

FLOOD RISK ASSESSMENT REPORT

Ancillary Structures for the Development of the Quayside Buildings

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Contents

1	INTRODUCTION	1
1.1	Terms of Reference and Scope	1
1.2	Flood Risk Assessment; Aims and Objectives	1
2	BACKGROUND	2
2.1	Site Location.....	2
2.2	Proposed Development.....	2
3	EXISTING SITE CHARACTERISTICS	6
3.1	Existing Site Description	6
3.2	Hydrology & Drainage	6
3.3	Topography	7
3.4	Geology	7
3.5	Land Use Zoning – Dublin City Development Plan 2022-2028	7
4	FLOOD RISK IDENTIFICATION – STAGE 1	9
4.1	Flooding History	9
4.1.1	OPW Flood Hazard Mapping	9
4.1.2	Historic Mapping	9
4.1.3	Anecdotal Evidence	10
4.1.4	GSI Historical Groundwater Flooding	10
4.1.5	Internet Search	10
4.2	Predictive Flood Risk Mapping.....	10
4.2.1	OPW National Coastal Flood Hazard Mapping (NCFHM).....	10
4.2.2	OPW Catchment Flood Risk Assessment and Management (CFRAM) Mapping – Fluvial.....	12
4.2.3	OPW Catchment Flood Risk Assessment and Management (CFRAM) Mapping – Coastal.....	12
4.2.4	Pluvial Flooding.....	13
4.2.5	GSI Predictive Groundwater Flooding	13
4.2.6	Strategic Flood Risk Assessment (SFRA)	13
4.3	Stage 1 Conclusion	13
5	INITIAL FLOOD RISK ASSESSMENT – STAGE 2	14
5.1	Vulnerability Classification	14
5.2	Boardwalk/Pontoon Design Levels	14
5.3	Climate Change	15
5.4	Access and Egress	15
5.5	Residual Flood Risk	15
5.6	Stage 2 Conclusion	16
6	CONCLUSION	17

Tables

Table 4-1: Summary of Flood Risk Identification.....	13
Table 5-1: Classification of Vulnerability of Different Types of Development.....	14
Table 5-2: Proposed Development Levels against Predicted Flood Levels.....	14
Table 5-3: Freeboard of Proposed Development	15

Figures

Figure 2-1: Site Location.....	2
Figure 2-2: Pontoons to be removed/ relocated (Planning Report, Urban Agency).....	3
Figure 2-3: Proposed Development (Planning Report, Urban Agency)	3
Figure 2-4: Upstream (US) Boardwalk levels (Planning Report, Urban Agency).....	4
Figure 2-5: Downstream (DS) Boardwalk levels (Planning Report, Urban Agency)	4
Figure 2-6: Cross section of boardwalk (Planning Report, Urban Agency).....	5
Figure 3-1: Existing Site Layout (Planning Report, Urban Agency)	6
Figure 3-2: Existing Watercourses	6
Figure 3-3: Existing elevations (Planning Report, Urban Agency)	7
Figure 3-4: Proposed Development Site overlapping Land Use Zones (DCDP 2022-2028).....	8
Figure 4-1: OPW Past Flood Events	9
Figure 4-2: Location of NE22.....	10
Figure 4-3: NCFHM Coastal Flood Mapping - Present Day	11
Figure 4-4: Predicted Flood Levels (Extract from ICWWS).....	11
Figure 4-5: CFRAM Fluvial Flood Mapping - Present Day	12
Figure 4-6: CFRAM Coastal Flood Mapping - Present Day	12

Appendices

Appendix A The Planning System and Flood Risk Management

Appendix B DCDP 2022-2028 SFRA Flood Maps

1 INTRODUCTION

Under the Planning System and Flood Risk Management Guidelines for Planning Authorities (the guidelines) (DoEHLG & OPW, 2009) the proposed development must undergo a Flood Risk Assessment to ensure sustainable and effective management of flood risk.

1.1 Terms of Reference and Scope

RPS Consulting was instructed by Dublin City Council to prepare a Site-Specific Flood Risk Assessment (FRA) to assess the proposed development of quayside pontoon canopies and gangways located within the Docklands area of Dublin City Centre. The FRA was undertaken in relation to the Dublin City Council (DCC) County Development Plan 2022-2028 (CDP), including Strategic Flood Risk Assessment (SFRA), and in accordance with the Planning System and Flood Risk Management Guidelines for Planning Authorities (DoEHLG & OPW, 2009)

1.2 Flood Risk Assessment; Aims and Objectives

This study was completed to assess the proposed development of the site as it relates to flood risk. It aims to identify, quantify, and communicate to Planning Authority officials and other stakeholders the risk of flooding to land, property and people and the measures required to manage the risk.

The objectives of this FRA are to:

- Identify potential sources of flood risk;
- Confirm the level of flood risk and identify key hydraulic features;
- Assess the impact that development has on flood risk;
- Develop appropriate flood risk mitigation and management measures which will allow for the long-term development of the site.
- Review the likely effects of climate change and residual risk

Conclusions of the assessment are provided in the context of the OPW / DoEHLG planning guidance, "The Planning System and Flood Risk Management".

For general information on flooding, the definition of flood risk, flood zones and other terms see 'Understanding Flood Risk' in **Appendix A**.

2 BACKGROUND

2.1 Site Location

The proposed site is located at Dublin City Moorings, Custom House Quay, on an existing pontoon structure adjacent to the current Dublin Docklands office building (illustrated in **Figure 2-1**). It is immediately downstream of the Sean O’Casey Bridge.

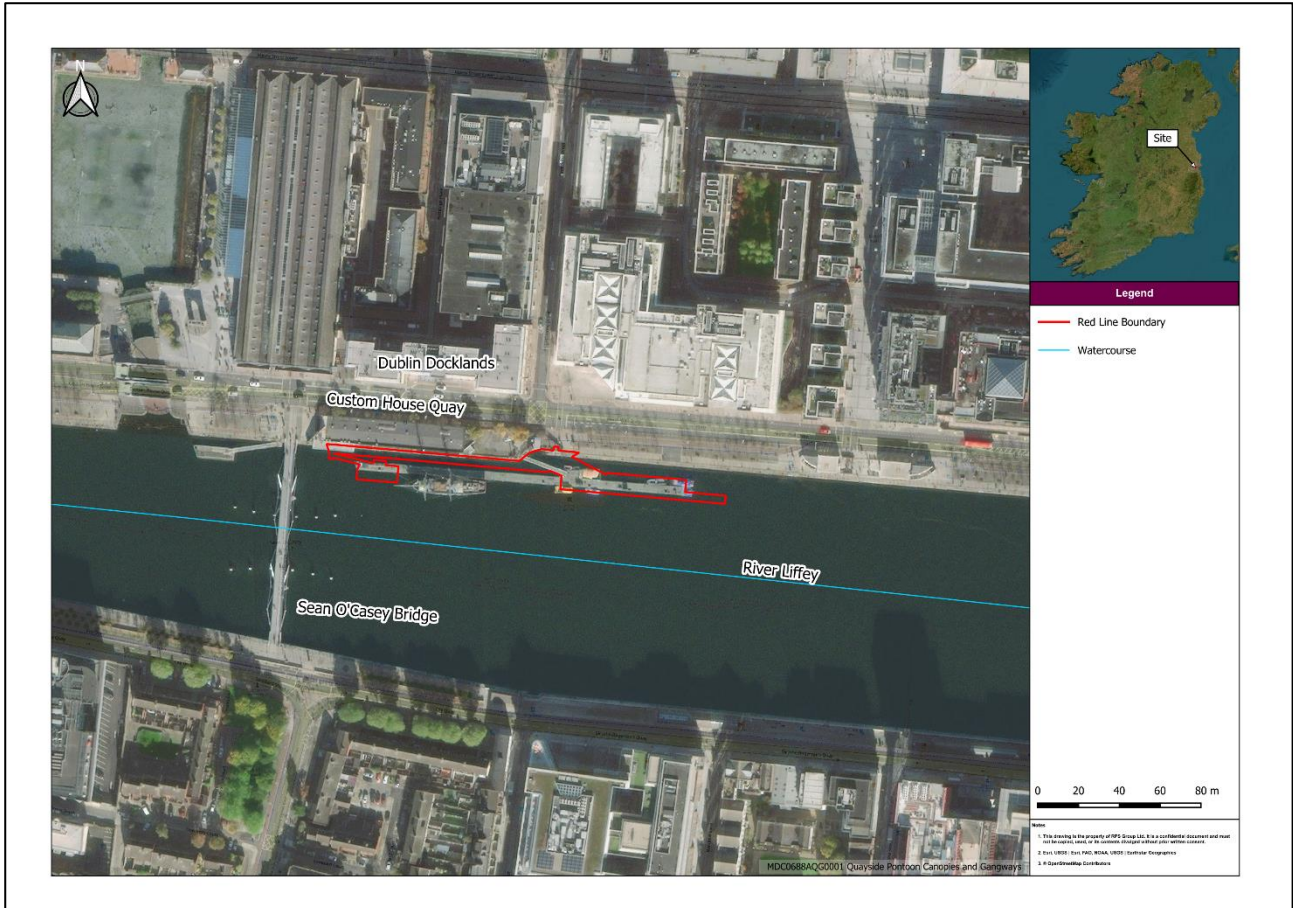


Figure 2-1: Site Location

2.2 Proposed Development

The proposed development will consist of the below elements:

- Extended Boardwalk and glass balustrading 4.2m in width joining to the granted 1.8m wide boardwalk and elevated above the Quay Wall protected structure level. Proposed area 495 Sq.m total
- Relocation of existing gangway (N.01) further in the East direction
- Relocation and removal of existing pontoons and proposed seven number pontoons to replace existing pontoons and canopy with glazed roof

Existing pontoon (C) relocation area of 80 Sq.m

Existing pontoon (A, B & D) removal area of 239 Sq.m

Proposed pontoon area of 486 Sq.m total

Glazed canopy area of 121 Sq.m

Ancillary Structures for the Development of the Quayside Buildings

- Proposed Gangway (N.02) & platform connected to the extended boardwalk and replacement of existing pontoon with two new pontoons and canopy with glazed roof.

