SITE-SPECIFIC FLOOD RISK ASSESSMENT

Proposed Development at Emmet Road

For DCC

PROJECT NO. B967

28 September 2022

OCSC

O'CONNOR | SUTTON | CRONIN

Multidisciplinary
Consulting Engineers

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NOTICE

DOCUMENT CONTROL & HISTORY

OCSC Job No.: B967	Project Code	Originator	Zone Volume	Level	File Type	Role Type	Number	Status / Suitability Code	Revision
	B967	OCSC	XX	XX	RP	C	0007	S4	P04

Rev.	Status	Authors	Checked	Authorised	Issue Date
P04	**S4**	**MK**	**IC**	**IC**	**28.09.2022**
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P01	S3	MK	IC	IC	12.03.2021

SITE-SPECIFIC FLOOD RISK ASSESSMENT

TABLE OF CONTENTS PAGE

1 INTRODUCTION

1.1 Appointment

O'Connor Sutton Cronin & Associates (OCSC) have been appointed by *DCC* as part of an integrated Design Team led by Bucholz McEvoy, to prepare a Site-Specific Flood Risk Assessment for the proposed mixed-use redevelopment at Emmet Road, Inchicore, Dublin.

1.2 Administrative Jurisdiction

The proposed development is located in the jurisdiction of Dublin City Council (DCC), and therefore the site-specific assessment on flood risk was assessed with reference to the following:

- Dublin City Council Development Plan (2016 – 2022);
- Dublin City Council Draft Development Plan (2023 – 2028)
- Greater Dublin Strategic Drainage Study (GDSDS);
- The Planning System and Flood Risk Management Guidelines for Planning Authorities (Department of Environment, Heritage and Local Government and the Office of Public Works).

1.3 Site Location

The site for the proposed development is located in the heart of Inchicore, as indicated in Figure 1.1 over.

Inchicore is a suburb of Dublin located approximately 5km to the west of Dublin city centre. Inchicore is primarily a residential area comprising predominantly of 2-storey early to mid-20th century housing stock with some medium rise apartments developments of both social and private built in more recent decades.

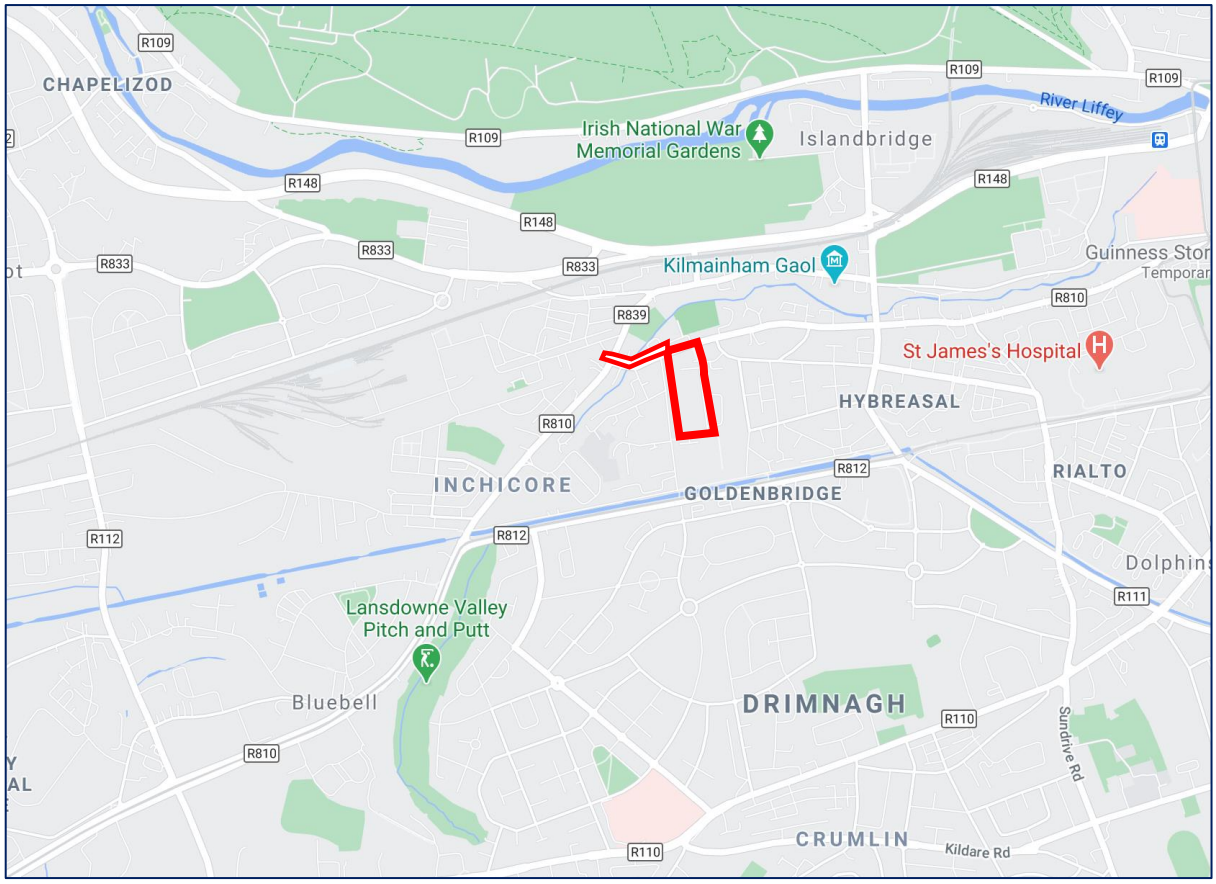

Figure 1.1 - Site Location (www.myplan.ie)

1.4 Existing Site Overview

The site covers an area of approximately 4.68 hectares and is immediately bound by:

- Emmet Road to the north;
- St Vincent Street West to the western boundary;
- Goldenbridge Cemetery to the southern boundary;
- Patriots Path to the eastern boundary.

The site currently comprises a mixture of brownfield areas which previously housed the St Michaels Estate development together with the current existing buildings/structures:

- St Michael's Community Centre (to be demolished);
- Eve Tuiscint Health Centre (to be demolished);
- Inchicore Community Sports Centre (to be retained);

- Boundary wall to the north western corner of the site (majority of which is be retained).

The following existing structures, outside of the site area, are indicated in **Figure 1.2** that are of importance. These include:

- Inchicore Primary Care Centre to the east of the site;
- Richmond Barracks to the east of the site.

