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Site Specific Flood Risk Assessment

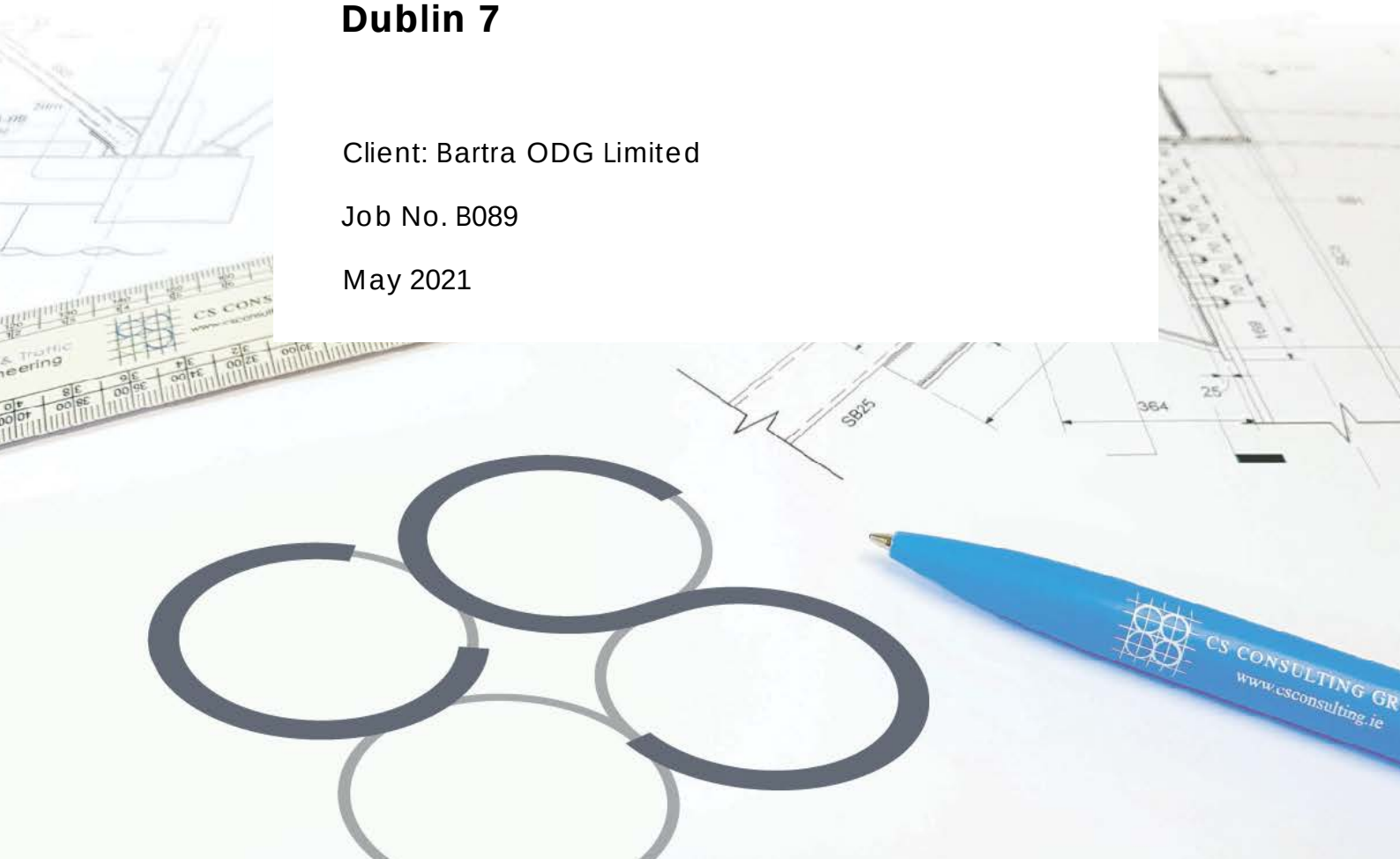
Strategic Housing Development

Former O'Devaney Gardens Site, Dublin 7

Client: Bartra ODG Limited

Job No. B089

May 2021



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SITE SPECIFIC FLOOD RISK ASSESSMENT

STRATEGIC HOUSING DEVELOPMENT, FORMER O'DEVANEY GARDENS SITE, DUBLIN 7

CONTENTS

File Location: j:\b_jobs\job-b089\b_documents\c_civil\a_cs reports\1 - planning application reports\fra\odg-csc-zz-xx-rp-c-0002_fra.docx

BS 1192 FIELD	**ODG-CSC-ZZ-XX-RP-C-0002_FRA**

Job Ref.	Author	Reviewed By	Authorised By	Issue Date	Rev. No.
B089	GS	RFM	DR	03.06.2020	Draft
B089	GS	RFM	DR	24.07.2020	P1
B089	RFM	RFM	DR	05.05.2021	P2

1.0 INTRODUCTION

Cronin & Sutton Consulting Engineers (CS Consulting) have been commissioned by Bartra ODG Limited to prepare a Site Specific Flood Risk Assessment to accompany a planning application for a residential development at O'Devaney Gardens, Stoneybatter, Dublin 7.

In preparing this report, CS Consulting has made reference to the following:

- Dublin City Development Plan 2016–2022;
  (including Strategic Flood Risk Assessment)
- Greater Dublin regional Code of Practice for Works;
- Office of Public Works Flood Maps;
- Department of the Environment Flooding Guidelines;
- Geological Survey of Ireland Maps;
- Local Authority Drainage Records.

The Site Specific Flood Risk Assessment has been carried out in accordance with '*Planning System and Flood Risk Management – Guidelines for Planning Authorities (2009)"* and is to be read in conjunction with the engineering drawings and documents submitted by CS Consulting and with the various additional information submitted by the other members of the design team, which forms part of the Planning Submission.

2.0 SITE LOCATION AND PROPOSED DEVELOPMENT

2.1 Site Location

The proposed development site is located at O'Devaney Gardens, Stoneybatter, Dublin 7. The site is located in the administrative jurisdiction of Dublin City Council and has a total area of approximately 5.20 ha.