Gangway = 24 metres in length, with a width of 1.8m approximately

Platform area = 6 Sq.m

Existing pontoon (E) area of 80 Sq.m

Proposed two number pontoons area = 159 Sq.m

Glazed canopy area = 37 Sq.m

The pontoon anchors are designed to allow for a fluctuation in water levels ranging from -2m mOD and +3.95 mOD. **Figure 2-2** shows the labelled pontoons (A, B, C, D, E) for removal/ relocation. The remaining pontoons will be retained within the new design. The site layout of the proposed development is illustrated in **Figure 2-3**.

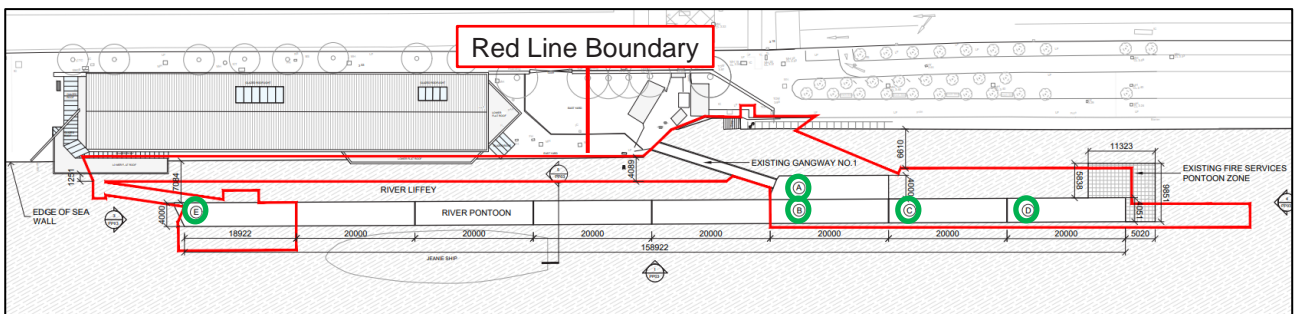


Figure 2-2: Pontoons to be removed/ relocated (Planning Report, Urban Agency)

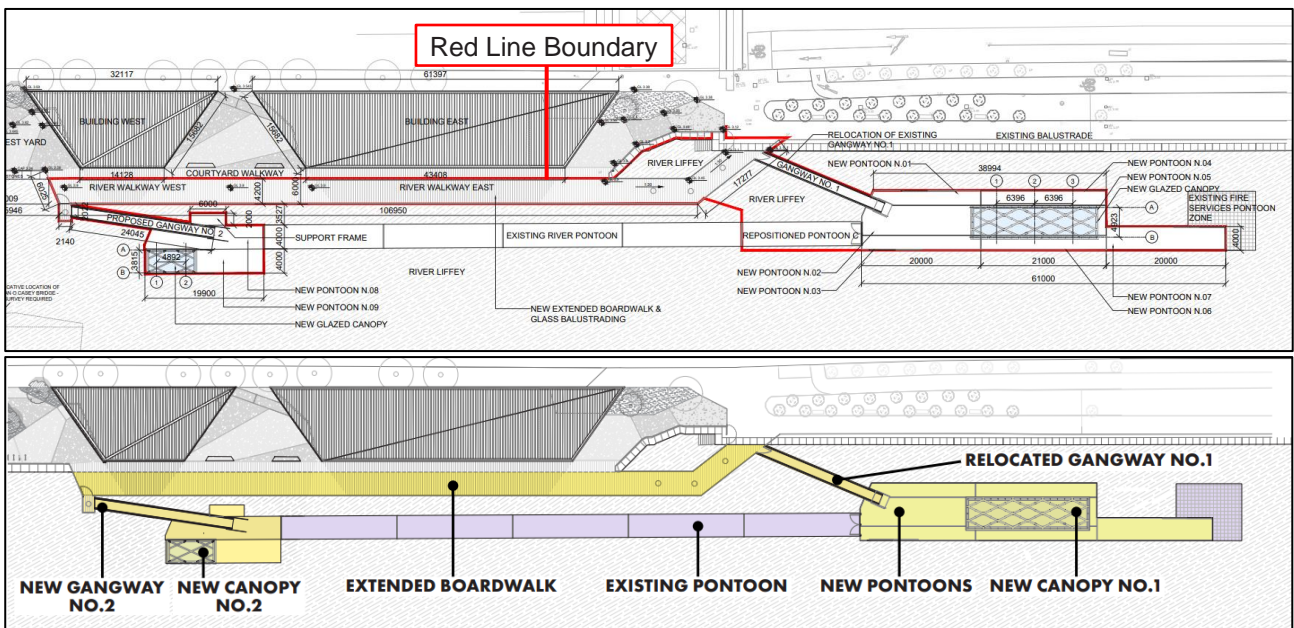


Figure 2-3: Proposed Development (Planning Report, Urban Agency)

The boardwalk is designed to a level of 3.9mOD, as shown in **Figure 2-4**. To comply with Technical Guidance Document Part M (OPW) the boardwalk is sloped at 1:30 towards the downstream end of the boardwalk in order to tie into the existing quay wall level, shown in **Figure 2-5**. A cross section of the boardwalk is illustrated in **Figure 2-6**, showing the boardwalk level and existing quay wall level.

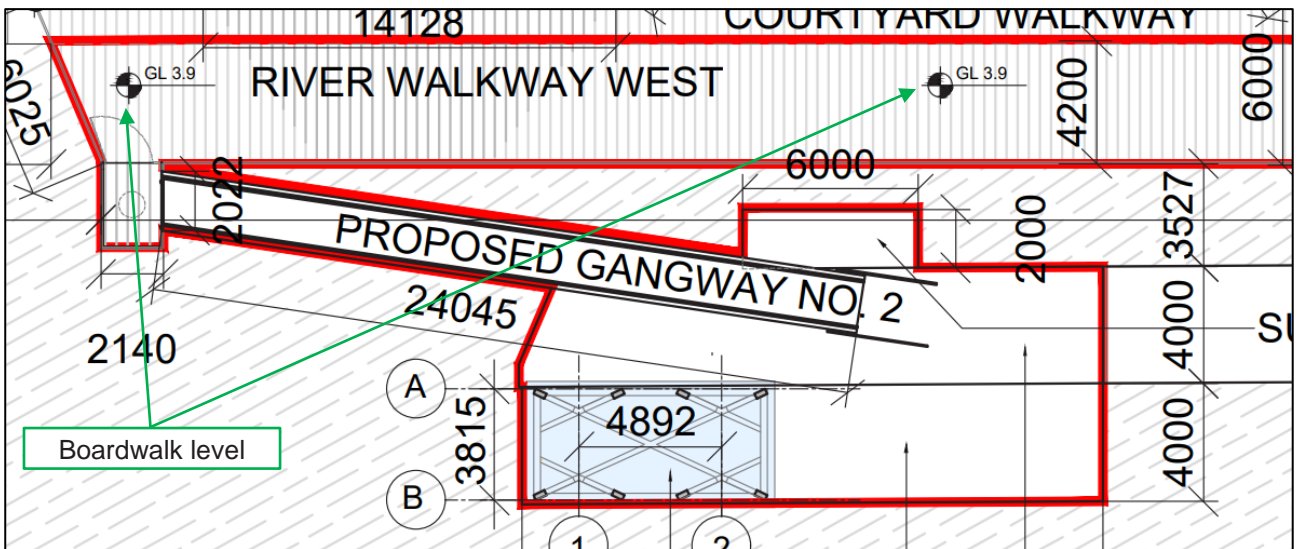


Figure 2-4: Upstream (US) Boardwalk levels (Planning Report, Urban Agency)

