EIAR SCREENING ASSESSMENT

Marina Park Phase II

Cork City Council

PROJECT NO. O681

June 2022

OCSC
O'CONNOR | SUTTON | CRONIN
Multidisciplinary
Consulting Engineers

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NOTICE

DOCUMENT CONTROL & HISTORY

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1 INTRODUCTION

1.1 Project Contractual Basis & Parties Involved

This report has been prepared by O'Connor Sutton Cronin & Associates Ltd. (OCSC) at the request of their Client, Cork City Council. The site for assessment comprises 11.848 ha of underused land and existing parkland. Marina Park Phase II is located between Centre Park Road and Blackrock Harbour in Cork City. The project plans to transform the existing landscape into an eco-park with high-quality public spaces while enhancing natural heritage and biodiversity.

The purpose of this report is to determine whether the project requires the preparation of an Environmental Impact Assessment Report (EIAR). This report documents the screening completed to provide a summarised overview of the potential impacts on the receiving environment whilst taking cognisance of the relevant statutory requirements.

A Stage 1 Screening for Appropriate Assessment has also been prepared (OCSC, 2022). A Stage 1 Screening exercise assesses the likely significant effects of the development on Natura 2000 sites within the zone of influence of the proposed project. The results of the AA have determined that a Stage Two screening is not required for the project.

1.2 Study Area

The study area consists of the Marina Park, the Atlantic Pond and structures such as Barrington's Folly. The site has a large number of trees within its boundary. Refer to Figure 1.1 for an aerial photograph.

Figure 1.1: Study Area; site location indicated by red line (Google Earth, 2022)

1.3 Surrounding Land Use

The immediately surrounding area consists of industrial, residential, educational, recreational/ community, and commercial/retail business land uses. To the north, the study area is bounded by the Marina Promenade and the River Lee. Further north are residential areas and the Tivoli Docks and Industrial Estate. Residential areas lie to the south of the site. To the east is Cork Boat Club, residential premises, and Lough Mahon. Páirc Uí Chaoimh, Marina Commercial Park and Kennedy Quay are located to the west of the site. Refer to Table 1.1 for a full list of adjacent land uses.

Table 1.1: Adjacent Land Uses

BOUNDARY	LAND USE
North	The Marina Promenade, the River Lee, the Tivoli Docks and Industrial Estate, and residential premises
South	Residential premises
East	Cork Boat Club, residential premises, and Lough Mahon
West	Páirc Uí Chaoimh, Marina Commercial Park, and Kennedy Quay

1.4 Project Description

This report documents the screening completed to provide a summarised overview of the potential impacts on the receiving environment whilst taking cognisance of the relevant statutory requirements for the 11.84 ha of underused land and existing parkland of Marina Park. The Marina Park Phase II project site is located between Centre Park Road and Blackrock Harbour in Cork City. The project plans to transform the existing landscape into an eco-park with high-quality public spaces while enhancing natural heritage and biodiversity.

1.5 Project Objectives

The overall project objectives include:

- Provide an 'eco-park' and an area of high-quality public amenity space and landscape, while protecting and enhancing the natural heritage and biodiversity of the area.
- Develop the Phase 2 design in line with the vision and concept set out in The Masterplan for the formal Atlantic Pond area and the natural parkland.
- Incorporate all aspects of The Masterplan, as appropriate, including but not limited to formal gardens, picnic areas, adventure play, boating facilities, marshland trails, and improvements to biodiversity and architectural heritage sites.
- Integrate the proposed design with the adjoining Marina Park Phase 1 and other proposed and constructed developments adjacent to Marina Park Phase 2, such as the Blackrock Greenway, the Marina Promenade Scheme, and the Monahan Road Extension.
- The design and shape of Marina Park Phase 1 has been strongly influenced by the drainage requirements for both the park itself and the surrounding residential areas along with the future development of the South Docklands. The storm water retention and flood relief features developed as part of Marina Park Phase 1 and the renovated Páirc Uí Chaoimh stadium are to be extended into Phase 2 as intended under The Masterplan and other relevant documents.
- Provide linkage with residential areas immediately south of the park and connectivity with local public transport.