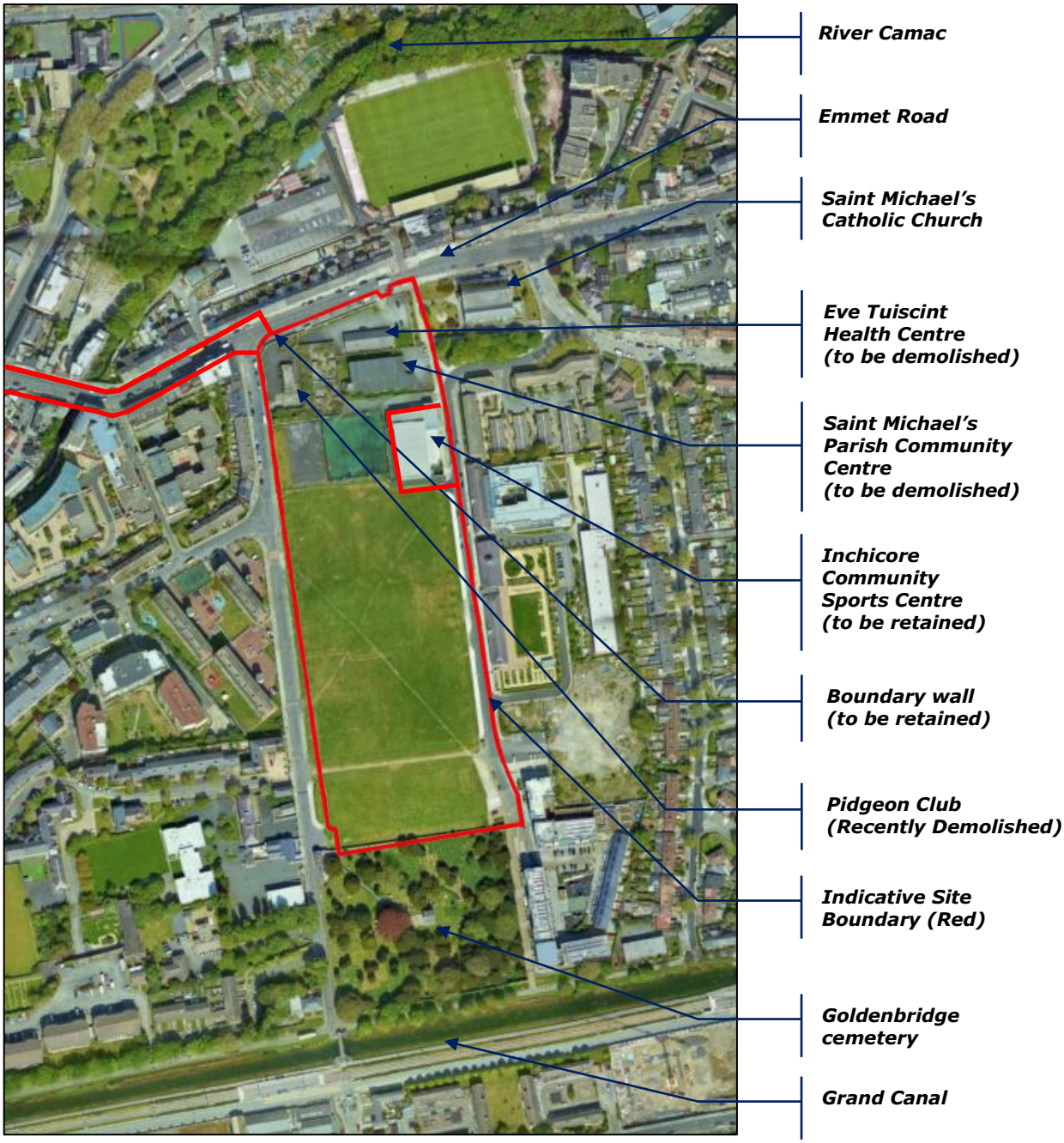

Figure 1.2 – Aerial Overview of the Site

1.5 Proposed Development Context

The proposed scheme consists of a mixed-use development with a strong emphasis on residential units in addition to commercial, retail and community facilities together with all associated infrastructure including roads, footpaths, services and landscaping.

The development will comprise 578 no. apartments, consisting of 110 no. studio apartments, 172 no. 1 bedroom apartments, 250 no. 2 bedroom apartments (including 10 no. duplex apartments) and 46 no. 3 bedroom apartments (all apartments to have balconies or terraces), community facilities Library/Community Hub, Creche, Supermarket, 5 no. units (retail/café/restaurant/class 2 financial services floorspace) & 2 no. Café units), a public plaza fronting onto Emmet Road and the installation of a new watermain c 200m in length along Emmet Road to the junction with Tyrconnell Road/Grattan Crescent. The proposal includes works to a protected structure (8705 - Richmond/Keogh Barracks, relating to works to rubble stone boundary walls).

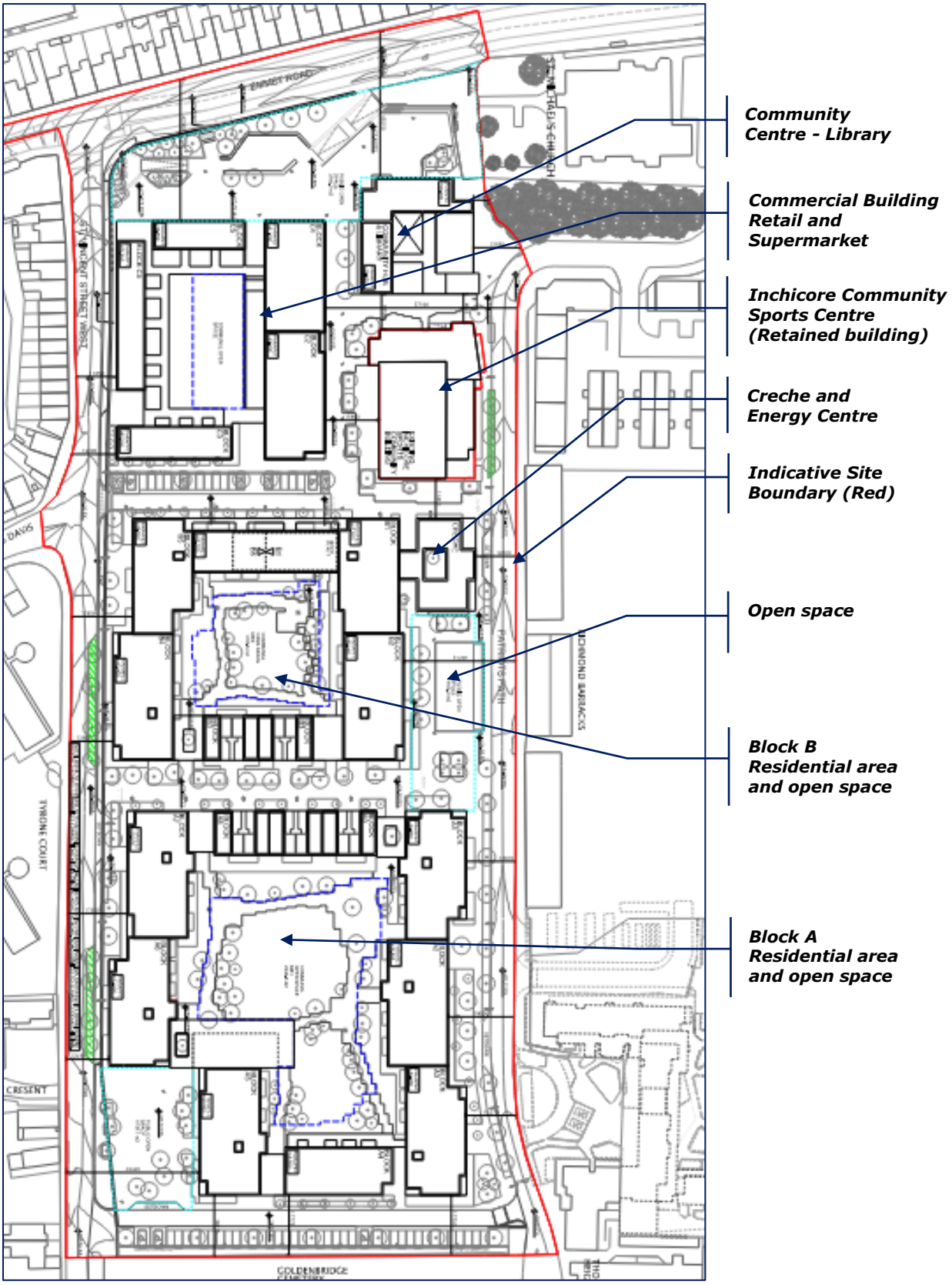

Figure 1.3 – Proposed Site Layout

2 SCOPE OF SITE-SPECIFIC FLOOD RISK ASSESSMENT

This Site-Specific Flood Risk Assessment Report was prepared by reviewing the available data from the Local Authority sources and national bodies *i.e.,* Dublin City Council, Irish Water, The OPW, and the wider Design Team.

A detailed assessment of the proposed engineering infrastructure services associated with the proposed development is provided under separate cover, as part of this application. Refer to document **B967-OCSC-XX-XX-RP-C-0006** for details.