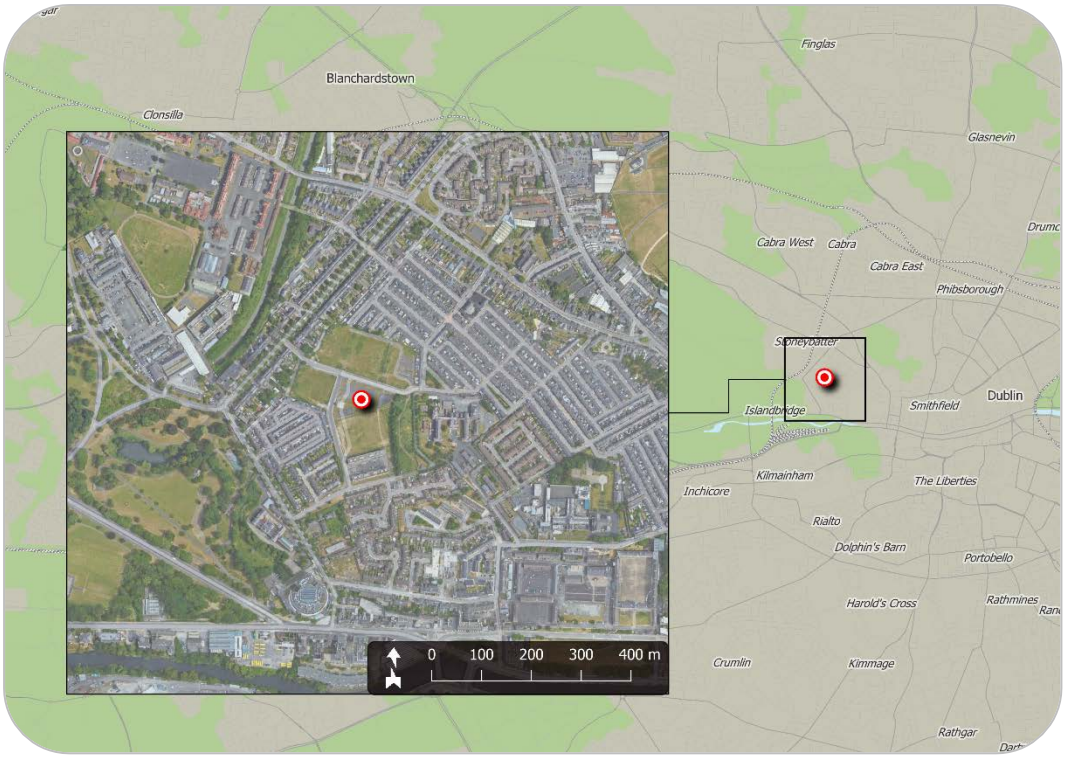


Figure 1 – Location of proposed development site
(*map data & imagery: EPA, OSi, OSM Contributors, Google*)

The location of the proposed development site is shown in Figure 1 above; the indicative extents of the development site, as well as relevant elements of the surrounding road network, are shown in more detail in Figure 2.

The site is bounded to the east by Saint Bricin's Military Hospital and residential properties, to the west by future development lands and residential properties and on all other sides by residential properties.

Figure 2 – Site extents and environs
(*map data & imagery: NTA, OSi, OSM Contributors, Microsoft*)

2.2 Existing Land Use

The subject site had previously been used for residential housing, in the form of a number of flat complexes. These have been removed from site. The subject lands are predominantly flat in nature with no water course or other physical features of note on the lands. To the north west of the lands a housing development is currently under construction. This estate and the services currently serving same will be required to be re-located into the proposed development.

2.3 Description of Proposed Development

The proposed Strategic Housing Development comprises the following elements of relevance to the present Traffic and Transport Assessment:

- 43no. dwelling houses (including 20no. duplex units);
- 1,004no. apartments;
- crèche with gross floor area of 489m^2;
- community space with gross floor area of 157m^2;
- convenience retail units with total gross floor area of 1,393m^2; and
- café unit with gross floor area of 155m^2.

The subject development's internal road network shall tie into the existing surrounding road network at the existing O'Devaney Gardens / North Circular Road junction (north of the development site), the repositioned O'Devaney Gardens / Montpelier Gardens junction (south of the development site), and the existing connection between O'Devaney Gardens and Thor Park (east of the development site). Provision is also made for pedestrian and cyclist connectivity onto Ross Street and onto Ashford Cottages, at the development site's northern boundary. The development includes 273no. car parking spaces, 3no. crèche set-down spaces, 2,000no. bicycle parking spaces, and 11no. motorcycle parking spaces.

A detailed description of the proposed development is provided in the Site Notice.

For the purposes of the present assessment, it is assumed that the subject development shall be completed and occupied by the year 2023.

3.0 PROCESS FOR SITE SPECIFIC FLOOD RISK ASSESSMENT

The initial stage of the SSFRA comprises an assessment of available flood risk data in order to identify flood risk indicators in the Study Area. If the site is identified to be at risk of flooding, the SSFRA will proceed to a detailed assessment.

3.1 POTENTIAL SOURCES OF FLOOD RISK

The Study Area is subject to the four potential flood risk mechanisms described below:

- Fluvial: flooding caused by overtopping of Rivers and Streams;
- Tidal: flooding caused by coastal sea level rises
- Pluvial: flooding caused when the intensity of rainfall events is such that the ground cannot absorb rainfall run-off effectively or urban drainage systems cannot carry the runoff generated;
- Groundwater: flooding caused by a rise in the level of the water table.

3.2 FLOOD RISK INDICATORS

Indicators of flood risk are identified using available data, most of which is historically derived. Typically, this data is not prescriptive in relation to flood return periods and neither predictive nor inclusive of climate change analysis.

Flood risk indicators include:

- Records available on the OPW's National Flood Risk Website. As part of the National Flood Risk Management Policy, the OPW developed the www.floodmaps.ie web-based data set, which contains information concerning historical flood data and displays related

mapped information and provides tools to search for and display information about selected flood events;

- PFRA & CFRAM mapping produced under the OPW CFRAM programme;
- Geological Survey of Ireland (GSI) mapping - Hydrogeological mapping maintained by the GSI and made available through its website www.gsi.ie;
- Ordnance Survey mapping - Ordnance Survey maps include areas which are marked as being "Liable to Floods". Generally, these areas are only shown identified indicatively and suggest historical flooding, usually recurrent. In addition, the maps indicate areas of wet or hummocky ground, bog, marsh, springs, rises and wells as well as surface water features including rivers, streams, bridges, weirs and dams;
- Topographical survey information;
- Ground Investigation information.

4.0 LEVEL OF SERVICE

There is an existing inherent risk of any flood event occurring during any given year. Typically, this likelihood of occurrence was traditionally expressed as a 1-in-100 chance of a 100 year storm event happening in any given year.