1.6 Methodology and Approach

The methodology and approach used in the preparation of this report will follow:

- Guidelines on the Information to be contained in Environmental Impact Assessment Reports, Irish Environmental Protection Agency, May 2022.
- European Commission (2015) Environmental Impact Assessment – EIA, Over, Legal Context
- European Union EIA Directive (85/337/EEC) and its amendments in 1997, 2003 and 2009

- Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment;
- Planning and Development Act 2000 (as amended)
- Planning and Development Regulations 2001 (as amended);
- Directive 2014/52/EU;
- Transposition of 2014 EIA Directive (2014/52/EU) in the Land Use Planning and EPA Licensing Systems – Key Issues Consultation Paper (2017; DoHPCLG)
- Preparation of guidance documents for the implementation of EIA directive (Directive 2011/92/EU as amended by 2014/52/EU) – Annex I to the Final Report (COWI, Milieu; April 2017)
- Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment (August 2018)
- Environmental Impact Assessment – Guidance for Consent Authorities regarding Sub-threshold Development (2003; DoEHLG)

Using the above documents, it has been possible to carry out a desktop EIAR Screening using the best available guidance and operating within the applicable legislation. The methodology employed in this screening exercise updates previous guidance in line with the new Directive 2014/52/EU.

1.7 Scope of Works

To meet the project objectives, the following scope of works were completed and are presented in this report:

- A review of the current site status and key environmental influences around the site;
- An historical site and area review, primarily referring to old Ordinance Survey Ireland maps but utilising other sources as appropriate and readily available;
- A discussion of the general soil and groundwater conditions within the topographical and area context; and
- An overview of any significant, negative environmental impacts that could arise from the proposed project.

1.8 Limitations

This Environmental Impact Assessment Screening Report has been prepared for the sole use of Cork City Council ("the Client"). No other warranty, expressed or implied, is made as to the professional advice included in this report or any other services provided by OCSC.

This assessment is based on a review of available historical information, environmental records, consultations, relevant guidance information, and reports from third parties. All information received has been taken in good faith as being true and representative.

This report has been prepared in line with best industry standards. The methodology adopted and the sources of information used by OCSC in providing its services are outlined in this Report. The assessment undertaken by OCSC and described was undertaken in June 2022 and is based on the information available during that period. The scope of this Report and the services are accordingly factually limited by these circumstances.

OCSC disclaim any undertaking or obligation to advise any person of any change in any matter affecting the Report which may come or be brought to OCSC's attention after the date of the Report.

The conclusions presented in this report represent OCSC's best professional judgement based on review of the relevant information available at the time of writing. The opinions and conclusions presented are valid only to the extent that the information provided was accurate and complete.

The findings of the EIA screening assessment prepared for the project has informed our professional opinion as to whether an EIAR is warranted for the proposed project, with due regard to all relevant statutory requirements and technical guidance. However, it is ultimately the responsibility of the relevant planning authority to make a determination as to whether an EIAR is required for a particular project, based on screening conducted by the planning authority.

2 EIA SCREENING PROCESS

2.1 Introduction

This section of the report discusses the legislative basis for screening used to decide if the proposed project requires the preparation of an Environmental Impact Assessment Report (EIAR). It also sets out the project in terms of planning context.

This project has been screened in accordance with Section 3.2 of the 'Guidelines on the Information to be contained in Environmental Impact Assessment Reports' (EPA, 2022), the Environmental Impact Directive (85/337/EEC) and all subsequent relevant amendments, and Planning and Development regulations (2001-2018), including S.I. No. 296 of 2018 - European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018, which came into operation on 1st September 2018.