2.1 Information Consulted

The flood risk assessment was prepared based on a comprehensive review of the information available from the following sources:

- The Office of Public Works, the Planning System and Flood Risk Management (2009);
- Dublin City Council Development Plan (2016 – 2022);
- Dublin City Council Draft Development Plan (2022 – 2028);
- Greater Dublin Strategic Drainage Study (GDSDS);
- OPW website www.floodinfo.ie;
- DECLG website www.myplan.ie;
- OPW website www.floodmaps.ie;
- Dublin City Council's and Irish Water's Drainage and Watermain Records;
- Geological Survey of Ireland Maps;
- Architectural drawings;
- Topographical survey of the proposed site (Apex Surveys, 2020).

3 FLOOD RISK IDENTIFICATION AND ASSESSMENT

3.1 Design Guidelines Overview

Any planning permission sought on the subject lands is required to adhere to the Local Authority requirements *i.e.,* the Dublin City Council (DCC) Development Plan. Similarly, new development is subject to the requirements of the OPW's flood risk management guideline – The Planning System and Flood Risk Management (FRM), Guidelines for Planning Authorities (2009) – in which, its Technical Appendices outline the requirements for a Site-Specific Flood Risk Assessment.

3.2 DCC Development Plan (and Draft Development Plan) Strategic Flood Risk Assessment

The Dublin City Development Plan 2016-2022 identifies a number of policies relating to flooding, some are outlined below:

"*SI12: To implement and comply fully with the recommendations of the Strategic Flood Risk Assessment prepared as part of the Dublin City Development Plan.*

SI13: That development of basements or any above-ground buildings for residential use below the estimated flood levels for Zone A or Zone B will not be permitted.

SI15: To minimise the risk of pluvial (intense rainfall) flooding in the city as far as is reasonably practicable and not to allow any development which would increase this risk."

Furthermore, there are many policies noted across Draft Dublin City Council Development Plan 2022 – 2028, in relation to flood risk, with the most relative ones being:

SI13: Minimising Flood Risk - To minimise the flood risk in Dublin City from all other sources of flooding as far as is practicable, including fluvial, reservoirs and dams, and the piped water system.

SI14: Strategic Flood Risk Assessment - To implement and comply fully with the recommendations of the Strategic Flood Risk Assessment prepared as part of the Dublin City Draft Development Plan 2022-2028 and to have regard to the Flood Risk Management Guidelines (2009), as revised by Circular PL 2/2014, when assessing planning applications and in the preparation of statutory and non-statutory plans.

SI15: Site-Specific Flood Risk Assessment - All development proposals shall carry out, to an appropriate level of detail, a Site-Specific Flood Risk Assessment.

A Strategic Flood Risk Assessment (SFRA) was prepared in conjunction with the Dublin City County Development Plan i.e., Volume 7; this is also the case in the Draft DCC Development Plan. The SFRA includes flood maps and justification tests for the City. The DCC Development Plan SFRA states that "*areas in Flood Zone A & B and areas of Flood Zone C where storm (surface) water or ground water flooding potential is identified, a "Stage 2 – Initial FRA" will be required and depending on the scale and nature of the risk a "Stage 3 - Detailed FRA" may be required*.

3.3 The Planning System and Flood Risk Management (FRM), Guidelines for Planning Authorities (2009)

The FRM Guidelines outline methodologies for the "transparent consideration of flood risk at all levels of the planning process, ensuring consistency of approach throughout the country".

"The core objectives of the FRM 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 runoff;
- 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; and
- Ensure 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 flood risk management."

In order to achieve the aims and objectives that are set out in the FRM Guidelines, the key principles that should be applied to new development are as follows:

- Avoid the risk, where possible;
- Substitute less vulnerable uses, where avoidance is not possible; and
- Mitigate and manage the risk, where avoidance and substitution are not possible.

Justification for development is required in situations where 'avoid' and 'substitute' principles cannot be applied. This is further summarised in the FRM Guidelines Sequential Approach, as illustrated in *Figure 3.1*.

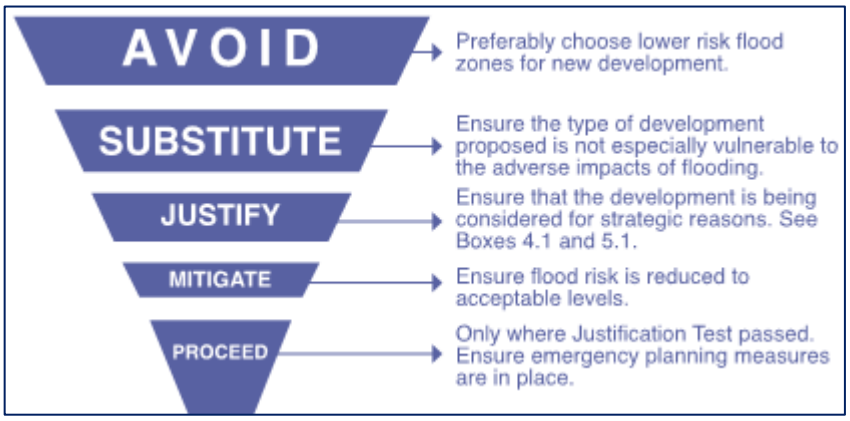

Figure 3.1 - Sequential Approach Principles in Flood Risk Management.

3.4 Climate Change

Both the Greater Dublin Strategic Drainage Study (GDSDS, 2005) and FRM Guidelines require that account be taken of the effects of climate change over the design life of a development, typically 100 years. Design parameters to take account of climate change were established in the *GDSDS* and revised following later studies and Climate Change Sectorial Adaptation Plan Flood Risk

Management (2015-2019) Development published by the OPW. These parameters are set out in Figure 3.2, below.

Design Category	Impact of Climate Change
Drainage	20% increase in rainfall
Fluvial (River)	20% increase in flood flow
Tidal/Coastal	Sea level rise of 500 mm

Figure 3.2 - Climate Change - Impact on Design Parameters

3.5 Flood Risk Assessment

The assessment of flood risk requires an understanding of where the water comes from (i.e., the source), how and where it flows (i.e. the pathways) and the people and assets that it affects (i.e. the receptors). This is illustrated further in *Figure 3.3*, as sourced from the FRM Guidelines.

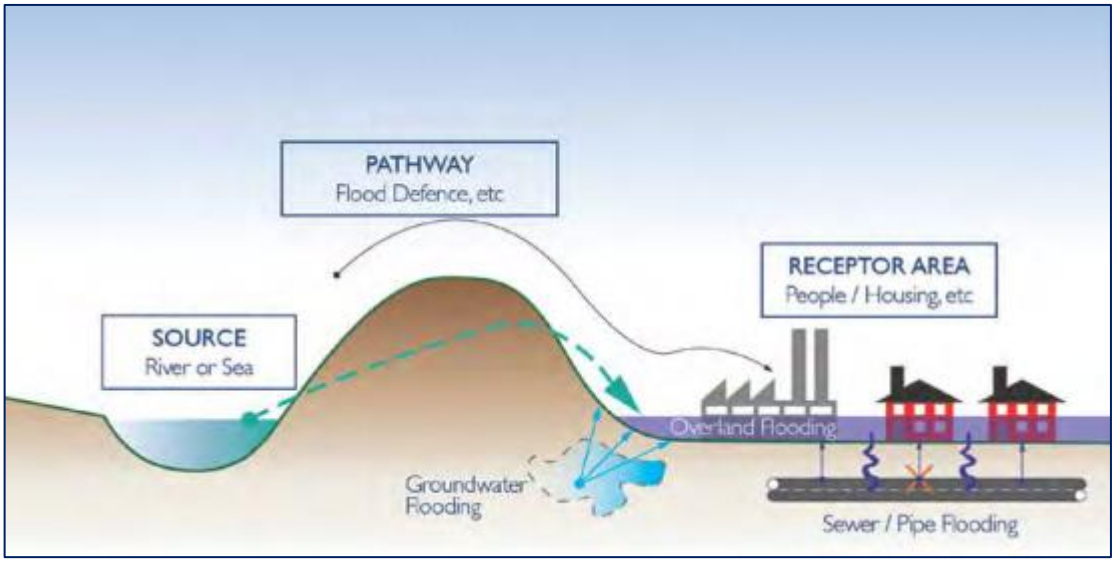

Figure 3.3 - Source - Pathway - Receptor Model

The main sources of flooding are rainfall or higher than normal sea or river levels.