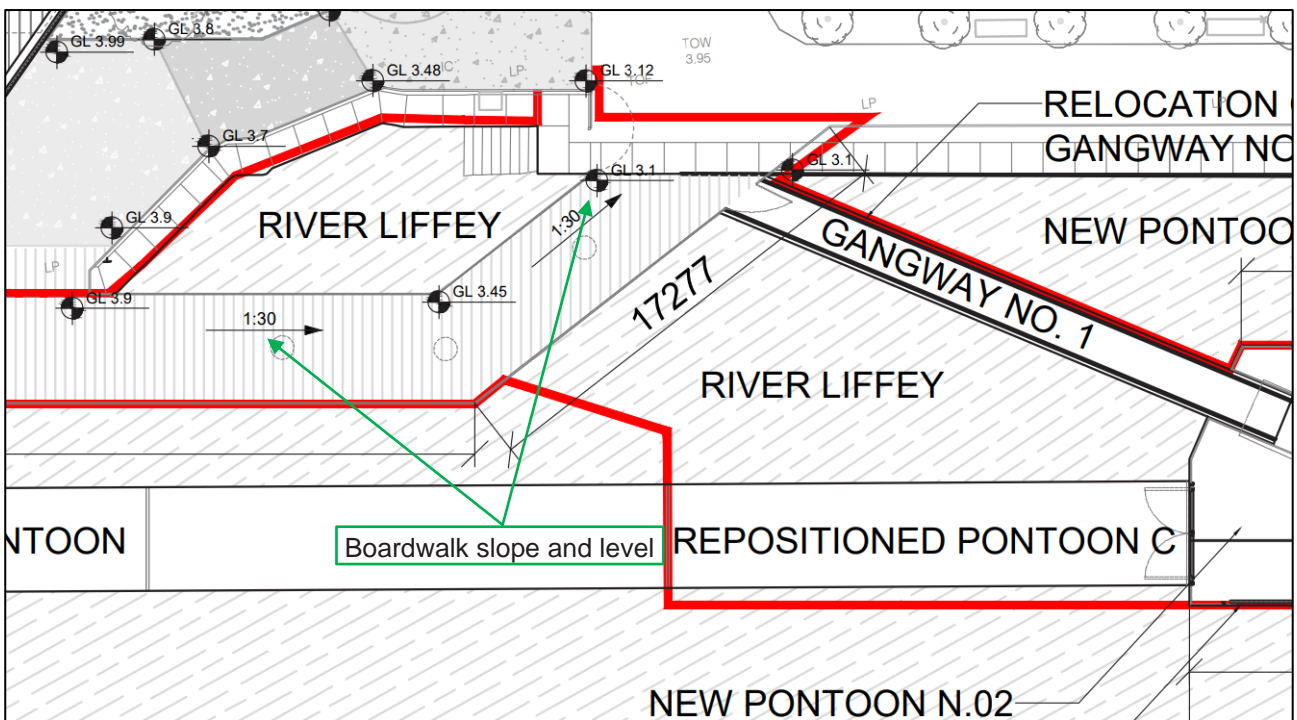


Figure 2-5: Downstream (DS) Boardwalk levels (Planning Report, Urban Agency)

Ancillary Structures for the Development of the Quayside Buildings

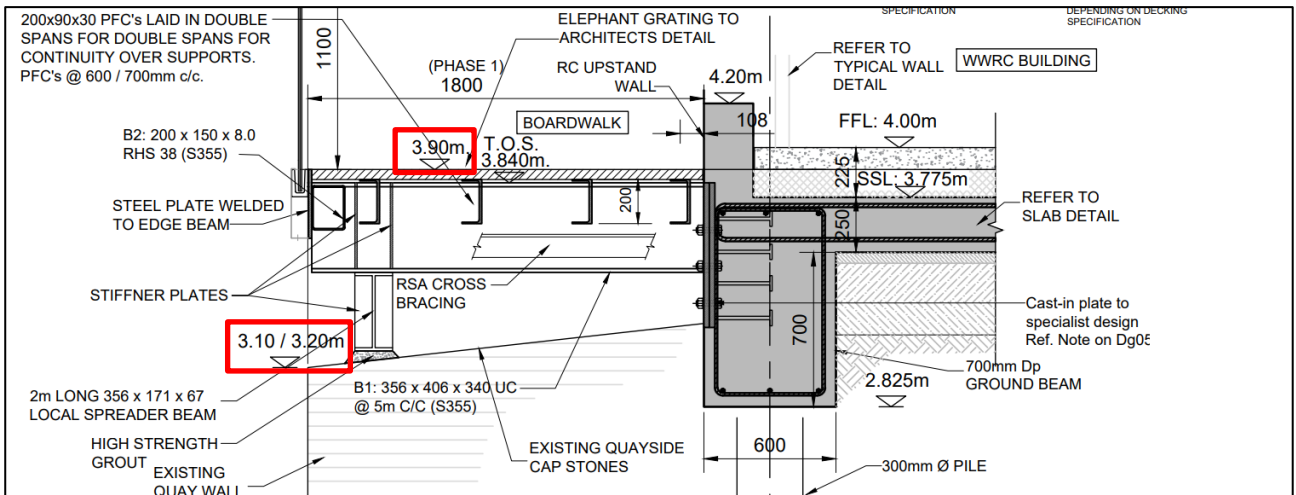


Figure 2-6: Cross section of boardwalk (Planning Report, Urban Agency)

3 EXISTING SITE CHARACTERISTICS

3.1 Existing Site Description

The existing site consists of a single gangway, 9 no. pontoons, and fire services pontoon zone as illustrated in **Figure 3-1**.

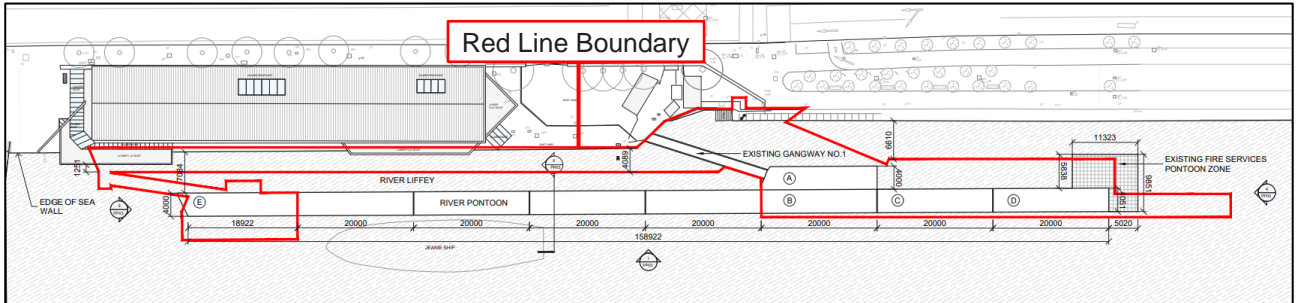


Figure 3-1: Existing Site Layout (Planning Report, Urban Agency)

3.2 Hydrology & Drainage

The proposed development is within Hydrometric Area 09 (Liffey and Dublin Bay). The proposed development is situated on the River Liffey, which flows in an easterly direction through the site, parallel to the R801 (as illustrated in **Figure 3-2**). The North Dock Lake is situated 300m north of the site. There is no drainage infrastructure within the existing site due to the nature of the site and location on the River Liffey.