2.2 EIA Applicable Legislation

The Environmental Impact Assessment (EIA) Directive 85/337/EEC has been in force across the European Union since 1985 and applies to a wide range of public and private projects which are defined in Annexes I (Mandatory EIA) and II (Screening-Discretion of Member States) of the directive. The EIA Directive of 1985 has been amended three times: 97/11/EC, 2003/35/EC, and 2009/31/EC. These amended directives have been coded and replaced by Directive 2011/92/EU of the European Parliament and Council on the assessment of the effects of certain public and private projects on the environment (and as amended by Directive 2014/52/EU). Directive 2014/52/EU has been transposed in 2018 in Irish law under the European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (SI 296 of 2018).

2.3 Mandatory EIAR Review

Annex I of the European Communities (EIA) Directive lists the activities for which an EIA is required. The proposed project is not listed in Annex I; therefore, it is not mandatory for an EIA to be carried out.

Where a project is listed on Annex II or is a development that is not exempted, the national authorities of the member state must decide whether an EIA is needed for a proposed project. This is done by the "screening procedure", which determines the effects of project on the basis of thresholds/criteria or a case-by-case examination. Annex III of the Directive outlines the specific criteria that must be considered when a sub-threshold project is being examined for Environmental Impact Assessment.

The screening procedure investigates whether the project has significant potential negative impact on the environment using different criteria including:

- Characterisation of the proposed development
- Location of proposed development
- Type and Characteristics of the potential impact

The relevant information to be provided for the Purposes of Screening Sub-threshold Development for Environmental Impact Assessment include:

1. A description of the proposed development, including in particular—

> (a) A description of the physical characteristics of the whole proposed development and, where relevant, of demolition works and
> (b) A description of the location of the proposed development, with particular regard to the environmental sensitivity of geographical areas likely to be affected.

2. A description of the aspects of the environment likely to be significantly affected by the proposed development.

3. A description of any likely significant effects, to the extent of the information available on such effects, of the proposed development on the environment resulting from—

> (a) The expected residues and emissions and the production of waste, where relevant, and
> (b) The use of natural resources, in particular soil, land, water, and biodiversity.

4. The compilation of the information in paragraphs 1 to 3 shall take into account, where relevant, the criteria set out in Schedule 7".

3 CHARACTERISTICS OF PROPOSED DEVELOPMENT

Schedule 7 of SI 296 of 2018 requires that the characteristics of proposed development are identified. In particular, it references the following sections:

3.1 Size and Design

The study area consists of the Marina Park, the Atlantic Pond, and structures such as Barrington's Folly. The project plans to transform the existing landscape into an eco-park with high-quality public spaces while enhancing natural heritage and biodiversity. The site has a large number of trees within its boundary which will be integrated with a nature playground for children, suspended pathways, picnic tables, and related structures.

3.2 Cumulation with other Existing Developments/Development the Subject of a Consent

A review of Cork City Council planning records for the area was undertaken. The review covered projects which are in receipt of a grant of planning within the last 7 years. None of these are to the scale and nature of this application and generally relate to construction of or amendments to individual properties.

The proposed development is short term by its very nature as it plans to transform the existing landscape into an eco-park with high-quality public spaces while enhancing natural heritage and biodiversity. Based on a review of planning applications, it is considered unlikely that any of the committed developments in the immediate vicinity will result in a significant potential for cumulative environmental impacts (including potential cumulative traffic impacts, surface water quality, etc) with the proposed development during either the construction or operational phases.

The existing Cork City Development Plan 2015-2021 identifies the areas as Public Open Space, as an area of high landscape value with existing and proposed/upgraded amenity paths. For reference, the adopted Cork City Development Plan 2022-2028 will replace the current Cork City Development Plan 2015-2021. The draft Cork City Development Plan 2022-2028 also identifies the areas as high landscape value with existing amenity paths.

3.3 The nature of any associated Demolition Works

Demolition is not proposed as part of the works.

3.4 The use of Natural Resources, in particular Land, Soil, Water and Biodiversity

There will be no long-term use of any natural resources.

3.5 Production of Waste

Any waste generated during the construction will firstly be reused on-site where possible, e.g. topsoil generated will be reused to provide landscaping and excavated material will be reused for backfill where this material meets acceptable construction criteria. However, if offsite disposal is required for any material, it will be managed in accordance with all relevant waste management legislation. There will be no generation of waste following the completion of the works.