The main pathways include rivers, streams, sewers, drains, overland flow, and river and coastal floodplains and their assets.

Receptors typically include people, their property and their environment.

All three elements of this model must be examined as part of the flood risk assessment, including the vulnerability and exposure of receptors. In order to determine its potential consequence.

Risks to people, property and the environment should be assessed over the full range of probabilities, including extreme events. Flood risk assessment should cover all sources of flooding, including effects of run-off from a development locally and beyond the development site.

3.5.1 Flood Risk Assessment Stages

The FRM Guidelines outline that a three- staged approach should be adopted when carrying out a flood risk appraisal or assessment of flood risk for individual planning applications. These stages are:

- **Stage 1**: *Flood Risk Identification* – Identification of any issues relating to the site that will require further investigation through a Flood Risk Assessment;
- **Stage 2**: *Initial Flood Risk Assessment* – Involves establishment of the sources of flooding, the extent of the flood risk, potential impacts of the development and possible mitigation measure;
- **Stage 3**: *Detailed Flood Risk Assessment* – Assess flood risk issues in sufficient detail to provide quantitative appraisal of potential flood risk of the development, impacts of the flooding elsewhere and the effectiveness of any proposed mitigation measures.

This Site-Specific Flood Risk Assessment (SSFRA) addresses the requirements for Stage 2.

3.6 Flood Zones

The FRM Guidelines identifies three types, or levels, of flood zones, which are defined as follows:

1. **Flood Zone A** – where the probability of flooding from rivers and sea is highest (greater than 1%AEP for fluvial, or 0.5%AEP for coastal flooding);

2. **Flood Zone B** – where the probability of flooding from rivers and sea is moderate (between 0.1%AEP and 1%AEP for fluvial and between 0.1%AEP and 0.5%AEP for coastal flooding);
3. **Flood Zone C** – where the probability of flooding from rivers and sea is low (less than 0.1%AEP for both fluvial and coastal flooding).

3.7 Development Vulnerability

Table 3.1 of the FRM Guidelines classifies the proposed residential development as being '**highly vulnerable development**', based on its proposed land use and type of development.

Table 3.2 of the PSFRM Guidelines, reproduced in *Figure 3.4* below, illustrates the types of development that are considered appropriate to each flood zone, and those that would be required to meet the criteria of a Justification Test, which establishes the criteria under which desirable development of a site within a floodplain may be warranted.

	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

Figure 3.4 - Matrix of Vulnerability Vs. Flood Zone

Therefore, based on the table above, *Highly Vulnerable Development*, such as residential, is classified as '**appropriate**', if it is located within Flood Zone C.

3.8 Sequential Approach

A sequential approach, based on the development vulnerability and location with respect to flood zones, is a key tool in ensuring new development is first

and foremost directed towards land that is at low risk of flooding. This approach is illustrated further in *Figure 3.5*.

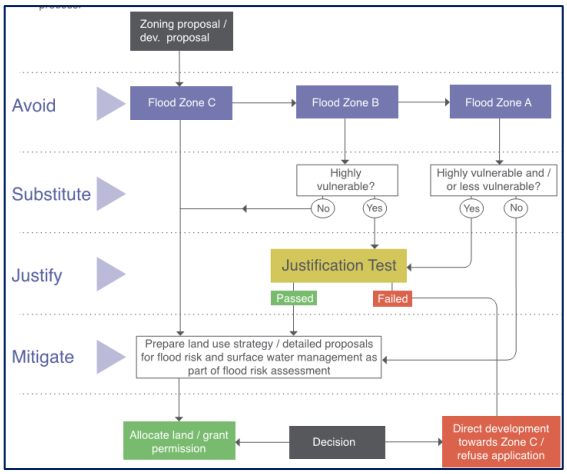

Figure 3.5 - Sequential Approach Mechanism (FRM Guidelines)

4 STAGE 1 - FLOOD RISK IDENTIFICATION

Details of the information sources that were used as part of the flood risk identification associated with the subject development site are provided in *Section* 2 of this report.

4.1 Existing Hydrological Environment

The site of the proposed development lies adjacent to the Grand Canal; Refer to *Figure 1.2* for context. The canal is operated and managed by Waterways Ireland.

There are no OPW arterial drains located within or adjacent to the site.

4.2 Existing Surface Water Drainage Infrastructure

The site and its surroundings are well served by dedicate/separate storm drainage network, as indicated in Figure 4.1.

Two main storm drains are identified serving the site. The first is a 225mm-diameter concrete sewer which travels along the western boundary of the site. This sewer later becomes a 300mm-diameter sewer before travelling in a westerly direction along Thomas Davis Street West. The Irish Water records drawings indicate that this sewer previously gathered storm drainage from Saint Michael's Estate. However, the drawings from the demolition of Saint Michael's Estate and the result of the GPR survey, undertaken in 2020 indicate that these connections may have been removed. Key surveyed drainage infrastructure is illustrated on the drainage design drawings that accompany this application. It is noted that there are discrepancies between the findings of the GPR survey and the record drawings in terms of the plan location and alignment of this sewer - this will need to be further reviewed/verified on site. It is also noted that the sewer passes onto the site in a number of locations. Thus, a permanent diversion of same may be required to facilitate the development.

The second dedicated storm sewer is a 375mm-diameter concrete sewer which travels along Saint Michael's Estate to the eastern boundary of the site. This sewer later becomes a 450mm-diameter sewer before travelling under Emmet

Road and to the rear of Richmond Park to discharge to the Camac River. Again, the Irish Water Record drawings indicate that this sewer previously gathered storm drainage from Saint Michael's Estate. However, the drawings from the demolition of the Saint Michael's Estate and the results of the GPR survey indicate that these connections may have been removed.