A less ambiguous expression of probability is the Annual Exceedance Probability (AEP), which may be defined as the probability of a flood event being exceeded in any given year. Therefore a 1-in-100-year event has a return period of 1% AEP flood event, similarly a 100% AEP can be expressed as a 1-in-1-year event.

The Planning System and Flood Risk Management, Guidelines for Planning Authorities set out the best practice standards for flood risk assessment in Ireland. These are summarized in Table 1.

Flooding Source	Drainage	River	Tidal/Coastal
Residential	1% AEP	0.1% AEP	0.1% AEP
Commercial	1% AEP	1% AEP	0.5% AEP
Water-compatible (docks, marinas)	-	>1% AEP	>0.5% AEP

Table 1 – Summary of Level of Service – Flooding Source

Under these guidelines a proposed development site has first to be assessed to determine the flood zone category it falls under.

It is a requirement of both Dublin City Council, Greater Dublin Strategic Drainage Study, (DCC 2005) & the Department of the Environment, community & Local Government flooding guidelines, The Planning System and Flood Risk Management, Guidelines for Planning Authorities, that the

predicted effects of climate change are incorporated into any proposed design. Table 2 below indicates the predicted climate change variations.

Design Category	Predicted Impact of Climate Change
Drainage	20% Increase in rainfall
Fluvial (River flows)	20% Increase in flood flow
Tidal / Coastal	Minimum Finished Floor Level 4.0 – 4.15m AOD

Table 2 - The predicted climate change variations.

The flooding guidelines categorize the risks associated with flooding into three areas, Zone A, B & C. This categorisation is indicated below.

- **Zone A** – High Probability of Flooding. Where the average probability of flooding from rivers and sea is highest (greater than 1% annually or 1 in 100 for river flooding or 0.5% annually or 1 in 200 for coastal flooding).
- **Zone B** – Moderate Probability of Flooding. Where the average probability of flooding from rivers and sea is moderate (risk between 0.1% annually or 1 in 1000 years and 1% annually or 1 in 100 years for river flooding, and between 0.1% or 1 in 1000 years and 0.5% annually or 1 in 200 for coastal flooding).
- **Zone C** – Low Probability of Flooding. Where the probability of flooding from rivers and sea is moderate (risk is less than 0.1% annually or 1 in 1000 years for both rivers and coastal flooding).

In accordance with the *Planning Systems and Flood Risk Management Guidelines for Planning Authorities*, dwellings are classified as 'highly vulnerable developments'.

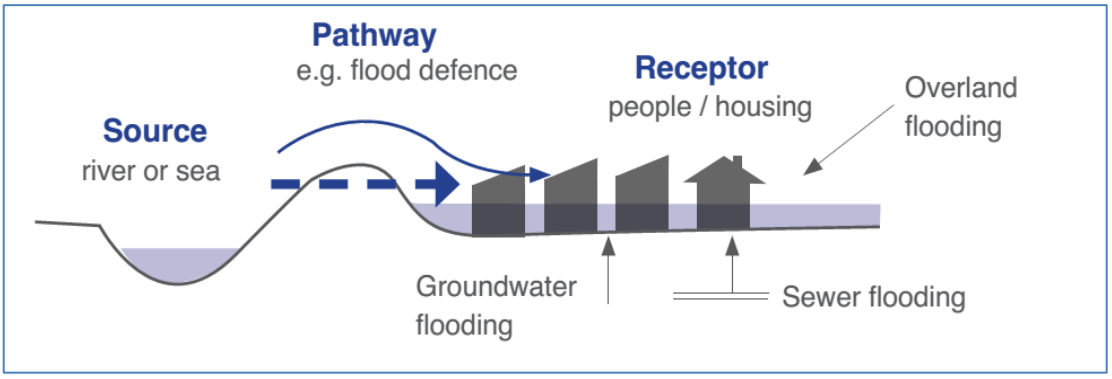


Figure 3 – Source-pathway-receptor model
(*imagery: The Planning System and Flood Risk Management Guidelines*)

The flooding guidelines have developed an 'appropriateness' matrix for various developments and their potential risk factor. The table indicates if further analysis is required in the form of a justification test. Table 3 below outlines the conditions that require a justification test.

	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

Table 3 - Flood Zone Vs Justification Test Matrix

Following a review of the Dublin City Council flood maps, the subject lands are located in **Flood Zone C**. See **Appendix A**.

5.0 FLOOD RISKS & MITIGATION MEASURES

5.1 Fluvial Flooding

5.1.1 Flood Risk Indicators

The following were interrogated for indicators of fluvial flood risk:

- The OPW maintains the National Flood Hazard Mapping website which contains information about locations that may be at risk from flooding. The source of this information includes Local Authorities and other historic records such as newspaper articles and other documentation about reported floods. There is no evidence of any recorded flood events at the subject Site (a copy of the summary report is included in **Appendix B**).
- The River Liffey is located to the south of the subject site. The Eastern Catchment Flood Risk Assessment and Management Study 2017, conducted by RPS Consulting Engineers and OPW, indicates that the subject site is deemed to be located outside of the 0.1% AEP fluvial floodplain based on the currently available maps, see **Appendix C**. The nearest node point indicates a flood level of 3.5m AOD for the 1000-year flood level. The proposed levels of the development are in excess of 21.60m AOD and therefore the sites location is such that it is not affected by fluvial flooding from the River Liffey.
- Historical Ordnance Survey OS maps for the subject site do not show any indicators of flood risk.

5.1.2 Results Of Initial Assessment

The available data described above does not provide any indication of fluvial flood risk in the Study Area. Therefore, in accordance with 'Planning

System and Flood Risk Management – Guidelines for Planning Authorities (2009)' *a detailed assessment of this flooding mechanism is not required*.

5.2 Tidal Flooding

5.2.1 Flood Risk Indicators

- The OPW maintains the National Flood Hazard Mapping website which contains information about locations that may be at risk from flooding. The source of this information includes Local Authorities and other historic records such as newspaper articles and other documentation about reported floods. There is no evidence of any recorded flood events at the subject Site (a copy of the summary report is included in **Appendix B**).