3.6 Pollution and Nuisances

There is the potential that there will be a temporary increase in noise during the proposed works. However, they will not exceed levels typical of construction works and will be short-term in nature. There will be a slight increase in traffic disturbance during the construction activities, i.e. bringing supplies to site and removal of material if required. However, this disturbance will be short term in duration. Some dust will likely be generated during the works; however, this nuisance will be managed in line with best practice. There will be no pollution or nuisance after operations, i.e., following the completion of works.

Surface water pollution via runoff, including pollution by silt or hydrocarbons, will be managed in accordance with best practice. The risk of surface water pollution during the construction stage is considered to be low.

No water drainage system is required for the site. The current drainage system associated with the proposed project is split into two sections. The system located on the western section of the site up to and including the Atlantic Pond drains into the Lee Estuary. The drainage in the eastern section discharges both groundwater seepage and surface run-off into the Lee Estuary.

The magnitude of discharge following completion of the project is likely to be small and will not contribute to additional surface water discharge to the receiving water bodies. Due to the distance between the site and Cork Harbour SPA (1.05km) and the indirect hydrological link between this SPA and the development, it is considered that the surface water drainage from the proposed works is unlikely to cause a significant impact on nearby European sites.

3.7 The Risk of Major Accidents or Disasters including those caused by Climate Change

There is minimal risk of major accidents or disasters including those caused by climate change given the small-scale and temporary nature of the construction works. Any risks that are present are associated with typical construction activities including working with machinery. However, the appointed contractor will be required to prepare a site-specific Construction Environmental Management Plan clearly detailing all necessary environmental control measures.

There will be no risks following construction above that which would be expected for pedestrian traffic.

3.8 Risks to Human Health – e.g. Water Contamination/Air Pollution

Risks to surface water during the operations phase will be minimised via construction in line with best practice. Contractors will be required to implement construction methods in line with best practice regarding fuel and chemical storage and use on the site and any other items that may pose a risk to water.

There are no reported groundwater source protection zones (SPZs) within a 2km radius of the proposed site.

There are no boreholes within the site boundary. Given the short-term nature of the works and the works being conducted in accordance with best practice guidance, it is not anticipated that the works will pose a risk to groundwater quality during either the construction or operations phase of the works. In addition, air pollution will be limited to typical construction nuisance such as dust. The same best practice guidelines will be applied to noise nuisance. Overall, the risk to human health is low.

4 LOCATION OF THE PROPOSED DEVELOPMENT

4.1 Information Sources

An understanding of the site setting and history was gained by undertaking a review of the following primary sources including:

- A review of available extracts of historical Ordnance Survey of Ireland (OSI) maps;
- National Monuments Service (NMS) viewer;
- A review of information held by the Environmental Protection Agency (EPA) EnVision online Mapping;
- Aerial images available of the site (OSI and Google);
- The Geological Survey of Ireland (GSI) and GeoHive online mapping tools; and
- The National Parks and Wildlife Service online map tool.

4.2 Abundance, Availability, Quality, and Regenerative Capacity of Natural Resources

Limited natural resources will be required to complete the works. It is proposed that material generated during the works is reused on site. The relevant natural resources have been looked at in more detail in the following sections.

4.3 The Absorption Capacity of the Natural Environment

In the description of the site, the absorption capacity of the natural environment has been screened in accordance with Regulations paying particular attention to:

(i) wetlands, riparian areas, river mouths;
(ii) coastal zones and the marine environment;
(iii) mountain and forest areas;
(iv) nature reserves and parks;
(v) areas classified or protected under legislation, including Natura 2000 areas designated pursuant to the Habitats Directive and the Birds Directive;
(vi) areas in which there has already been a failure to meet the environmental quality standards laid down in legislation of the European Union and relevant to the project, or in which it is considered that there is such a failure;
(vii) densely populated areas; and
(viii) landscapes and sites of historical, cultural, or archaeological significance.