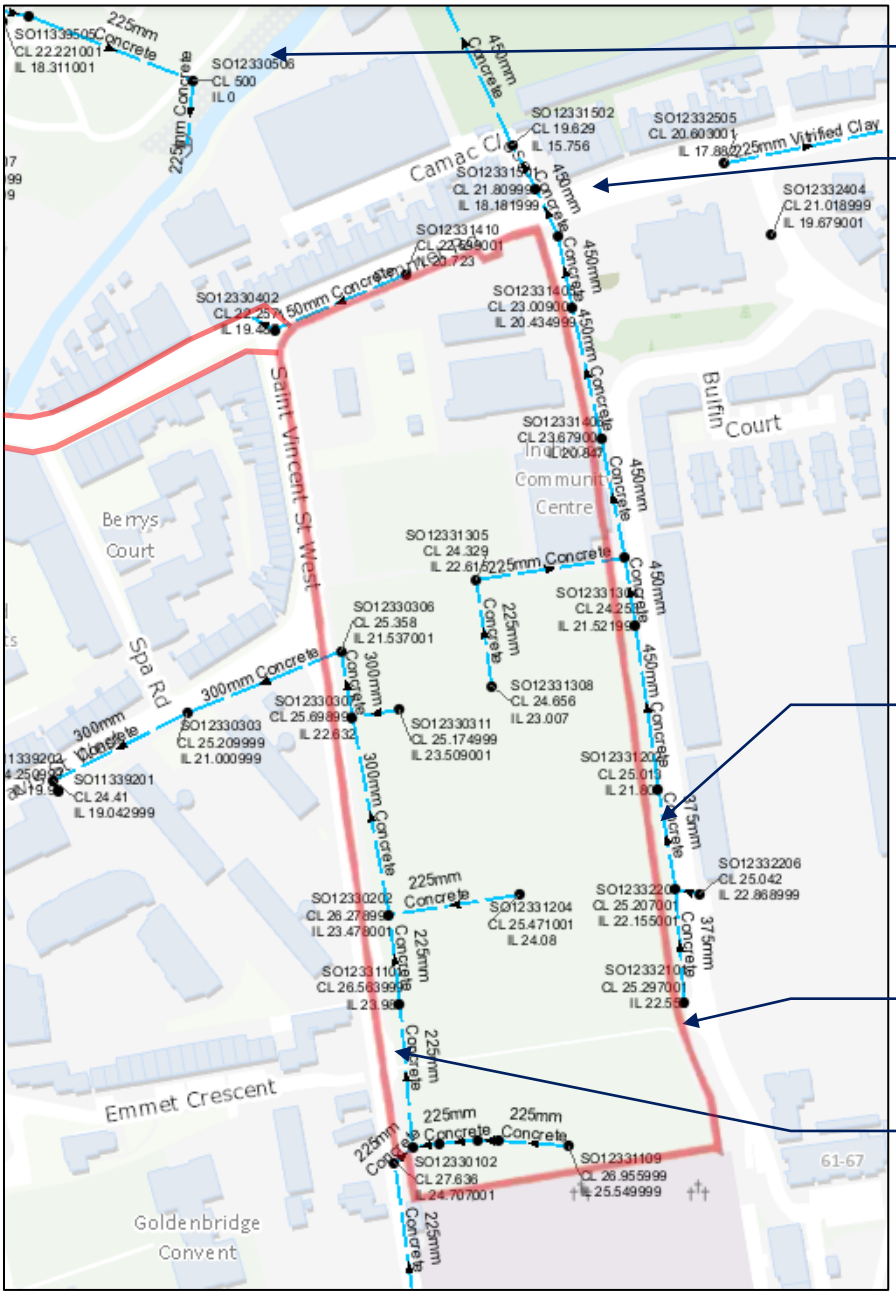

Figure 4.1 – Existing Drainage Infrastructure Records

4.3 Existing Flood Defences

The Strategic Flood Risk Assessment identifies that the "*walls, bridges, locks, weirs and embankments on the Royal and Grand canals, including the Grand Canal Dock are significant flood protection structures".*

The proposed development will not impact on the existing defences in the area and will not be impacted by the operation of the nearby Grand Canal.

4.4 Topographical Survey

The site is graded naturally towards the northeast corner of the site. For context, the highest part of the site, located in the southwest corner of the site, has an existing level of approximately +27.5m AOD; with the lowest typical level being in the order of +22.2m AOD located in the northeast corner of the site.

4.5 Historical Mapping

The historical 6" (1837 – 1842) and the 25" (1888 – 1913) mapping have been reviewed. Historical mapping is often a very useful source of information for assessing the flood history of an area. The historical maps examined do not indicate flooding in the area proposed for this development.

4.6 Historical Flooding

The Office of Public Works (OPW) collates all information available from reports of flooding from all sources on a nationwide basis. This information is availavle from the OPW's website www.floodinfo.ie, which was consulted in order to obtain any information on previous flooding in the vicinity of the site. The report does not identify any historical fllod events occuring in the immediate vicinity of the site, with the nearest reported events occurring in Kilmainham, which had no impact on the development area. Refer to *Figure 4.1 - OPW Historical Flooding*, below.

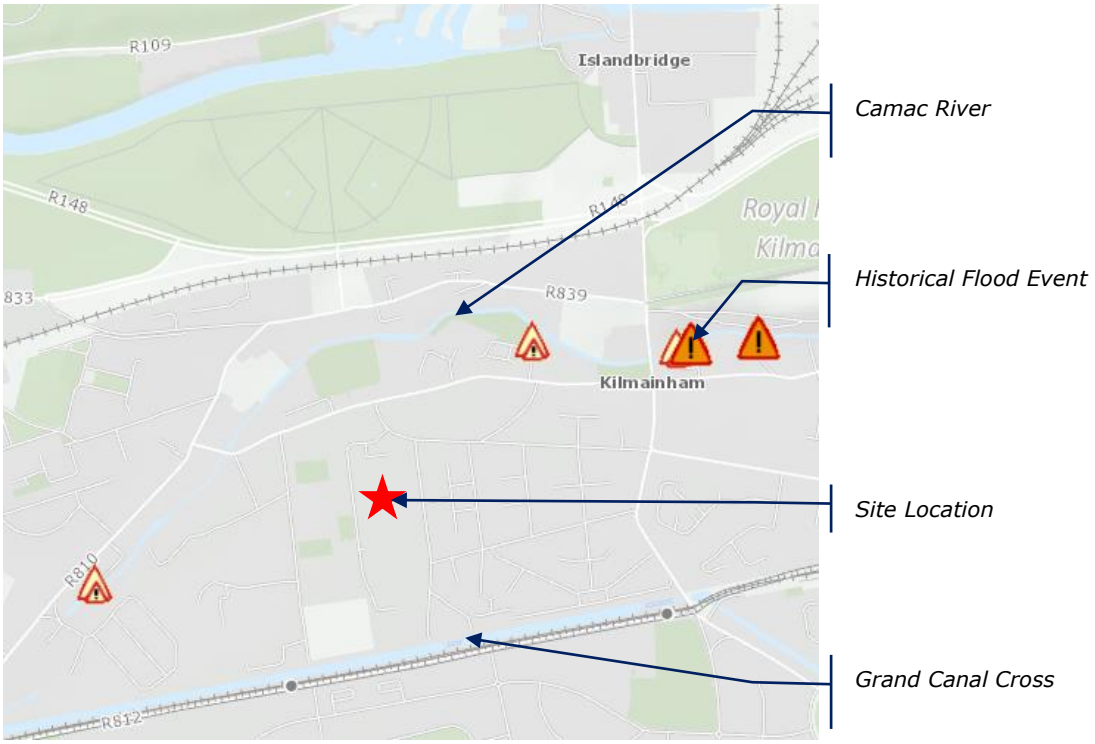

Figure 4.2 – OPW Historical Flooding (www.floodinfo.ie)

4.7 Fluvial Flooding

The OPW in conjunction with Dublin City Council have developed the Flood Risk and Assessment maps as part of the CFRAMS programme. The site of the proposed development has been included in the CFRAM model for the Camac River.

Figure 4.2 below is an extract from the CFRAM fluvial flood map for the River Camac, as sourced from the OPW interactive mapping website www.floodinfo.ie, for area in the vicinity of the proposed development site. Full CFRAM maps for the area are included in Appendix C of this report. The flood map indicate that the site lies outside the Flood Zone A and B fluvial flood extents, and is therefore considered to be located in **Flood Zone C**.