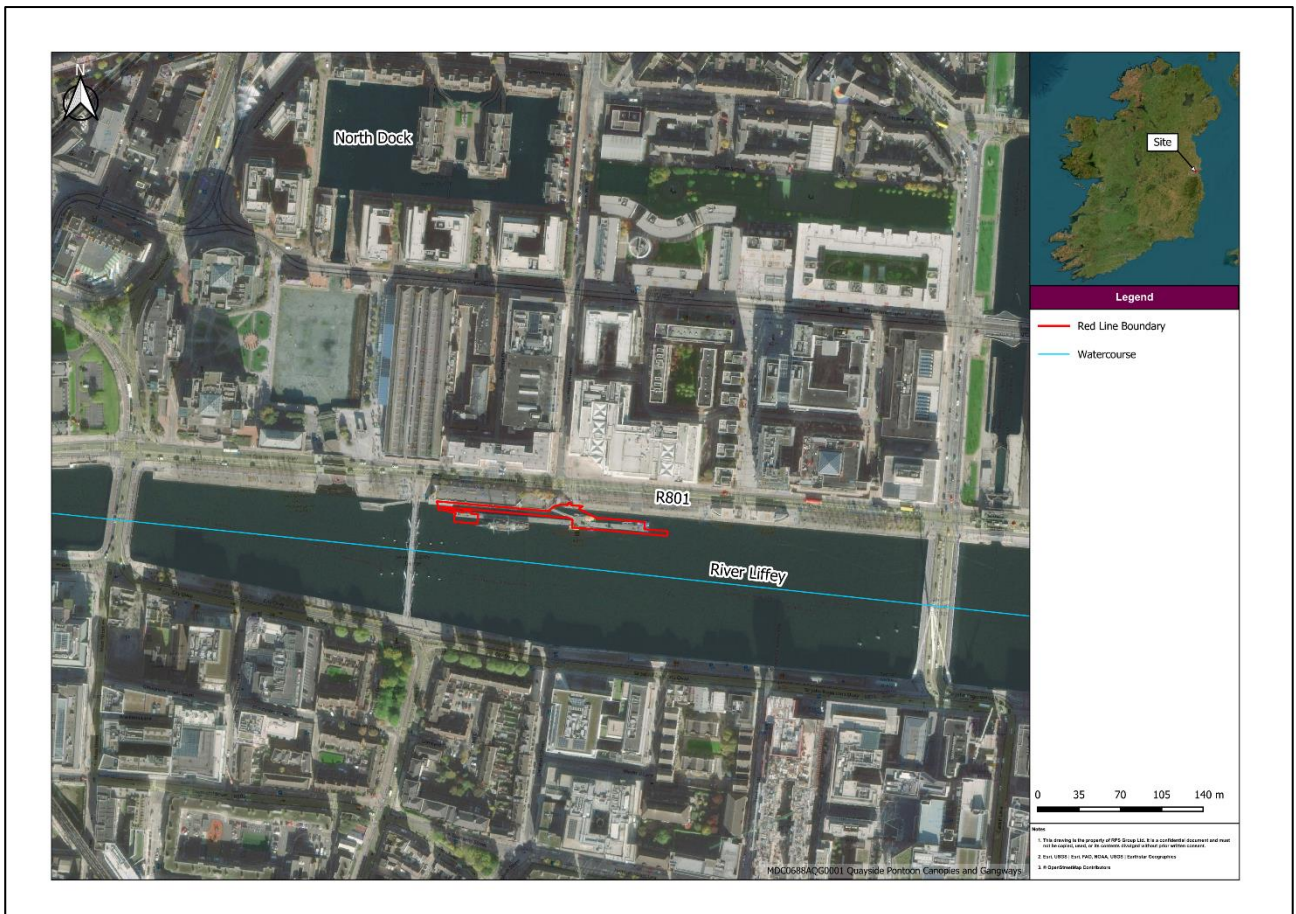


Figure 3-2: Existing Watercourses

3.3 Topography

The majority of the existing site lies on the River Liffey and the pontoon levels vary with the water level. The existing quayside cap stones are at a varying height along the bank at 3.138mOD (variable), as shown in **Figure 3-3**, with a minimum and maximum height of 3.1m and 3.2m respectively.

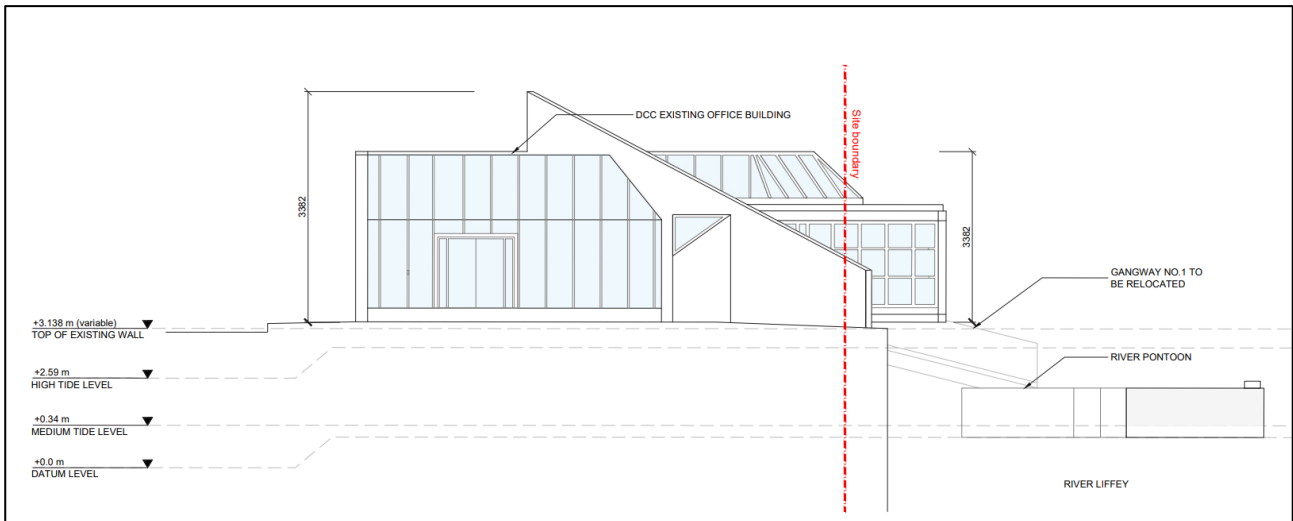


Figure 3-3: Existing elevations (Planning Report, Urban Agency)

3.4 Geology

The existing site contains pontoons which are situated on the River Liffey. The existing quay wall is located on made ground.

3.5 Land Use Zoning – Dublin City Development Plan 2022-2028

The proposed development is within a Conservation Area and is zoned Z11 – Waterways Protection and Z9 – Amenity/ Open Space Lands/ Green Network as per the DCDP 2022-2028 (illustrated in **Figure 3-4**).

The Land-Use Zoning Objective of Z11 – Waterways Protection is: *to improve canal, coastal and river amenities*. The DCC CDP 2022-2028 indicates the permissible uses within this zoning are: *Open space, water-based recreational activities*.

The Land-Use Zoning Objective of Z9 - Amenity/ Open Space Lands/ Green Network is: *to preserve, provide and improve recreational amenity, open space and ecosystems*. The DCDP 2022-2028 indicates the uses open for consideration are: *Boarding kennel, café/ tearoom, caravan park/camp site (holiday), car park for recreational purposes, childcare facility, civic and amenity/recycling centre, community facility, craft centre/craft shop, crematorium, cultural/recreational building and uses, garden centre/ plant nursery, golf course and clubhouse, place of public worship, restaurant, shop (local), sports facility and recreational uses, water-based recreational activities*.

The Strategic Flood Risk Assessment (SFRA) carried out as part of the DCDP 2022-2028 outline development management within Flood Zones. It states there will be a presumption against the granting of permission for highly or less vulnerable development which encroaches onto or results in the loss of the flood plain. Water compatible development only will be considered in such areas at risk of flooding.

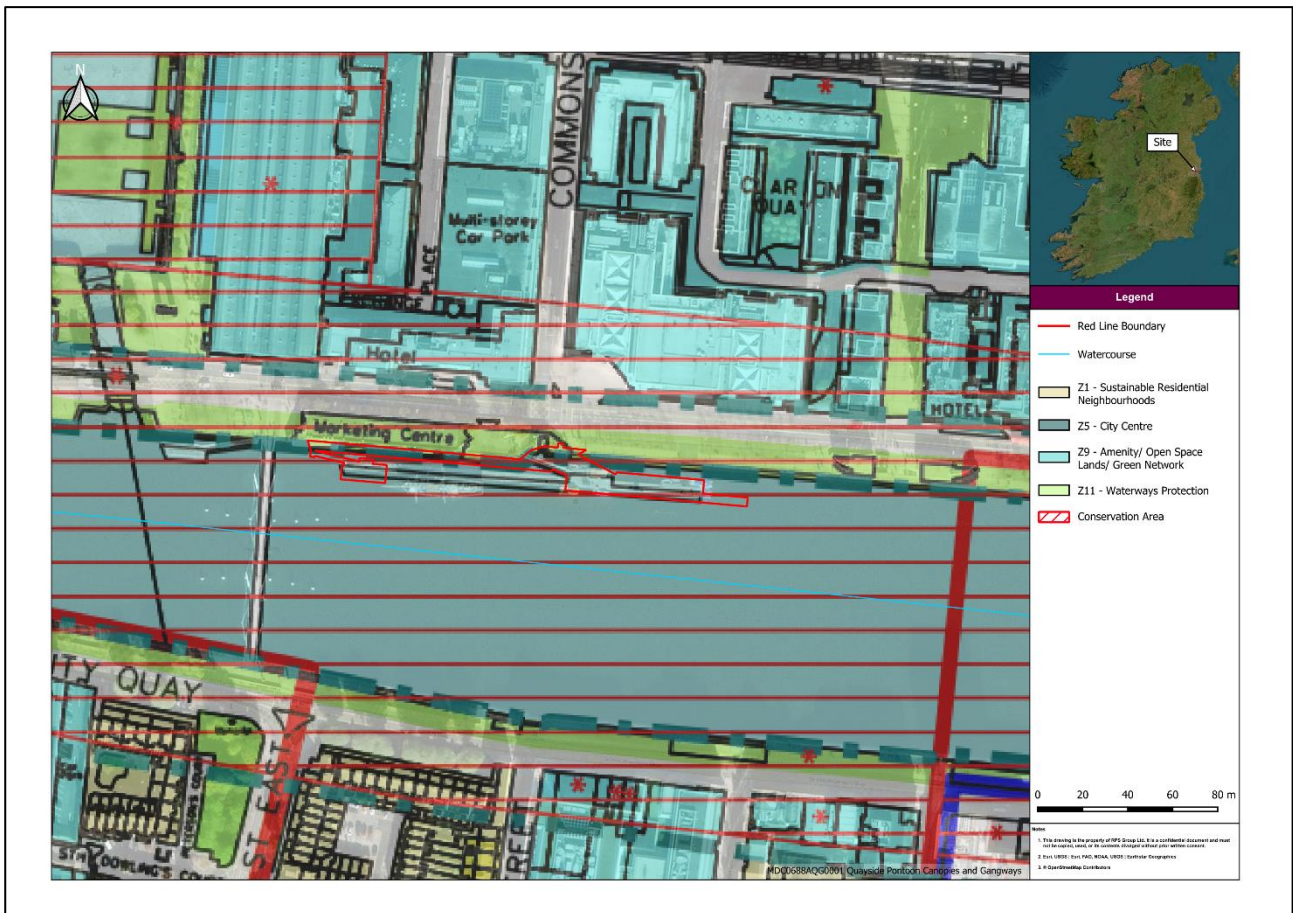


Figure 3-4: Proposed Development Site overlapping Land Use Zones (DCDP 2022-2028)

4 FLOOD RISK IDENTIFICATION – STAGE 1

This section identifies existing information pertinent to flood risk at the site. The information used to inform this assessment includes historical mapping and indicative sources relating to previous predictive flood studies and risk assessments.