- The subject site is not in proximity to the coast but the potential for onsite tidal flooding needs to be considered due to tidal effects on River Liffey which indicates that the subject site is deemed to be located outside the 0.5% AEP tidal floodplain based on the currently available maps, see **Appendix D**. The nearest node point indicates a flood level of 3.48m AOD for the 1000-year flood level. The proposed levels of the development are in excess of this level and therefore the sites location is such that it is not affected by tidal water flooding.
- The coast of Ireland has also been modelled by the OPW as part of the Irish Coastal Protection Strategy Study – Phase 3. This study looked at the potential future flooding should climate change have a dramatic effect on sea levels. The study took a 'mid-range' level for sea level rise of 500mm above current levels and a 'high end' level of 1000mm above existing levels and then re-modelled the effects. The effects indicate that the site would be outside of the flooded area. See **Appendix E** for ICPSS Maps.

- Historical Ordnance Survey OS maps for the subject site do not show any indicators of flood risk.

5.2.2 Results Of Initial Assessment

The available data described above does not indicate the risk of tidal flooding on the development site. Therefore, in accordance with 'Planning System and Flood Risk Management – Guidelines for Planning Authorities (2009)' *a detailed assessment of this flooding mechanism is not required*.

5.3 Pluvial Flooding

5.3.1 Flood Risk Indicators

- The OPW maintains the National Flood Hazard Mapping website which contains information about locations that may be at risk from flooding. The source of this information includes Local Authorities and other historic records such as newspaper articles and other documentation about reported floods. There is no evidence of any recorded flood events at the subject Site (a copy of the summary report is included in **Appendix B**).

Pluvial flooding is flooding which has originated from overland flow resulting from high intensity rain fall. The historical and predicted flooding information does not indicate that the subject lands are at risk from pluvial flood events.

5.3.2 Surface Water Drainage for The Proposed Development

The proposed surface water strategy and drainage design for the development are outlined within the Engineering Services Report, that accompanies this planning application. In summary, road drainage is collected by gullies and roofs are drained to a proposed attenuation tanks located in subject site. The surface water then discharges into the

stormwater sewer located on the existing stormwater sewer on Montpeller Gardens.

Please refer to the CS Consulting Engineering Services Report for more details.

5.3.3 Results Of Initial Assessment

Based on the above, there is no indication of pluvial flood risk to the subject site. Therefore, in accordance with 'Planning System and Flood Risk Management – Guidelines for Planning Authorities (2009)' *a detailed assessment of this flooding mechanism is not required*.

5.4 Groundwater Flooding

5.4.1 Flood Risk Indicators

A review of the Geological Survey of Irelands database, (www.GSI.ie) gives background data to the site's geology and hydrogeological properties. The site is underlain with Dark limestone and shale and forms part of the Lucan Formation. The GSI classifies the regional aquifer as locally important and moderately productive with a vulnerability classification as low.
The proposed alteration to the existing site will not increase the potential for groundwater flooding as such the risk is deemed acceptable. See **Appendix F** for GSI mapping information for background groundwater and geology data for the subject site.

5.4.2 Results Of Initial Assessment

Based on the above, there is no indication of groundwater flood risk to the subject site. Therefore, in accordance with 'Planning System and Flood Risk Management – Guidelines for Planning Authorities (2009)' *a detailed assessment of this flooding mechanism is not required*.

6.0 OPINION FROM PLANNING BOARD

The opinion from Dublin City Council submitted to the planning board as part of the stage two submission noted that cognizance should be given to the potential risk of flooding from the existing storm water attention system located on the subject lands that is to be removed and incorporated into the proposed developments new drainage system.

The proposed new attenuation system for the subject lands has been sized to account for the existing storage area. It is intended that the new storage area will be constructed at the outset of the development commencing. Following same the existing storm water system will be diverted into the new attenuation area. This will ensure that during the construction period the risk of on site flooding originating from the completed development has been mitigated against.

7.0 CONCLUSION

7.1.1 Fluvial Flood Risk

There were no indicators of fluvial flood risk associated with the development site and therefore, in accordance with 'Planning System and Flood Risk Management – Guidelines for Planning Authorities (2009)' [the 'FRM Guidelines'] detailed assessment of this flooding mechanism is not required.

7.1.2 Tidal Flood Risk

The available data described above does not indicate the risk of tidal flooding on the development site. Therefore, in accordance with 'Planning System and Flood Risk Management – Guidelines for Planning Authorities (2009)' a detailed assessment of this flooding mechanism is not required.

7.1.3 Pluvial Flood Risk

The pluvial flood-risk indicators described in Section 5.3 do not provide any indication of pluvial flooding at the subject site and therefore, in accordance with 'Planning System and Flood Risk Management – Guidelines for Planning Authorities (2009)' [the 'FRM Guidelines'] detailed assessment of this flooding mechanism is not required.

7.1.4 Flood Risk from Ground Water

Geological Survey of Ireland (GSI) interactive maps do not provide any indication of flood risk from groundwater at the subject site and therefore, in accordance with 'Planning System and Flood Risk Management – Guidelines for Planning Authorities (2009)' [the 'PSFRM Guidelines'] detailed assessment of this flooding mechanism is not required.