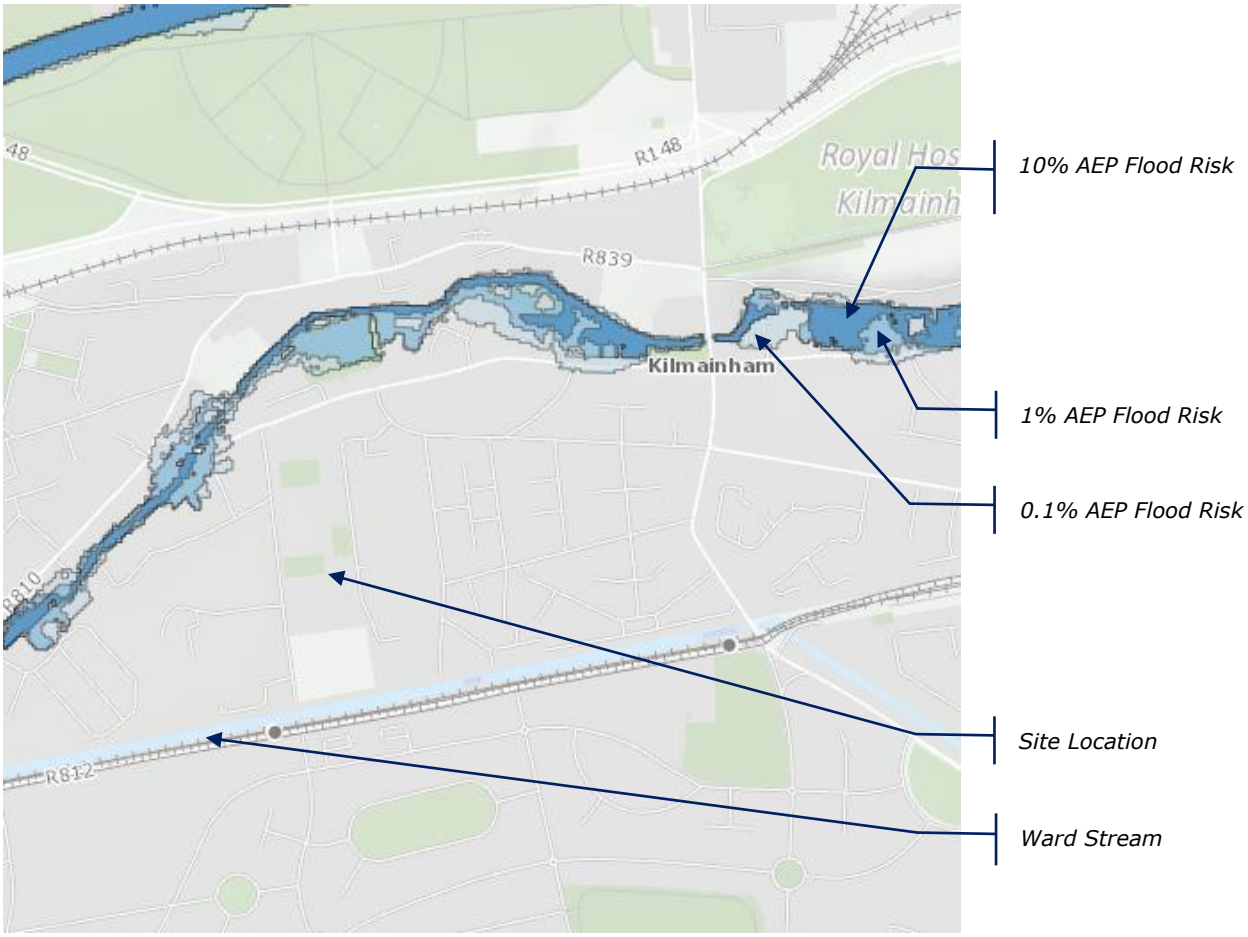

Figure 4.3 – River Camac Catchment Flood Risk and Assessment Mapping

4.8 Coastal Flooding

Coastal flooding is caused by high sea levels resulting in the sea overflowing onto the land.

The proposed development site is located approximately 12.0km west from the eastern coast, and is therefore **not** considered at Risk from Coastal Flooding.

It is noted that the Camac River discharges into a tidally influenced part of the River Liffey, approximately 1Km from the development site. However, it does not appear to have any impact on the development site.

4.9 Pluvial Flooding

Pluvial flooding occurs when overland flow, resulting from rainfall events, cannot infiltrate into the ground, when drainage systems exceed their capacity

or are blocked and when the water cannot discharge due to a high water level in the receiving watercourse.

The Dublin Pluvial Study include predictive flood maps showing areas predicted to be inundated during a theoretical or 'design' flood event with an estimated probability of occurrence. The site of the proposed development has been included in the Dublin Pluvial Study.

Figure 4.3 is an extract from the pluvial flood map for the area surrounding the proposed development site. The full Dublin Pluvial Study map for the area is included in Appendix B of this report. The flood map indicate that a portion of the site lies within the 10% AEP pluvial flood extent

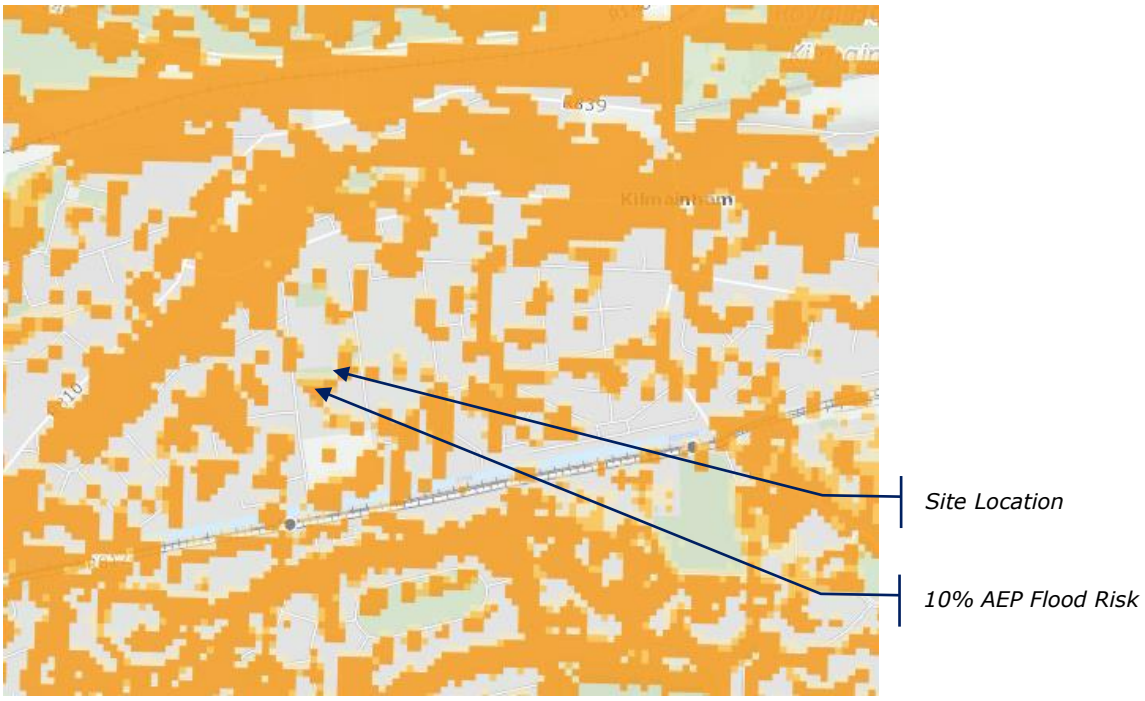

Figure 4.4 - Dublin Pluvial Study Mapping

Considering the subject site is currently greenfield, the proposed new development is to be designed with a storm water management system in place to mitigate any resulting potential pluvial flood risk.

4.10 Groundwater Flooding

From a review of GSI online interactive mapping, the proposed development does not appear to be at risk of groundwater flooding.

4.11 DCC Development Plan Strategic Flood Risk Assessment

A Strategic Flood Risk Assessment was prepared as part of both the current Dublin City Development Plan (2016 – 2022) and the Draft Dublin City Development Plan (2022 – 2028). As part of this report, a review of flooding in Dublin City was undertaken. The flood risk assessment identified Grand Canal as a source of fluvial flooding in the area. The site is not identified in Flood Zone A or B, and is therefore is considered to be in Flood Zone C, see *Figure 4.4*.

