVER	
EX. ROOF RAIN WATER MANHOLE	Ex.R
EX. ROOF RAIN WATER PIPE	PIPE DESCRIPTION
NEW ROOF RAIN WATER MANHOLE	R
NEW ROOF RAIN WATER PIPE	PIPE DESCRIPTION
DECOMMISSIONED LINE	PIPE DESCRIPTION
FOUL ACCESS JUNCTION	AJ
SURFACE ACCESS JUNCTION	AJ
RAINWATER PIPE	RWP
SOIL VENT PIPE	SVP
ROAD GULLEY	RG
BACK INLET GULLEY TRAP	BIGT
FOUL RODDING EYE	RE
SURFACE RODDING EYE	RE
GULLEY TRAP	GT

SERVICES LEGEND

UNDERGROUND ELECTRICITY LINE	FOUL DRAINAGE
ELECTRICAL M/HOLE	FOUL MANHOLE
OVERHEAD LINE WITH POLE	STORM DRAINAGE
OVERHEAD ELECTRIC	STORM DRAINAGE MANHOLE
UNDERGROUND HV ELECTRICITY LINE	COMBINED DRAINAGE
6m HIGH STREET LIGHT	COMBINED DRAINAGE MANHOLE
MINI PILLAR	PRODUCT DRAINAGE
EIR	PRODUCT DRAINAGE MANHOLE
EIR CHAMBER	CHEMICAL LINE
OVERHEAD LINE WITH POLE	CHEMICAL MANHOLE
ENET	ROAD GULLY
ENET CHAMBER	GULLY TRAP
COMMS	WATER MAIN
COMMS CHAMBER	SLUICE VALVE
VIRGIN	FIRE HYDRANT
VIRGIN CHAMBER	WATER METER
FIBRE	SCOUR VALVE
FIBRE CHAMBER	PRESSURE RELEASE VALVE
AURORA TELECOM	AIR VALVE
AURORA TELECOM CHAMBER	NON-RETURN VALVE
CATV	FUEL LINE/TANK
CATV CHAMBER	GAS SV
BT	GAS LINE
BT CHAMBER	GAS HIGH PRESSURE LINE
ESAT	GROUND LEVEL (metres - os datum)
ESAT CHAMBER	COVER LEVEL (metres - os datum)
SIRO FIBRE	INVERT LEVEL (metres - os datum)
SIRO CHAMBER	DEPTH TO TOP OF SERVICE DUCT OR CABLE
UNIDENTIFIED SERVICE	DP ON MANHOLES = INVERT LEVEL OF CHAMBER
UNIDENTIFIED CHAMBER	DP ON DRAINAGE = INVERT LEVEL OF PIPE
EARTH LINE AND RODS	UNABLE TO OPEN
TRAFFIC SENSORS	OUTSIDE SURVEY AREA
CCTV POLE	UNABLE TO TRACE
UTILITIES CABNET	SURVEYED AREA

CIVIL LEGEND

DENOTES SUBJECT APPLICATION SITE FOR PCE

NOTES

1. THE CONTRACTOR SHALL CONSTRUCT ALL FOUL WATER DRAINAGE IN ACCORDANCE WITH THE LATEST IRISH WATER 'CODE OF PRACTICE FOR WASTEWATER INFRASTRUCTURE' & 'WASTEWATER INFRASTRUCTURE STANDARD DETAILS'.

2. POSITIONS OF SERVICES SHOWN ARE INDICATIVE ONLY. THE SETTING-OUT OF ALL SERVICES INDICATED IS THE RESPONSIBILITY OF THE CONTRACTOR, AND HE/SHE SHALL SATISFY THEMSELVES THAT THE REQUIRED DEPTH OF COVER AND SEPARATION DISTANCES ARE ACHIEVED IN ACCORDANCE WITH THE IRISH WATER 'CODE OF PRACTICE FOR WASTEWATER INFRASTRUCTURE' & 'WASTEWATER INFRASTRUCTURE STANDARD DETAILS".

3. THE CONTRACTOR SHALL REVIEW THE PLAN LAYOUTS PRIOR TO COMMENCEMENT HAVING REGARD TO THE REQUIREMENTS OF THE 'WASTEWATER INFRASTRUCTURE STANDARD DETAILS' PUBLISHED BY IRISH WATER WHERE A DISCREPANCY BETWEEN BMCE PLAN LAYOUT DRAWINGS AND THE RELEVANT REQUIREMENTS OF THE 'CODE OF PRACTICE FOR WASTEWATER INFRASTRUCTURE' & 'WASTEWATER INFRASTRUCTURE STANDARD DETAILS' IS IDENTIFIED, THE CONTRACTOR MUST CONSULT BMCE, PRIOR TO COMMENCING CONSTRUCTION, SO THAT AN APPROPRIATE DESIGN AMENDMENT CAN BE MADE IF REQUIRED.

4. THE GENERAL SPECIFICATION FOR THE FOUL WATER NETWORK ON THE PROJECT SHALL BE THE 'CODE OF PRACTICE FOR WASTEWATER INFRASTRUCTURE' & 'WASTEWATER INFRASTRUCTURE STANDARD DETAILS' PUBLISHED BY IRISH WATER (LATEST EDITION). THE CONTRACTOR SHALL FAMILIARISE HIMSELF WITH ALL ASPECTS OF THIS DOCUMENT WHICH SHALL BE READ IN CONJUNCTION WITH THIS PARTICULAR SPECIFICATION.

PROPOSED FOUL AND SURFACE WATER DRAINAGE LAYOUT

SCALE @ A0: 1:250
SCALE @ A2: 1:500

ISSUE	DATE	DESCRIPTION	BY
PL4	25.02.22	ISSUED TO IW	MR
PL3	04.02.22	ISSUED FOR PLANNING	MR
P3	01.02.22	ISSUED TO IW	SM
PL2	13.10.21	ISSUED FOR PLANNING	MR
PL1	08.10.21	ISSUED FOR PLANNING	MR

Project Engineer: MH | Project Director: OK

BM STAGE: **PLANNING**

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CLIENT: 1 TERENURE LAND LTD.

PROJECT TITLE: CARLISLE SITE KIMMAGE, RESIDENTIAL DEVELOPMENT

BM PROJECT No.: 21.221

MODEL | REFERENCE | SUITABILITY | REVISION

DRAWING TITLE: PROPOSED FOUL AND SURFACE WATER DRAINAGE LAYOUT

CWMS | DRAWING REFERENCE: CST-BMD-00-ZZ-DR-C-1002 | STATUS: PL | REVISION: 4

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