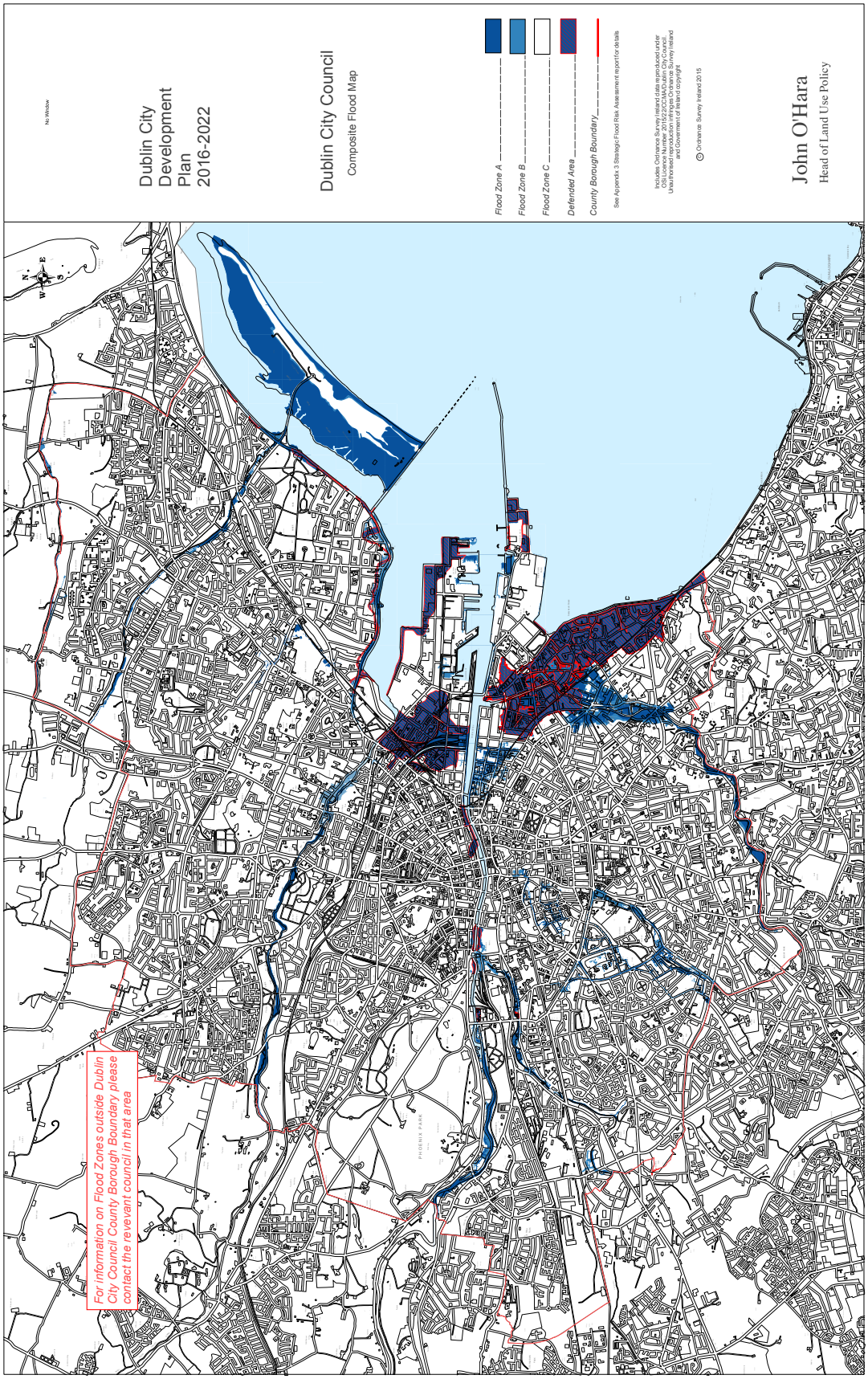
The proposed development was subject to SSFRA in accordance with OPW Flood Risk Management Guidelines. This SSFRA did not find any indicators of the proposed development being at risk from fluvial, pluvial or groundwater flooding; also, the SSFRA did not find any indicators that the proposed development will give rise to flood risk elsewhere.

Appendix A:

Dublin City Council Flood Zone Mapping

Appendix 5

Composite Flood Zone Map


Dublin City Development Plan 2016-2022
Dublin City Council
Composite Flood Map
Flood Zone A
Flood Zone B
Flood Zone C
Defended Area
County Borough Boundary
See Appendix 3 Strategic Flood Risk Assessment report for details
Includes Ordnance Survey Ireland data reproduced under OSi Licence number 2009/06/CCMA/Dublin City Council Unauthorised reproduction infringes Ordnance Survey Ireland and Government of Ireland copyright
© Ordnance Survey Ireland 2015
John O'Hara
Head of Land Use Policy
For information on Flood Zones outside Dublin City Council County Borough Boundary please contact the revevant council in that area

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Appendix B:

Office of Public Works Historic Flood Report

OPW National Flood Hazard Mapping

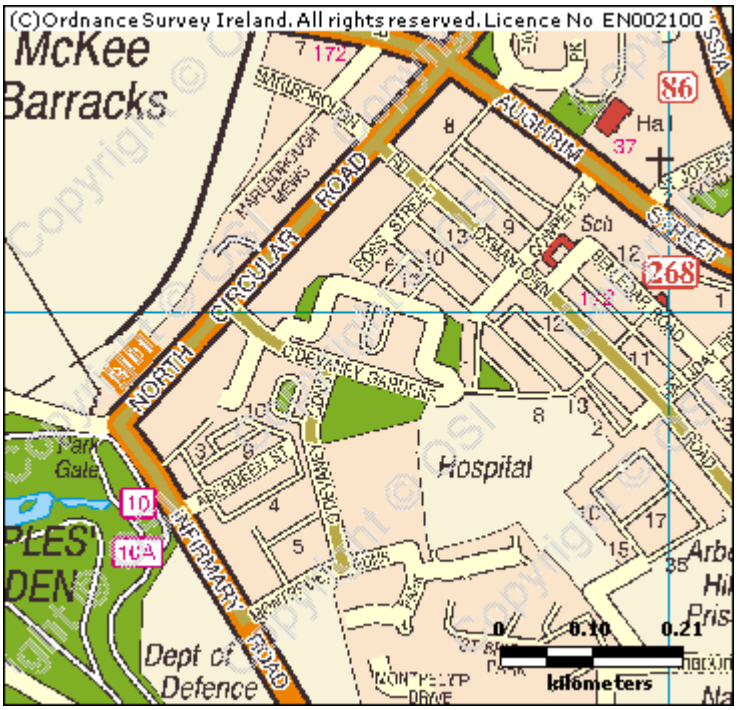
Summary Local Area Report

This Flood Report summarises all flood events within 2.5 kilometres of the map centre.

The map centre is in:

County: Dublin

NGR: O 136 349



Map Scale 1:8,616

Map Legend	
	Flood Points
	Multiple / Recurring Flood Points
	Areas Flooded
	Hydrometric Stations
	Rivers
	Lakes
	River Catchment Areas
	Land Commission *
	Drainage Districts *
	Benefiting Lands *

* Important: These maps do not indicate flood hazard or flood extent. Thier purpose and scope is explained in the Glossary.