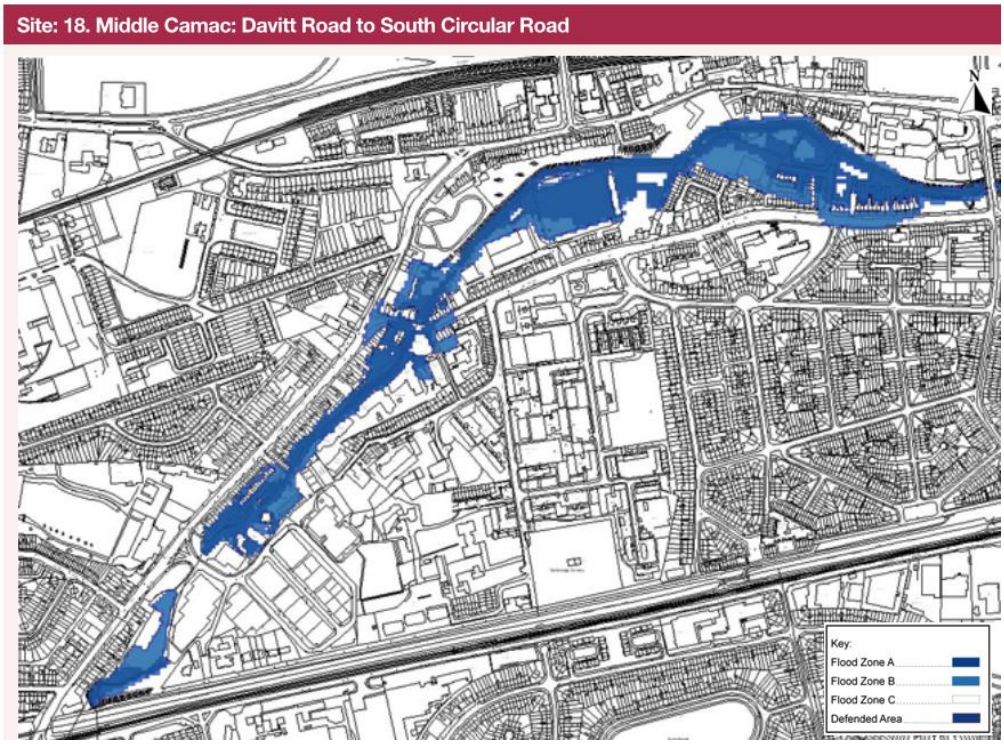

Figure 4.5 - DCC SFRA Flood Risk Mapping

4.12 Estimate of Flood Zone and Levels

From the available information, it can be concluded that the site is located in Flood **Zone C** for fluvial flooding i.e., no apparent risk of fluvial flooding.

A portion of the site is identified at being at risk of a 10% AEP *pluvial* event (Refer Section 4.9), however, the new surface water network proposed as part of this development will mitigate the pluvial risk to the development, while also not increasing the flood risk elsewhere.

5 CONCLUSIONS AND RECOMMENDATIONS

The proposed development is considered '**Highly Vulnerable**', in accordance with the guidance set out in The Planning System and Flood Risk Management (FRM), Guidelines.

A review of all available flood risk mapping, as discussed throughout this report, confirms that the proposed development avoids all predicted and identified fluvial and coastal flood risk extent i.e., is located within Flood Zone C.

Therefore, the proposed development is considered '**appropriate**' for development, in accordance with The Planning System and Flood Risk Management (FRM), Guidelines.

It is further noted that the proposed development has been designed to provide sufficient surface water drainage infrastructure to ensure no pluvial flooding on site for all design rainfall events up to, and including, the 1% AEP. The proposed surface water drainage network has also been designed to attenuate all rainfall events to the greenfield equivalent runoff rates, so as to ensure no adverse impacts downstream as result of the proposed development. Refer to the Engineering Services Report, B967-OCSC-XX-XX-RP-C-0006, and associated design drawings for further details relating to the proposed surface water drainage network and management strategy.

Based on the above, and the detailed information contained within this SSFRA, there is no apparent flood risk to the proposed development, nor as a result of the proposed development.

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APPENDIX A. FLOODMAPS.IE REPORT

Appendix A

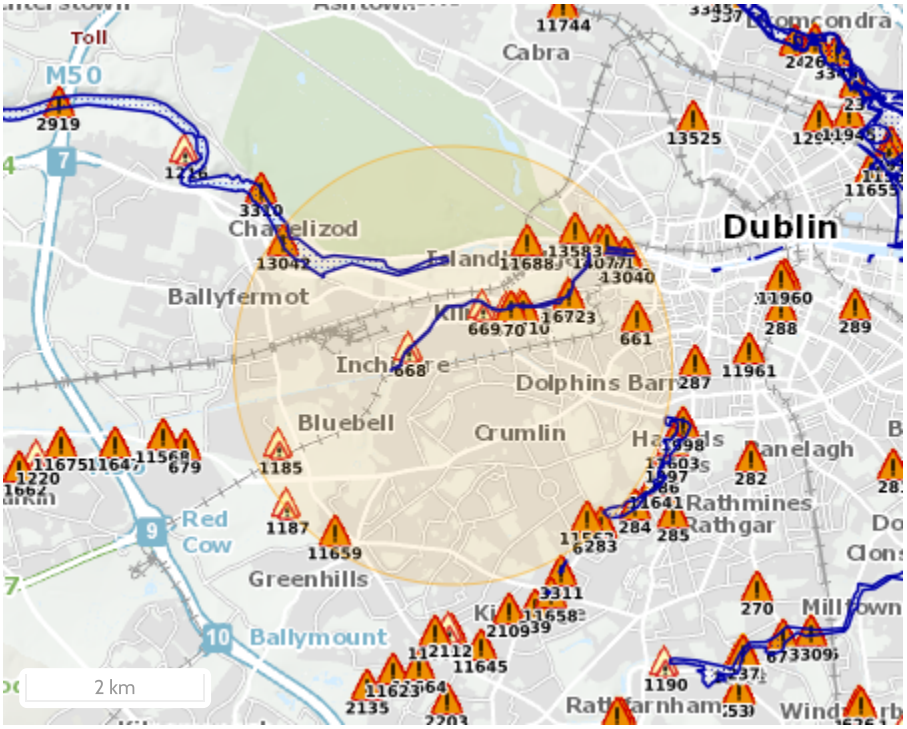
Floodmaps.ie Report

Past Flood Event Local Area Summary Report

Report Produced: **28/9/2022 14:48**

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

27 Results

	Name (Flood_ID)	Start Date	Event Location
1.	Poddle August 1986 (ID-32)	24/08/1986	Area
	Additional Information: Reports (9) Press Archive (1)		
2.	Flooding at Dublin City on 22/11/2017 (ID-13583)	22/11/2017	Approximate Point
	Additional Information: Reports (0) Press Archive (0)		
3.	Camac August 1986 (ID-125)	24/08/1986	Area
	Additional Information: Reports (3) Press Archive (0)		
4.	Liffey Lower - Dec 1954 (ID-241)	08/12/1954	Area
	Additional Information: Reports (5) Press Archive (2)		
5.	Flooding at Dublin City on 06/01/2014 (ID-13040)	06/01/2014	Approximate Point
	Additional Information: Reports (0) Press Archive (0)		
6.	Kimmage June 1963 (ID-283)	10/06/1963	Exact Point
	Additional Information: Reports (4) Press Archive (2)		