4.1 Flooding History

4.1.1 OPW Flood Hazard Mapping

The OPW Flood Hazard Mapping website floodinfo.ie provides information about the location of known flood events in Ireland, showing supporting information in the form of reports, photos, and press articles about those floods. This website was consulted to find any instances of flooding in the proximity of the proposed works. No instances of flooding were found within, or in the immediate vicinity of, the proposed development site as shown in **Figure 4-1**. The nearest recorded historical flooding event is 680m away from the site, and occurred in June 1963 on Fenian Street due to heavy rainfall.

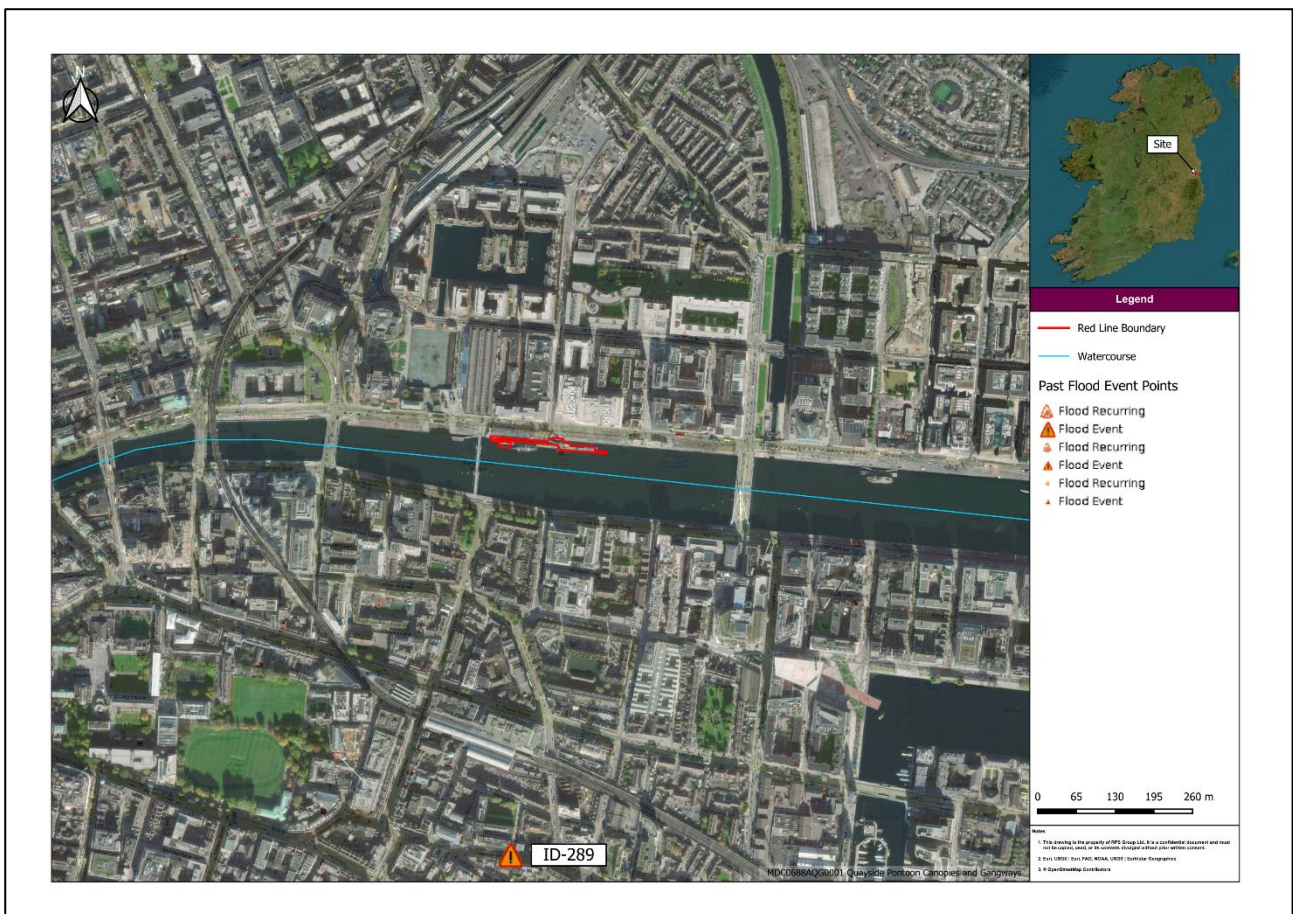


Figure 4-1: OPW Past Flood Events

4.1.2 Historic Mapping

Both the 25-inch mapping and 6-inch mapping, provided by GeoHive, the State's Geospatial Data Hub, were viewed to identify any historical watercourses or waterbodies which may have previously been present near the proposed development site. The only watercourse illustrated in proximity to the proposed development site is the River Liffey.

4.1.3 Anecdotal Evidence

No anecdotal evidence of flooding in the vicinity of the site has been reported at the time of writing of this report.

4.1.4 GSI Historical Groundwater Flooding

The GSI Spatial Resource (www.gsi.ie) was examined on the 29th of August 2023 to identify any historical groundwater flooding. There is no record of any historical groundwater flooding within the vicinity of the proposed development.

4.1.5 Internet Search

An internet search was carried out on the 29th of August 2023 to identify any past flooding events in proximity to the proposed development. Key words used in this search include “flooding”, “Dublin Docklands”, “Custom House Quay”. No evidence of historic flooding events within the proposed development were found.

4.2 Predictive Flood Risk Mapping

4.2.1 OPW National Coastal Flood Hazard Mapping (NCFHM)

The National Coastal Flood Hazard Mapping 2021 project produced updated national scale coastal flood extent and depth maps. Maps were produced for the 50%, 20%, 10%, 5%, 2%, 1%, 0.5% and 0.1% Annual Exceedance Probabilities (AEPs) for the present day scenario and for the Mid-Range Future Scenario (MRFS), High End Future Scenario (HEFS), High+ End Future Scenario (H+EFS) and High++ End Future Scenario (H++EFS) which represent a 0.5m, 1.0m, 1.5m and 2.0m increase in sea level respectively.

The projected flood extents are developed from the predicted water levels from the nearest node point of Irish Coastal Wave and Water Level Study (ICWWS). The nearest point is North East Point 22 (NE22) approximately 2.58km downstream of the proposed development site (see **Figure 4-2**). Any ground levels lower than water levels at this point will be shown as flooded in the NCFHM maps. The site lies within the 0.5% AEP (1 in 200 year) flood extent in the present-day conditions as shown in **Figure 4-3**. The predicted water levels for this node are provided in **Figure 4-4**. The peak water levels for the 0.5% AEP event are 3.15 mOD and 3.65 mOD for the present day and Mid-Range Future Scenario respectively.