15 Results

1. Flooding at Lady's Lane, Kilmainham, Co. Dublin on 24th Oct 2011
County: Dublin
Start Date: 24/Oct/2011
Flood Quality Code:2
Additional Information: Reports (1) More Mapped Information

2. Flooding at Kearns Place, Kilmainham, Dublin 8 on 24th Oct 2011
County: Dublin
Start Date: 24/Oct/2011
Flood Quality Code:2
Additional Information: Reports (1) More Mapped Information

3. Flooding at Bow Lane, Kilmainham, Dublin 8 on 24th Oct 2011
County: Dublin
Start Date: 24/Oct/2011
Flood Quality Code:3
Additional Information: Reports (1) More Mapped Information

4. Dublin City Tidal Feb 2002
County: Dublin
Start Date: 01/Feb/2002
Flood Quality Code:1
Additional Information: Photos (32) Reports (10) Press Archive (27) More Mapped Information

5. Liffey Lower - Dec 1954
County: Kildare, Dublin
Start Date: 08/Dec/1954
Flood Quality Code:2

Additional Information: Reports (4) Press Archive (2) More Mapped Information

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6. Camac August 1986
County: Dublin
Start Date: 25/Aug/1986
Flood Quality Code:2

Additional Information: Reports (3) More Mapped Information

7. Camac Turvey Ave Recurring
County: Dublin
Start Date:
Flood Quality Code:3

Additional Information: Reports (1) More Mapped Information

8. Camac Bow Bridge Recurring
County: Dublin
Start Date:
Flood Quality Code:3

Additional Information: Reports (1) More Mapped Information

9. Camac Kearns Place Recurring
County: Dublin
Start Date:
Flood Quality Code:3

Additional Information: Reports (1) More Mapped Information

10. Camac Carrickfoyle Terrace Recurring
County: Dublin
Start Date:
Flood Quality Code:3

Additional Information: Reports (1) More Mapped Information

11. Clanbrassil Street June 1963
County: Dublin
Start Date: 11/Jun/1963
Flood Quality Code:3

Additional Information: Reports (3) Press Archive (2) More Mapped Information

---

12. Poddle Tributary Marrowbone Lane Jan 1941
County: Dublin
Start Date: 21/Jan/1941
Flood Quality Code:4

Additional Information: Reports (1) More Mapped Information

13. Flooding at Broombridge Railway Station on 24th October 2011
County: Dublin
Start Date: 24/Oct/2011
Flood Quality Code:2

Additional Information: Reports (1) More Mapped Information

14. Flooding at Bridgewater Quay Apartments, Islandbridge, Dublin 8, on 24th Oct 2011
County: Dublin
Start Date: 24/Oct/2011
Flood Quality Code:2

Additional Information: Reports (1) More Mapped Information

15. Flooding at Ashling Hotel, Parkgate Street, Dublin 8 on 24th Oct 2011
County: Dublin
Start Date: 24/Oct/2011
Flood Quality Code:2

Additional Information: Reports (1) More Mapped Information

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Appendix C:

Eastern Catchment Flood Risk Assessment and Management Mapping –

Fluvial Flood Extent Map

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
09LIFF00513	2.82	149.62	3.10	205.77	3.50	275.16
09LIFF00508	2.82	149.90	3.11	205.77	3.51	275.14
09LIFF00469	2.75	153.34	2.99	207.08	3.36	276.42
09LIFF00452	2.71	154.33	2.92	208.54	3.23	276.87
09LIFF00419	2.64	156.52	2.80	210.16	3.04	278.18
09LIFF00400	2.61	158.04	2.74	211.32	2.94	279.13

313400 313600 313800 314000 314200 314400 314600 314800

235000 234800 234600 234400 234200 234000 233800

Fluvially influenced flooding does not extend downstream of this point. Please refer to tidal flood maps Figure No. E09LIF_EXCCD_F0_02.

09LIFF00508

09LIFF00513

09LIFF00469

09LIFF00452

09LIFF00419

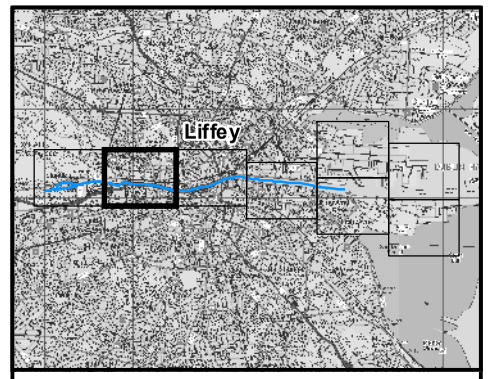
09LIFF00400

For river Camac flood extents and depths Refer to Camac HPW maps.

Currently Undefended - Contact DCC for further information.

St James's Gate Brewery

0 50 100 200 300 400 500 Metres



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:
01	Amendments to Flood Extents.	05/12/16

EASTERN CFRAM STUDY
CATCHMENT FLOOD RISK ASSESSMENT AND MANAGEMENT

OPW
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RPS

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Map:
Liffey Fluvial Flood Extents

Map Type:	EXTENT
Source:	FLUVIAL
Map Area:	HPW
Scenario:	CURRENT
Drawn By : C.C.	Date : 9 May 2017
Checked By : A.S.	Date : 9 May 2017
Approved By : S.P.	Date : 9 May 2017

Drawing No. :
E09LIF_EXFCD_F1_02

Map Series : Page 2 of 8

Drawing Scale : 1:5,000 @ A3

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Appendix D:

Eastern Catchment Flood Risk Assessment and Management Mapping –

Tidal Flood Extent Map

Node Label	Water Level (OD) 10% AEP	Flow (m³/s) 10% AEP	Water Level (OD) 0.5% AEP	Flow (m³/s) 0.5% AEP	Water Level (OD) 0.1% AEP	Flow (m³/s) 0.1% AEP
09LIFF00513	2.86	112.55	3.27	115.00	3.48	116.33
09LIFF00469	2.82	N/A	3.24	N/A	3.46	N/A
09LIFF00452	2.71	118.39	2.92	121.24	3.23	123.62
09LIFF00419	2.77	N/A	3.19	N/A	3.41	N/A
09LIFF00400	2.75	N/A	3.18	N/A	3.40	N/A

Tidally influenced flooding does not extend upstream of this point. Please refer to fluvial flood maps Figure No. E09LIF_EXFCD_F0_02.