4.4 Surrounding Land Use

The terrestrial environment is characterized not only by its physical land cover, but also from a human/social perspective by its land use which is distinguished by its designated or identifiable purpose (EPA, 2008).

The site and immediate surrounding area are comprised of industrial, residential, educational, recreational/community, and commercial/retail business land uses. Refer to Section 1 for a full list of adjacent land uses.

4.5 Site Development

A review of the OSI historical maps dataset has found that the study area has been structurally unmodified from the 1880's until the 1930's. The following section outlines the historically mapped features in the immediate environs of the study area.

The 6" inch (1837-1842) map shows the Marina Park area as predominantly undeveloped with areas demarcated as "Mud" or "Gravel", a tidal channel, a "Navigation Walk" in the western portion of the site, and a quay in the south central portion of the site. The southern boundary of the site was occupied by portions of gardens belonging to houses further to the south. To the north of the site were the River Lee and further north mud flats and scattered residential properties. To the east were Dundanion Castle, churches, schools, a convent, and residential properties. To the south and west were primarily residential and undeveloped land. To the west as shown in Figure 4.1.

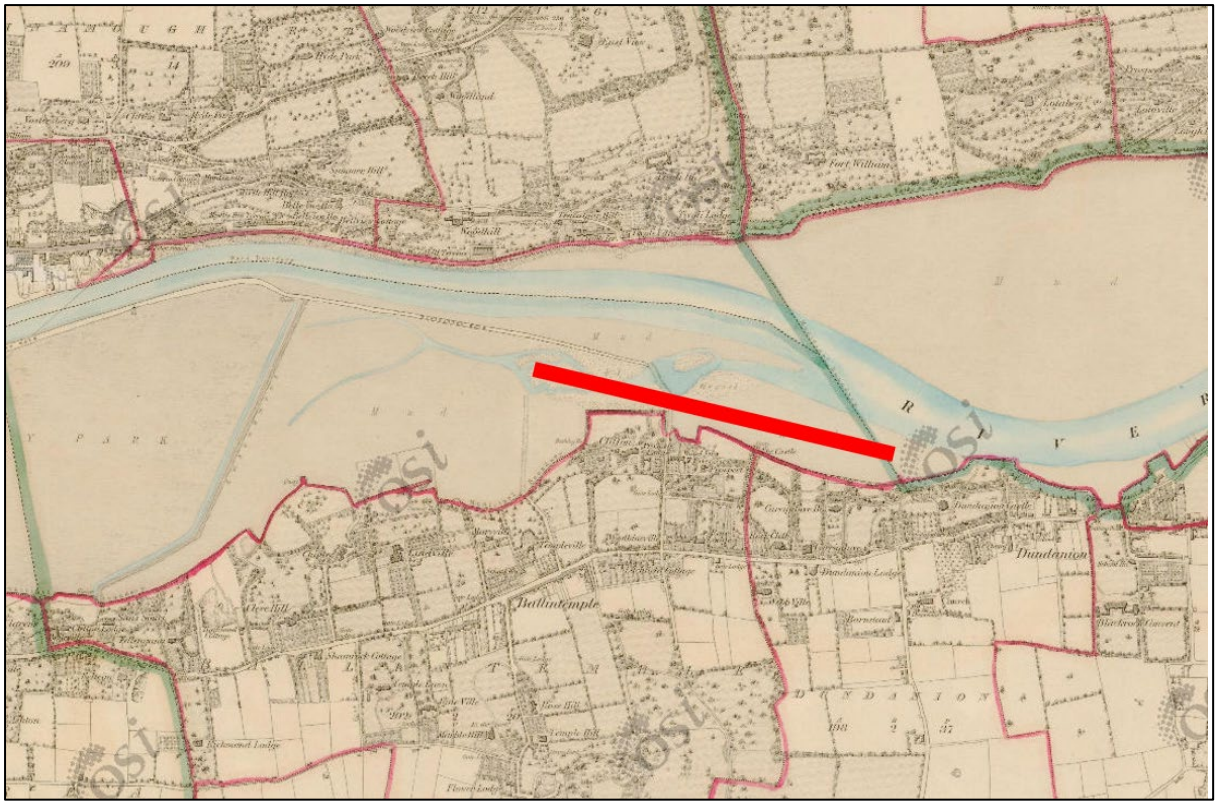

Figure 4.1: 1837-1842 6-inch OS Map; approximate linear extent of the site shown by red line (Source: OSI, 2022).