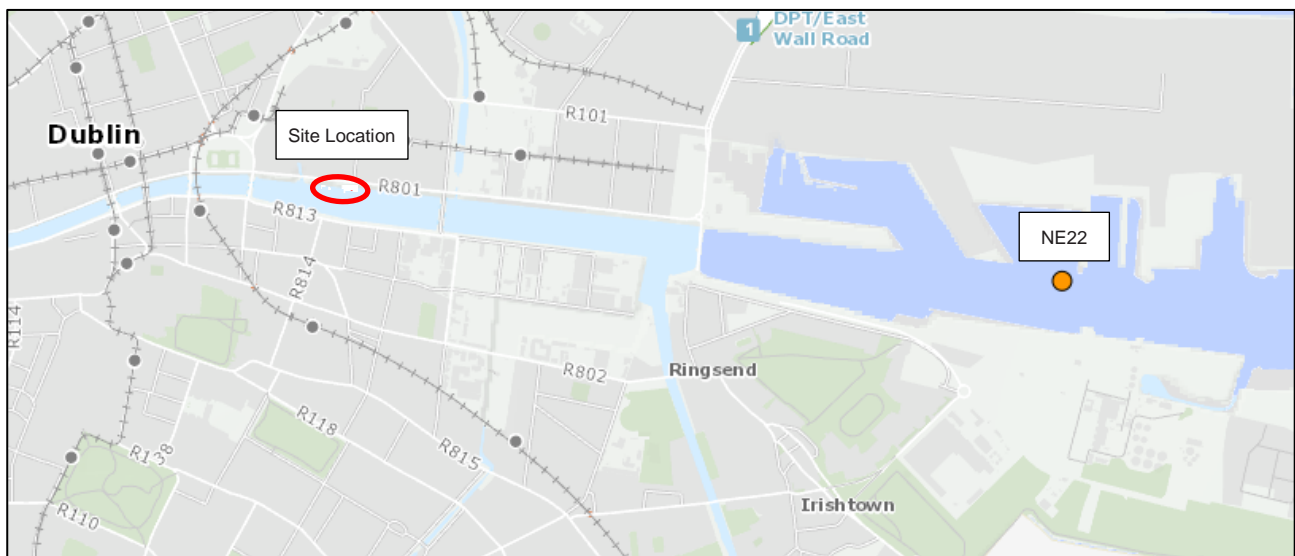


Figure 4-2: Location of NE22



Figure 4-3: NCFHM Coastal Flood Mapping - Present Day

North East Point NE22					
Water Level (OD Malin OSGM15 in meters)					
AEP	Scenario				
	Present Day	MRFS	HEFS	H+EFS	H++EFS
50%	2.70	3.20	3.70	4.20	4.70
20%	2.79	3.29	3.79	4.29	4.79
10%	2.86	3.36	3.86	4.36	4.86
5%	2.93	3.43	3.93	4.43	4.93
2%	3.01	3.51	4.01	4.51	5.01
1%	3.08	3.58	4.08	4.58	5.08
0.5%	3.15	3.65	4.15	4.65	5.15
0.1%	3.30	3.80	4.30	4.80	5.30

Figure 4-4: Predicted Flood Levels (Extract from ICWWS)

4.2.2 OPW Catchment Flood Risk Assessment and Management (CFRAM) Mapping – Fluvial

As shown in **Figure 4-5**, the site lies within the 1% AEP (1 in 100 year) CFRAM fluvial flood extent with predicted flood levels of 2.45 mOD in the 1% AEP and 0.1% AEP events under present day conditions.

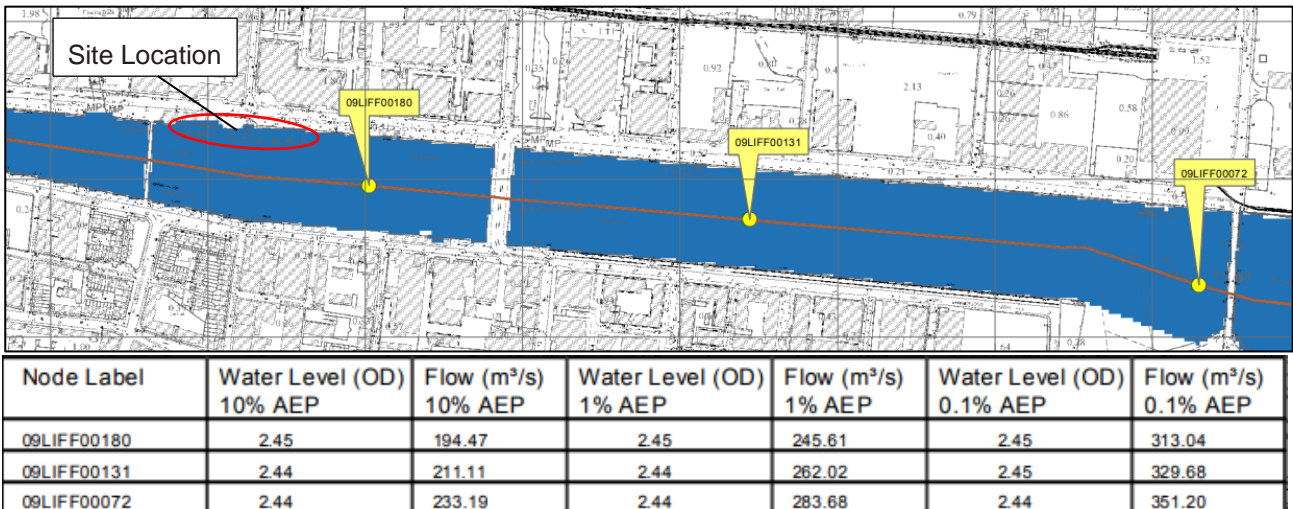


Figure 4-5: CFRAM Fluvial Flood Mapping - Present Day

4.2.3 OPW Catchment Flood Risk Assessment and Management (CFRAM) Mapping – Coastal

The CFRAM coastal flood mapping shows predicted flood levels near the proposed development site at 3.12mOD (see **Figure 4-6**). The flood extents differ to that of the NCFHM flood extents shown in **Figure 4-3**. This is likely due to the direct representation of connected spill pathways from the river into the floodplain within the CFRAM model. This produces a more realistic connection between out of bank flooding and River Liffey water levels than presented within the NCFHM extents.

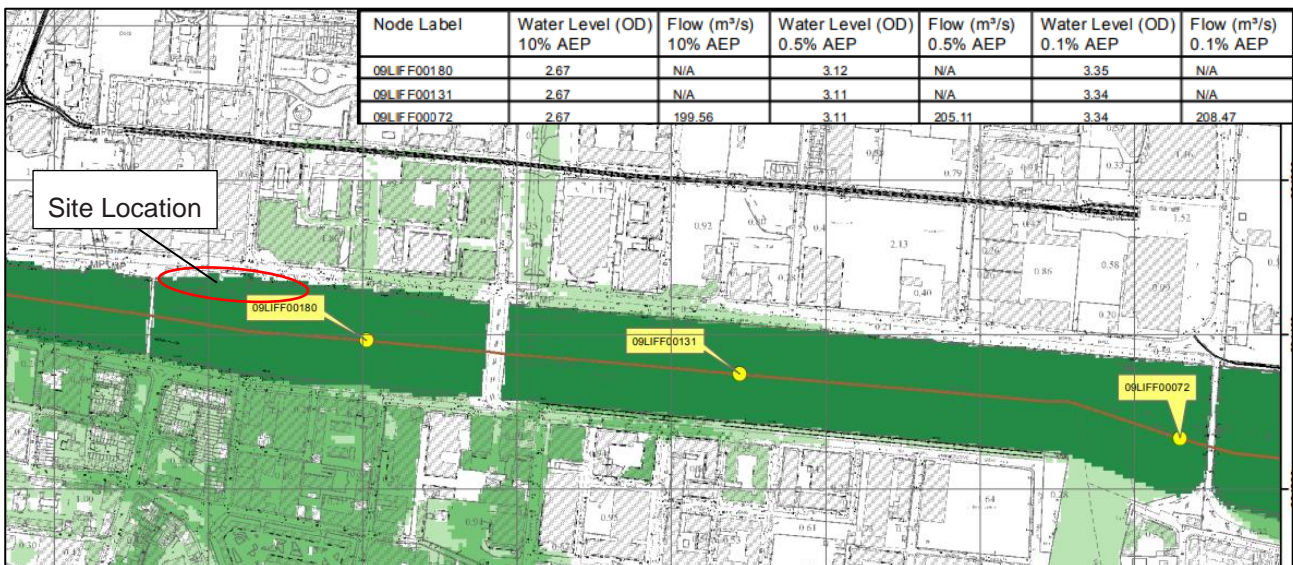


Figure 4-6: CFRAM Coastal Flood Mapping - Present Day

4.2.4 Pluvial Flooding

There is low risk of pluvial flooding within the proposed development site. The floating elements are situated on the River Liffey, and the boardwalk floor area is designed to be elephant grating. This flooring will allow rainwater to pass through the boardwalk and enter the River Liffey.

4.2.5 GSI Predictive Groundwater Flooding

The proposed development is situated on the River Liffey. There is low risk of groundwater flooding to the proposed development.

4.2.6 Strategic Flood Risk Assessment (SFRA)

An SFRA was carried out as part of the DCDP 2022-2028 and outlines objectives in relation to flood risk management. The SFRA maps identify the site to be contained within Flood Zone A, therefore only water compatible development will be considered for planning. The mapping is attached in **Appendix B**.

4.3 Stage 1 Conclusion

The relevant and available information included within Stage 1 is sufficient to conclude that the site is located within Flood Zone A, hence this Flood Risk Assessment is required to progress to Stage 2. **Table 4-1** presents a summary of the flood risks identified.

Table 4-1: Summary of Flood Risk Identification

Sources of Flooding	Comments	Probability
Coastal	The NCFHM and CFRAM coastal flood mapping shows the proposed development site to be within the 0.5% AEP flood extent. Coastal Flooding is the primary source of flood risk to the site with water levels for the 0.5%AEP coastal flood event approximately 0.7m higher than the 1%AEP fluvial flood event.	High
Fluvial	The CFRAM fluvial flood mapping shows the proposed development site to be within the 1% AEP flood extent. Flooding is contained within the watercourse, with peak water levels lower than the correspond coastal flood levels.	High
Pluvial	The proposed development is located on the River Liffey and the boardwalk is designed to allow rainwater to pass through the floor area, diminishing the risk of pluvial flooding.	Low
Groundwater	Groundwater flooding is not identified as a risk as the development is situated on the River Liffey.	Low

5 INITIAL FLOOD RISK ASSESSMENT – STAGE 2

The Flood Risk Identification – Stage 1 found that the proposed development site is situated within Flood Zone A and must progress to Stage 2 for further assessment before the proposed development is deemed appropriate.