	Name (Flood_ID)	Start Date	Event Location
7.	Poddle Tributary Marrowbone Lane Jan 1941 (ID-661) Additional Information: Reports (1) Press Archive (0)	20/01/1941	Approximate Point
8.	Camac Turvey Ave Recurring (ID-669) Additional Information: Reports (1) Press Archive (0)	n/a	Exact Point
9.	Poddle Harold's Cross undated 1940's (ID-662) Additional Information: Reports (1) Press Archive (0)	n/a	Exact Point
10.	Poddle Larkfield Mills Undated 1940s (ID-663) Additional Information: Reports (1) Press Archive (0)	n/a	Approximate Point
11.	Camac Goldenbridge Recurring (ID-668) Additional Information: Reports (1) Press Archive (0)	n/a	Approximate Point
12.	Camac Carrickfoyle Terrace Recurring (ID-670) Additional Information: Reports (1) Press Archive (0)	n/a	Exact Point
13.	Camac Kearns Place Recurring (ID-671) Additional Information: Reports (1) Press Archive (0)	n/a	Exact Point
14.	Camac Bow Bridge Recurring (ID-672) Additional Information: Reports (1) Press Archive (0)	n/a	Approximate Point
15.	Camac Culvert Old Naas Road recurring (ID-1185) Additional Information: Reports (2) Press Archive (0)	n/a	Approximate Point
16.	Robinhood Stream Walkinstown Recurring (ID-1187) Additional Information: Reports (3) Press Archive (0)	n/a	Approximate Point
17.	Flooding at Dublin City on 14/06/2016 (ID-14077) Additional Information: Reports (0) Press Archive (0)	14/06/2016	Approximate Point
18.	Dublin City Tidal Feb 2002 (ID-456) Additional Information: Reports (45) Press Archive (27)	01/02/2002	Area
19.	Flooding at Blarney Park, Crumlin, Dublin 12 on 24th Oct 2011 (ID-11562) Additional Information: Reports (1) Press Archive (0)	23/10/2011	Approximate Point
20.	Flooding at Bow Lane, Kilmainham, Dublin 8 on 24th Oct 2011 (ID-11563) Additional Information: Reports (1) Press Archive (0)	23/10/2011	Approximate Point
21.	Flooding at Kearns Place, Kilmainham, Dublin 8 on 24th Oct 2011 (ID-11620) Additional Information: Reports (1) Press Archive (0)	23/10/2011	Approximate Point
22.	Flooding at Lady's Lane, Kilmainham, Co. Dublin on 24th Oct 2011 (ID-11622) Additional Information: Reports (1) Press Archive (0)	23/10/2011	Approximate Point
23.	Flooding at Walkinstown Crescent, Walkinstown, Dublin 12 on 24th Oct 2011 (ID-11659) Additional Information: Reports (1) Press Archive (0)	23/10/2011	Exact Point

	Name (Flood_ID)	Start Date	Event Location
24.	Flooding at Ashling Hotel, Parkgate Street, Dublin 8 on 24th Oct 2011 (ID-11681) **Additional Information:** Reports (1) Press Archive (0)	23/10/2011	Exact Point
25.	Flooding at Bridgewater Quay Apartments, Islandbridge, Dublin 8. on 24th Oct 2011 (ID-11688) **Additional Information:** Reports (1) Press Archive (0)	23/10/2011	Exact Point
26.	Flooding at Dublin City on 07/01/2014 (ID-13042) **Additional Information:** Reports (0) Press Archive (0)	07/01/2014	Approximate Point
27.	Flooding at Dublin City on 03/02/2014 (ID-13093) **Additional Information:** Reports (0) Press Archive (0)	03/02/2014	Approximate Point

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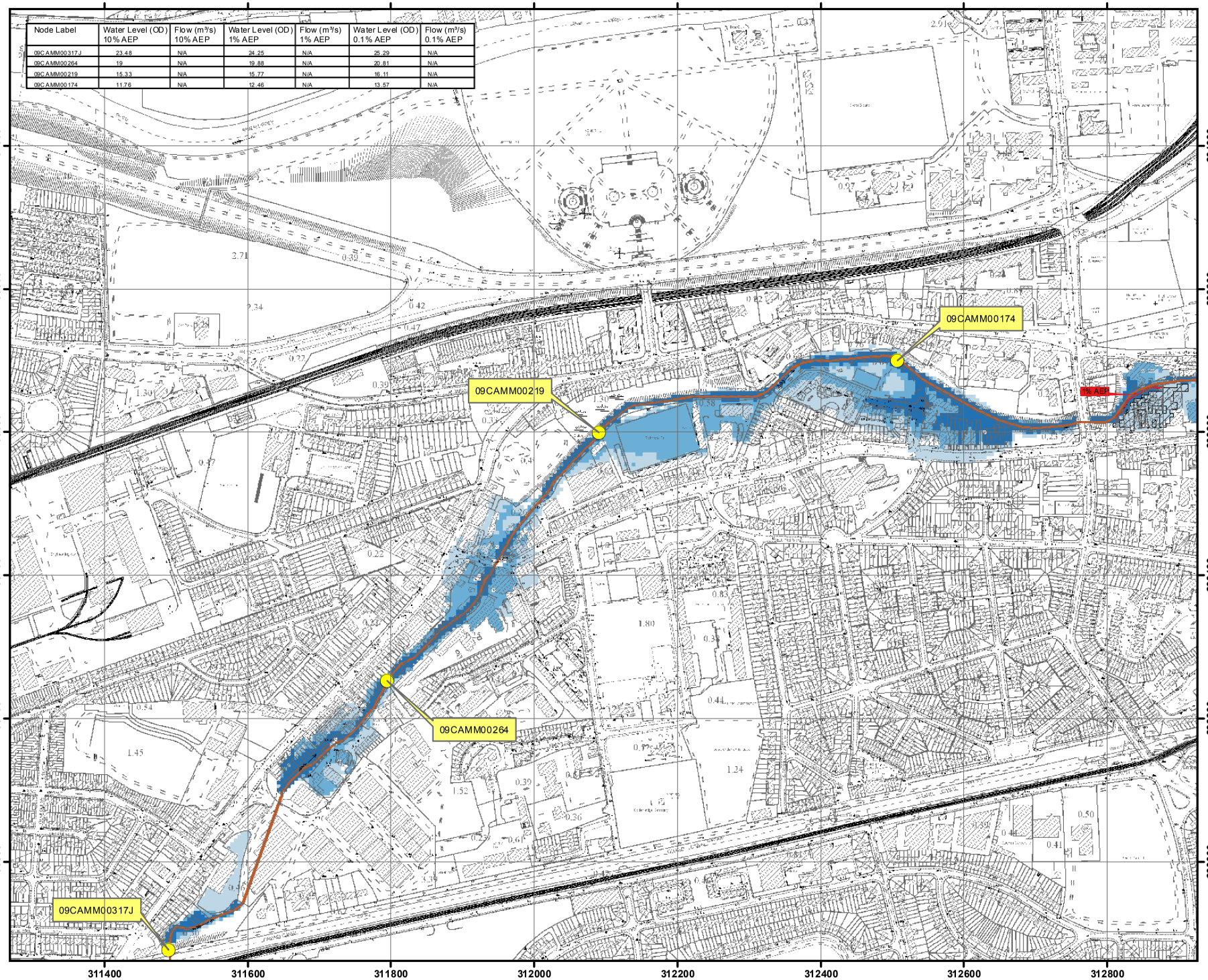
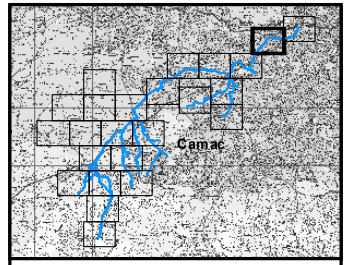
APPENDIX B. SFRA FLOOD EXTENT MAPPING

Appendix B

SFRA Flood Extent Mapping

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
09CAMM00317J	23.48	N/A	24.25	N/A	25.29	N/A
09CAMM00264	19	N/A	19.88	N/A	20.81	N/A
09CAMM00219	15.33	N/A	15.77	N/A	16.11	N/A
09CAMM00174	11.76	N/A	12.46	N/A	13.57	N/A





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
- Embankment
- Wall
- Defended Area
- 1% AEP — Standard of Protection of Flood Defence (Walls / Embankments)
- 1% AEP
- Node Point
- Node ID — Node Label

FINAL

REV:	NOTE:	DATE:
01	SOP label updated (Pg 21) Removal of Def. Area (Pg 21)	13/11/2017

EASTERN CFRAM STUDY
CATCHMENT FLOOD RISK ASSESSMENT AND MANAGEMENT

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Map: Camac Fluvial Flood Extents

Map Type:	EXTENT
Source:	FLUVIAL
Map Area:	HPW
Scenario:	CURRENT
Drawn By :	C.McG. Date : 13 November 2017
Checked By :	A.S. Date : 13 November 2017
Approved By :	S.P. Date : 13 November 2017
Drawing No. :	E09CAM_EXFCD_F1_23
Map Series :	Page 23 of 24
Drawing Scale :	1:5,000 @A3

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