09LIFF00513

09LIFF00469

09LIFF00452

09LIFF00419

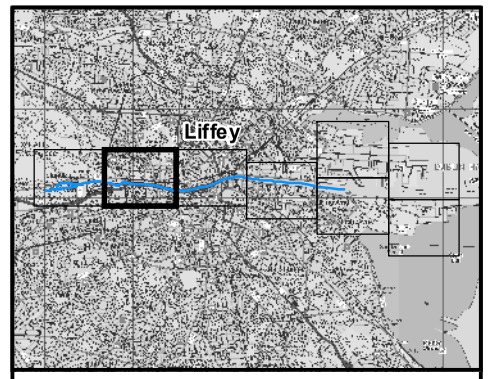
09LIFF00400

St James's Gate Brewery

313400 313600 313800 314000 314200 314400 314600 314800

235000 234800 234600 234400 234200 234000 233800

0 50 100 200 300 400 500 Metres



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% Tidal AEP Event
- 0.5% Tidal AEP Event
- 0.1% Tidal AEP Event
- Modelled River Centreline
- AFA Extents
- Node Point
- Node ID Node Label

FINAL

REV:	NOTE:	DATE:
01	Amendments to Flood Extents.	05/12/16

EASTERN CFRAM STUDY
CATCHMENT FLOOD RISK ASSESSMENT AND MANAGEMENT

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

Map:
Liffey Tidal Flood Extents

Map Type:	EXTENT
Source:	TIDAL
Map Area:	COASTAL
Scenario:	CURRENT
Drawn By : C.C.	Date : 9 May 2017
Checked By : A.S.	Date : 9 May 2017
Approved By : S.P.	Date : 9 May 2017

Drawing No. :
E09LIF_EXCCD_F1_02

Map Series : Page 2 of 8

Drawing Scale : 1:5,000 @ A3

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Appendix E:

Irish Coastal Protection Strategy Study – Phase III –

North East Coast Flood Extent Map

NOTE: MORE DETAILED MAPS SHOWING COMBINED TIDAL AND FLUVIAL FLOOD HAZARD FOR PART OF THIS AREA (DODDER CATCHMENT ONLY) HAVE BEEN PREPARED UNDER THE RIVER DODDER CATCHMENT FRAM STUDY. PLEASE REFER TO WWW.DUBLINCITY.IE/PAGES/DODDERFLOODINGSTUDY.ASPX FOR MORE INFORMATION

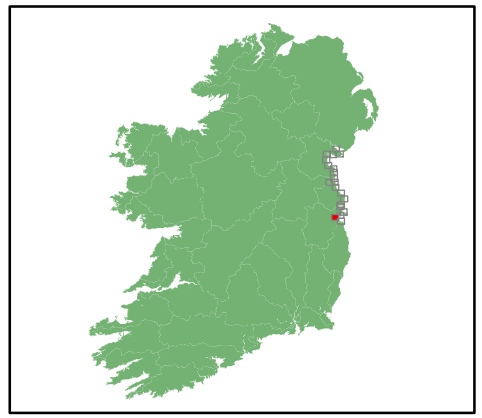
N

Point 22

	Water Level (mOD Malin) per AEP		
Node Label	WL 10%	WL 0.5 %	WL 0.1 %
Point 22	2.67	3.07	3.28

0.5 0.25 0 0.5 1 1.5 2 Kilometers

Location Plan :



EXTENT MAP

Legend:

- 0.5% AEP FLOOD EXTENT (1 in 200 chance in any given year)
- 0.1% AEP FLOOD EXTENT (1 in 1000 chance in any given year)
- Very High Confidence (0.1% AEP)
- High Confidence (0.1% AEP)
- Medium Confidence (0.1% AEP)
- Low Confidence (0.1% AEP)
- Very Low Confidence (0.1% AEP)
- Very High Confidence (0.5% AEP)
- High Confidence (0.5% AEP)
- Medium Confidence (0.5% AEP)
- Low Confidence (0.5% AEP)
- Very Low Confidence (0.5% AEP)
- High Water Mark (HWM)
- Node Point
- Point 34 Node Label (refer to table)

USER NOTE :

USERS OF THESE MAPS SHOULD REFER TO THE DETAILED DESCRIPTION OF THEIR DERIVATION, LIMITATIONS IN ACCURACY AND GUIDANCE AND CONDITIONS OF USE PROVIDED AT THE FRONT OF THIS BOUND VOLUME. IF THIS MAP DOES NOT FORM PART OF A BOUND VOLUME, IT SHOULD NOT BE USED FOR ANY PURPOSE.

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OPW
Office of Public Works
17-19 Lower Hatch Street
Dublin 2
Ireland

Project :
IRISH COASTAL PROTECTION STRATEGY STUDY - PHASE III

Map :
NORTH EAST COAST FLOOD EXTENT MAP

Map Type :	FLOOD EXTENT		
Source :	TIDAL FLOODING		
Map area :	RURAL AREA		
Scenario :	CURRENT		
Figure By :	PJW	Date :	Jan 2010
Checked By :	JMC	Date :	Jan 2010

Figure No. : NE / RA / EXT / 19

Revision 1

Drawing Scale : 1:25,000 Plot Scale : 1:1 @ A3

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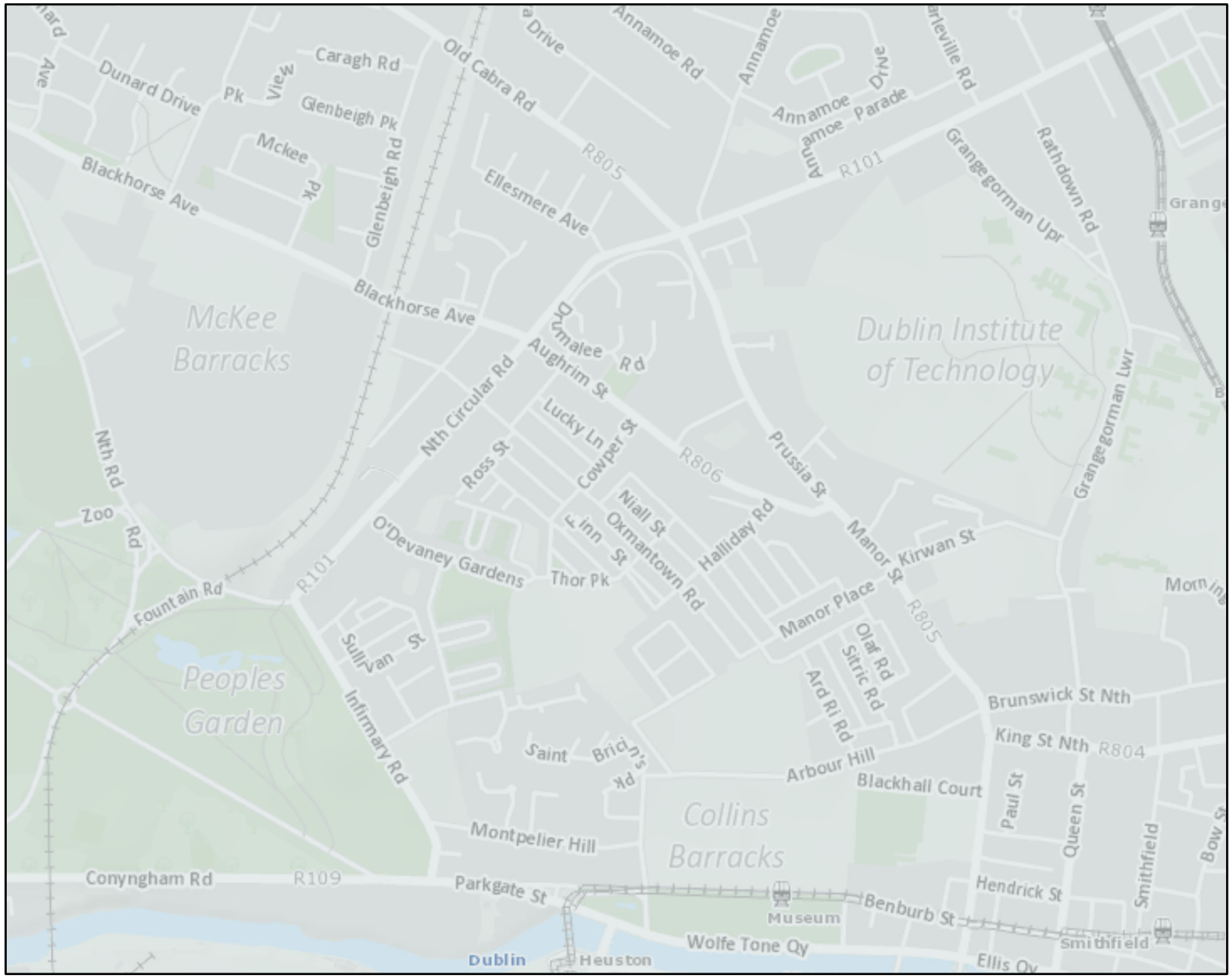
Appendix F:

Geological Survey of Ireland –

Hydrogeology & Bedrock Geology Maps

Geological Survey
Suirbhéireacht Gheolaíochta
Ireland | Éireann

Job no. B089 Geological Data



Scale: 1:10,000

Geological Survey Ireland

N W E S

0 0.05 0.1 0.2 mi
0 0.1 0.2 0.4 km

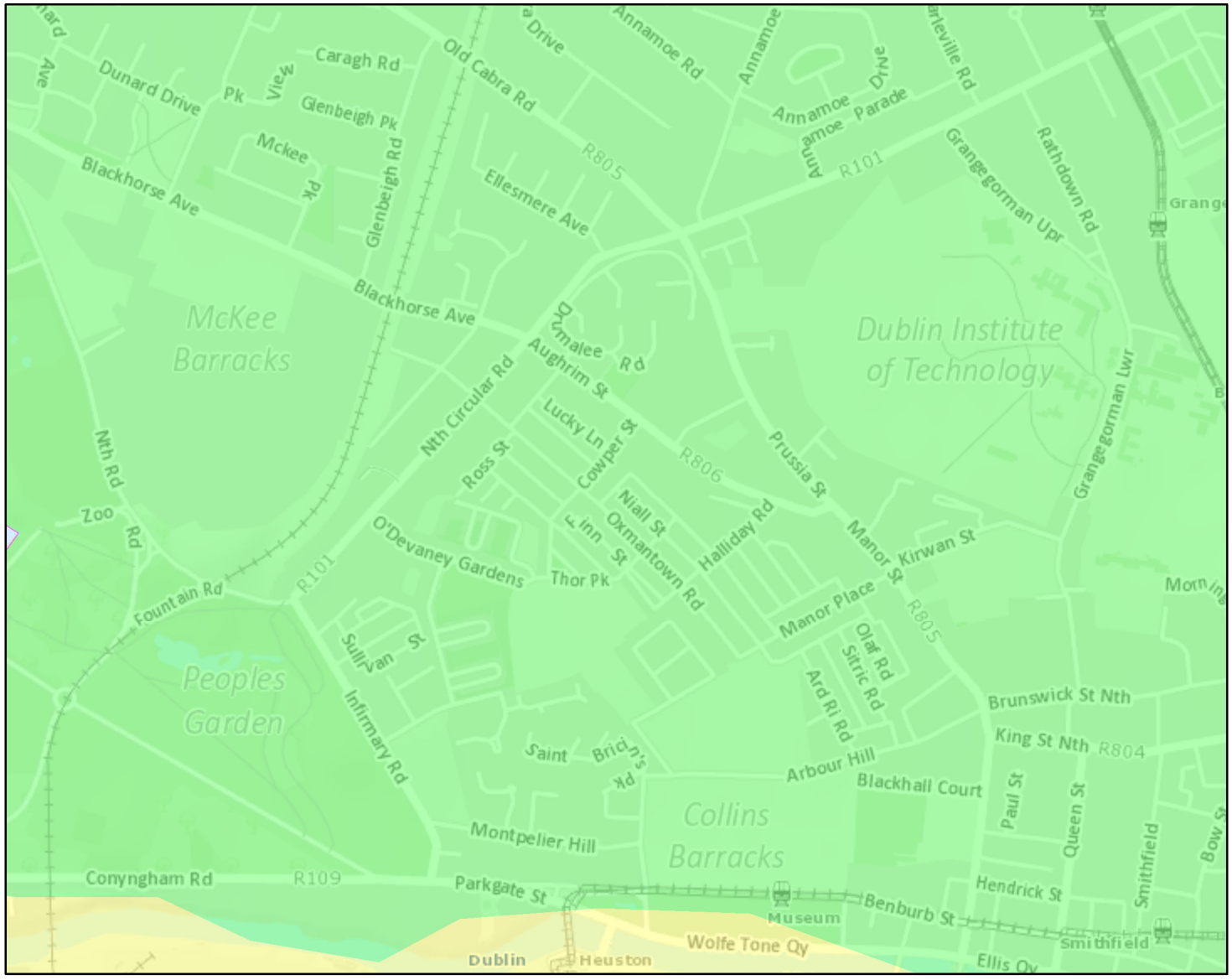
Map Centre Coordinates (ITM) 713,814 735,075
11/06/2020 13:06:52

Legend

- Lucan Formation

Geological Survey
Suirbhéireacht Gheolaíochta
Ireland | Éireann

Job no. B089 Hydrogeological Data



Scale: 1:10,000

Geological Survey Ireland

N W E S

0 0.05 0.1 0.2 mi
0 0.1 0.2 0.4 km

Map Centre Coordinates (ITM) 713,814 735,075
11/06/2020 13:02:12

Legend

National Groundwater Vulnerability Ireland

VULNERABILITY

- Moderate
- Low
- Water

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