5.1 Vulnerability Classification

The proposed development is classed as a “water-compatible” development as per the definition in the DCDP 2022-2028 SFRA which follows the DoEHLG (2009) Flood Risk Management Planning Guidelines (see **Table 5-1**). This indicates the nature and scale of the proposed development is appropriate in the proposed location without need of the Justification Test and is consistent with the Land Use Zoning objectives of the DCDP and SFRA as discussed in **Section 3.5** of this report.

Table 5-1: Classification of Vulnerability of Different Types of Development

Vulnerability Class	Land-uses and types of development which include:
Water compatible development	Flood control infrastructure; Docks, marinas and wharves; Navigation facilities; Ship building, repairing and dismantling, dockside fish processing and refrigeration and compatible activities requiring a waterside location; Water-based recreation and tourism (excluding sleeping accommodation); Lifeguard and coastguard stations; Amenity open space, outdoor sports and recreation and essential facilities such as changing rooms; and Essential ancillary sleeping or residential accommodation for staff required by uses in this category (subject to a specific warning and evacuation plan).

Dublin City Development Plan 2022-2028, Strategic Flood Risk Assessment, 2022

5.2 Boardwalk/Pontoon Design Levels

The proposed development site is located within Flood Zone A. **Table 5-2** below shows the boardwalk and pontoon levels compared against the predicted flood levels. **Table 5-3** shows the corresponding freeboard for each event.

Table 5-2: Proposed Development Levels against Predicted Flood Levels

Proposed Development	Level (mOD)	Flood Levels (mOD)				
		NCFHM Coastal (0.5% AEP - Present)	NCFHM Coastal (0.1% AEP - Present)	NCFHM Coastal (0.5% AEP – MRFS)	CFRAM Fluvial (1% AEP – Present)	CFRAM Coastal (0.5% AEP – Present)
Boardwalk US (To top of elephant grating of boardwalk)	3.9	3.15	3.30	3.65	2.45	3.12
Boardwalk DS (To top of elephant grating of boardwalk)	3.1	3.15	3.30	3.65	2.45	3.12
Pontoons (Upper limit of varying level of pontoon)	3.95	3.15	3.30	3.65	2.45	3.12

Table 5-3: Freeboard of Proposed Development

Proposed Development	Level (mOD)	Freeboard				
		NCFHM Coastal (0.5% AEP - Present)	NCFHM Coastal (0.1% AEP - Present)	NCFHM Coastal (0.5% AEP - MRFS)	CFRAM Fluvial (1% AEP - Present)	CFRAM Coastal (0.5% AEP - Present)
Boardwalk US (To top of elephant grating of boardwalk)	3.9	0.75m	0.6m	0.25m	1.45m	0.79m
Boardwalk DS (To top of elephant grating of boardwalk)	3.1	-0.05m	-0.2m	-0.55m	0.65m	-0.01m
Pontoons (Upper limit of varying level of pontoon)	3.95	0.80m	0.65m	0.30m	1.50m	0.83m

The upstream (US) end of the boardwalk incorporates a minimum of 250mm freeboard for events up to and including the 0.5% AEP Mid-Range Future Scenario and over 600mm freeboard for events up to the 0.1% AEP event in present day conditions.

The (DS) downstream end of the boardwalk is required to slope down to a level of 3.1mOD to tie into existing bank level and to retain Part M compliance. As such, the downstream end of the boardwalk will begin to submerge in present-day conditions for the 0.5% AEP coastal event. This has been incorporated into the design through the construction material, including elephant grating which will allow water to pass through the boardwalk.

The floating pontoons are designed for the present-day and MRFS conditions, allowing for a 300mm freeboard for events up to and including the 0.5% AEP MRFS event.

5.3 Climate Change

Where possible, the boardwalk is designed to allow for flooding to accommodate predicted climate change flood levels to the 0.5% AEP MRFS flood event. The floating pontoons have been designed to the 0.5% AEP MRFS coastal flood event with a freeboard of 300mm.

5.4 Access and Egress

The pontoons will only be accessible via locked gates from the boardwalk. This will prevent any person(s) from getting access to the gangways and pontoons in times of flood. The downstream end of the boardwalk will begin to submerge in the 0.5% AEP coastal flood event however safe access and egress will be retained via the upstream end for all events up to and include the 0.5% AEP MRFS coastal flood event.

5.5 Residual Flood Risk

Residual risks are risks remaining after all risk avoidance, substitution and mitigation measures have been taken.

Due consideration will be given at detailed design for the pontoon sea anchors to withstand the predicted velocities at the site location. However, it is noted that in the rare event that a floating pontoon was to come loose, there is minimal risk of a pontoon causing an obstruction or blockage to a nearby bridge due to the sizing of the pontoons relative to the nature and scale of the nearby bridge spans. Bridge spans within the vicinity of the site are in the range of 15m to 83m. Similarly, there is no considerable additional risk to the site due to potential blockages, as the bridge spans are significantly wider than any potential debris loading.

As the development is proposed within the river confines, there is no applicable residual risk from overtopping or breach of defences.

5.6 Stage 2 Conclusion

There is a high probability of flooding at the proposed development site as it is located within Flood Zone A from both fluvial and coastal sources. Coastal Flooding is the primary source of flood risk to the site with water levels for the 0.5%AEP coastal flood event approximately 0.7m higher than the 1%AEP fluvial flood event. However, as the proposed development is a water compatible land use, the nature and scale of the proposed development is appropriate in the proposed location without need of the Justification Test and is consistent with the Land Use Zoning objectives.

The boardwalk and floating pontoons are designed to function up to the 0.5% AEP coastal flood event, where the downstream end of the boardwalk will begin to submerge due to existing site constraints. Additional allowance has been incorporated into the design through the construction material, including elephant grating which will allow water to pass through the boardwalk. The floating pontoons will have an upper limiting range to accommodate 300mm freeboard above the 0.5% AEP MRFS coastal flood event water level.

There is no significant residual risk of an increase in flood levels within the proposed development site due to blockage upstream or downstream of the site and no considerable increase in risk resulting from blockage of nearby bridges in the rare event of a pontoon coming loose.

6 CONCLUSION

Based on the review of existing information referenced throughout this report and the information which has been established as a result of undertaking the flood risk assessment described in this report, the conclusions can be summarised as follows:

- This FRA was carried out in accordance with “The Planning System and Flood Risk Management Guidelines” (DOEHLG, 2009) and with guidance from the SFRA completed as part of the DCDP 2022-2028.
- There are no records of historical flooding within, or in the immediate vicinity, of the proposed development.
- The proposed development is located within land zoned for Waterways Protection and Amenity/ Open Space Lands/ Green Network as per the DCDP 2022-2028.
- The proposed development is located within Flood zone A
- The proposed development is classified as “water-compatible” and is therefore appropriate for development at this location from a flood risk perspective without need of the Justification Test.
- The boardwalk is designed to a level of 3.9mOD which is 250mm above the predicted 0.5% AEP MRFS coastal flood level. Existing site constraints restrict the downstream end of the boardwalk to 3.1mOD, which is subject to flooding in this event. Construction materials including permeable elephant grating will allow water to pass through in the event of submergence.
- The floating pontoons are designed to a maximum flood level of 3.95mOD to accommodate the 0.5% AEP flood event in the MRFS, which includes a 300mm freeboard.
- There is no significant residual risk of an increase in flood levels within the site due to blockage at bridges near the site.
- There is no demonstrable increase in flood risk elsewhere in the rare event of a floating pontoon coming loose.

The proposed development of a boardwalk and connected floating pontoons at Dublin City Moorings, Custom House Quay, has undergone a Site-Specific Flood Risk Assessment proportionate to the nature and scale of the development and is considered appropriate in the context of sustainable flood risk management and application of the Planning System and Flood Risk Management Guidelines (DoEHLG, 2009) and the Dublin City Development Plan 2022-2028.

Appendix A The Planning System and Flood Risk Management

In September 2008 “The Planning System and Flood Risk Management Guidelines” (the guidelines) were published by the Department of the Environment, Heritage and Local Government in Draft format. In November 2009 the adopted version of the document was published.

The guidelines give guidance on flood risk and development. The guidelines recommend a precautionary approach when considering flood risk management in the planning system.

Foremost, flood risk is a combination of the likelihood/probability of flooding and the potential consequences arising.

Flood Risk = Likelihood of Flooding x Consequences of Flooding

The assessment of flood risk requires the 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 affected by it (i.e. the receptors). This is highlighted in Figure 1 which is extracted from the guidelines.

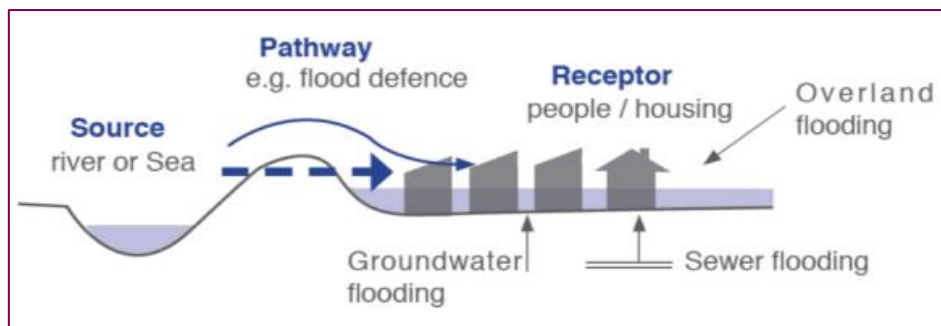


Figure 1: Sources, Pathways and Receptors of Flooding (Extract from PSFRM)

The core principle of the guidelines is to adopt a risk based sequential approach to managing flood risk and to avoid development in areas that are at risk (refer to Figure 2). The sequential approach is based on the identification of flood zones for river and coastal flooding.

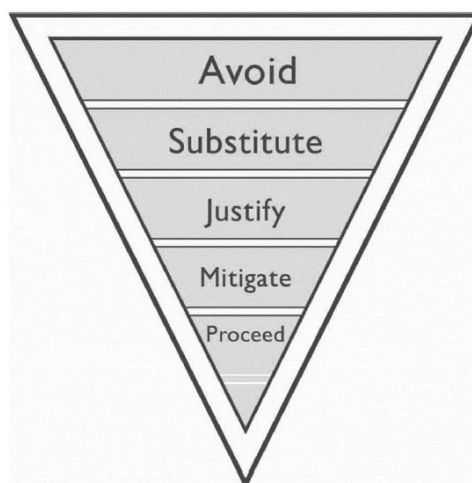


Figure 2: Sequential approach principles in flood risk management

The guidelines include definitions of Flood Zones A, B and C as noted below. It should be noted that these do not take into account the presence of flood defences, as risks remain of overtopping and breach of the defences.

Zone A (high probability of flooding) is for lands where the probability of flooding is greatest (greater than 1% or the 1 in 100 for river flooding and 0.5% or 1 in 200 for coastal flooding).

Zone B (moderate probability of flooding) refers to lands where the probability of flooding is moderate (between 0.1% or 1 in 1,000 and 1% or 1 in 100 for river flooding and between 0.1% or 1 in 1,000 and 0.5% or 1 in 200 for coastal flooding).

Zone C (low probability of flooding) refers to lands where the probability of flooding is low (less than 0.1% or 1 in 1,000 for both river and coastal flooding).

Once a flood zone has been identified, the guidelines set out the different types of development appropriate to each zone. Exceptions to the restriction of development due to potential flood risks are provided for through the use of the **Justification Test**, where the planning need and the sustainable management of flood risk to an acceptable level must be demonstrated as shown in Table 1. This recognises that there will be a need for future development in existing towns and urban centres that lie within flood risk zones, and that the avoidance of all future development in these areas would be unsustainable.

Table 1: Matrix of Development Vulnerability vs Flood Zone (Extract from PSFRM)

	Flood Zone A	Flood Zone B	Flood Zone C
Highly vulnerable development (including essential infrastructure)	Justification Test	Justification Test	Appropriate
Less vulnerable development	Justification Test	Appropriate	Appropriate
Water-compatible development	Appropriate	Appropriate	Appropriate

A three-staged approach to undertaking an FRA is recommended:

Flood Risk Identification (Stage 1) - Identification of any issues relating to the site that will require further investigation through a Flood Risk Assessment.

Initial Flood Risk Assessment (Stage 2) - Involves establishment of the sources of flooding, the extent of the flood risk, potential impacts of the development and possible mitigation measures.

Detailed Flood Risk Assessment (Stage 3) - 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 report addresses the requirements for Stage 1.

Potential Sources of Flooding

When carrying out a flood risk assessment one should consider all the potential flood risks and sources of flood water at the site. Generally, the relevant flood sources are:

Fluvial Flooding

Fluvial flooding refers to flooding from rivers and streams. Fluvial flooding is the result of a river/stream exceeding its channel capacity and excess water spilling out onto the adjacent floodplain. The process of flooding on watercourses depends on a number of characteristics associated within the catchment including geographical location, and variation in rainfall, steepness of the channel and surrounding floodplain and infiltration rate of runoff associated with urban and rural catchments.

Coastal Flooding

Coastal flooding results from sea levels which are higher than normal and result in sea water overflowing onto the land. Coastal flooding is influenced by the following three factors which often work in combination: tides, storm surges, and wave action.

Pluvial Flooding

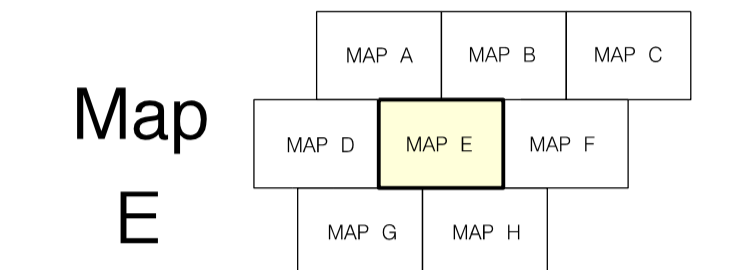
Pluvial flooding relates to flooding as a direct result of extreme rainfall. Pluvial flooding can occur during a rainfall event of extreme intensity. If the rate at which water falls on the ground is faster than the rate at which the water can make its way to the drainage network, then flooding will occur. This type of flood is also referred to as 'ponding' and typically occurs during summer months.

Groundwater Flooding

Groundwater flooding can occur during lengthy periods of heavy rainfall, typically during later winter/early spring when the groundwater table is already high. If the groundwater level rises above surface level, it can pond at local points and cause periods of flooding.

Appendix B DCDP 2022-2028 SFRA Flood Maps

Dublin City Development Plan 2022-2028



LAND USE ZONING OBJECTIVES¹

Zone Z1	Sustainable Residential Neighbourhoods	[Light Green Box]
Zone Z2	Residential Neighbourhoods (Conservation Areas)	[Yellow Box]
Zone Z3	Neighbourhood Centres	[Pink Box]
Zone Z4	Key Urban Villages / Urban Villages	[Light Blue Box]
Zone Z5	City Centres	[Light Cyan Box]
Zone Z6	Employment/Enterprises	[Light Purple Box]
Zone Z7	Employment (Heavy)	[Purple Box]
Zone Z8	Georgian Conservation Areas	[Orange Box]
Zone Z9	Amenity/Open Space Lands/Green Network	[Light Green Box]
Zone Z10	Inner Suburban and Inner City Sustainable Mixed-Uses	[Dark Green Box]
Zone Z11	Waterways Protection	[Light Blue Box]
Zone Z12	Institutional Land (Future Development Potential)	[Light Green Box]
Zone Z14	Strategic Development and Regeneration Areas (SDRA)	[Blue Box]
Zone Z15	Community and Social Infrastructure	[Light Blue Box]

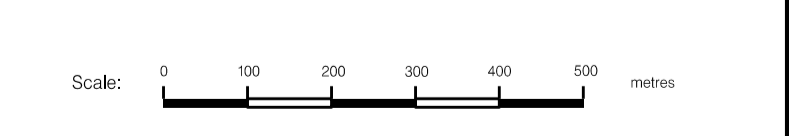
SPECIFIC OBJECTIVES

Conservation Areas	[Red Dashed Line]
Architectural Conservation Areas	[Green Dashed Line]
Protected Structures (RPS takes precedence)	[Red Star Symbol]
Record of Monuments and Places (RMP) as Established under Section 12 of the National Monuments (Amendment) Act 1994	[Black Monument Symbol]
Record of Monuments and Places (RMP) as Established under Section 12 of the National Monuments (Amendment) Act 1994	[Blue Monument Symbol]
National Monuments	[Black Circle Symbol]
COMAH establishments (SEVESO establishments)	[Red Circle Symbol]
LAP (Local Area Plan) & SDZ (Special Development Zone)	[Red Line Symbol]
Dublin Airport Outer Public Safety Zone	[Blue Line Symbol]
Dublin Airport Noise Zones	[Pink Line Symbol]
ROADS Roads, Street and Bridge Schemes	[Black Dotted Line]
FLOOD ZONES Flood Zone A	[Dark Blue Box]
Flood Zone B	[Light Blue Box]
Defended	[Red Box]

Refer to CPW website - FloodRisk

1. Map to be read in conjunction with the written statement.
 2. Roads objectives are shown diagrammatically.
 3. *See Record of Monuments and Places (RMP) at <https://www.archaeology.ie/publication-forms/record-of-monuments-and-places>. For updated information see the Historic Environment Viewer at <https://maps.archaeology.ie/Record/Environment>. The RMP does not include all known archaeological sites and monuments, given that further such sites and monuments are found on an ongoing basis. For that reason, it is very important (in the context of considering proposed development) to take account of information available on the Historic Environment Viewer (HEV).
 4. See written statement (Chapter 16) for full zoning text.

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John O'Hara
Dublin City Planner