The 25-Inch Map (1888-1913) indicates that the tidal channel had been removed from the site and the "Cork, Blackrock and Passage Railway" constructed along the length of the site. The earlier quay had been removed and the river bank stabilized to the north of the rail line with tree planting along the bank and a "Gunpowder Pier" at the western end of the site. The Great Southern and Western Railway had been constructed along the north bank of the River Lee since the previous mapping. Changes to land use to the east of the site included disused quarries and the construction of an industrial school and a small harbour. No significant change to land use had occurred to the south of the site. To the west, a cycling track, a football ground, a race course, and buildings associated with the Cork Agricultural Society had been constructed as shown in Figure 4.2.

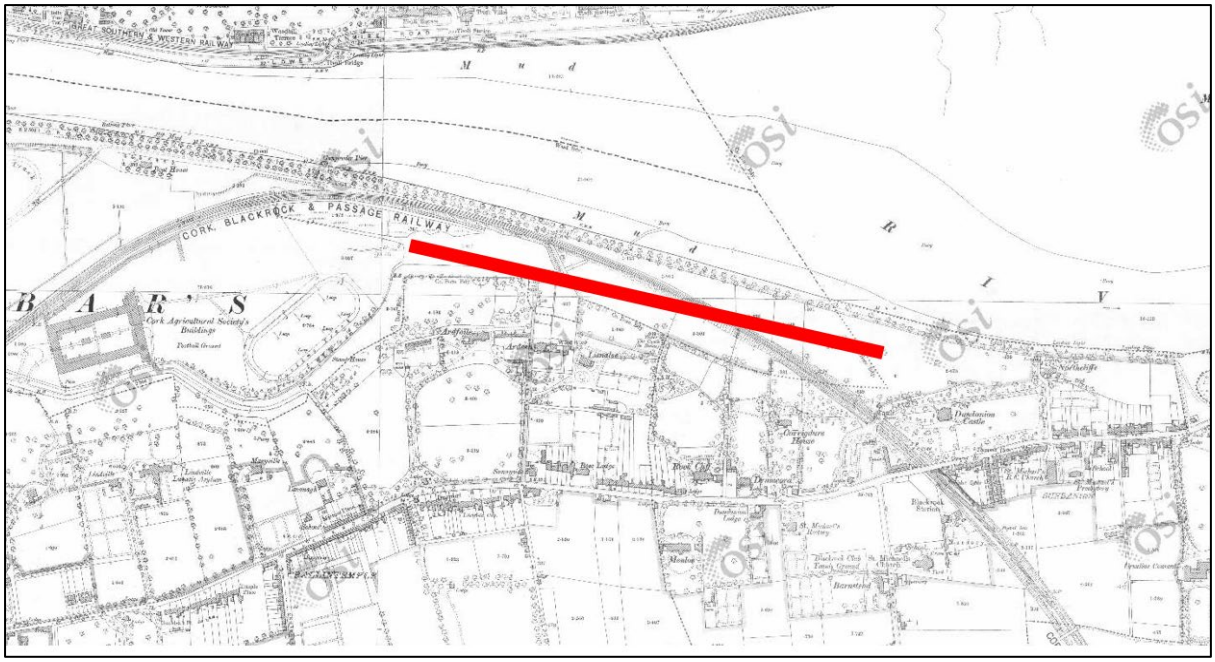

Figure 4.2: 1888-1913 25 inch OSI Map; approximate linear extent of the site shown by red line (Source: OSI, 2022).

The 6-inch Cassini Map (1830s to 1930s) shows the study area as mainly unchanged, from 1888-1913 map (see Figure 4.3). On the north side of the River Lee a breakwater had been constructed and behind it an oil storage facility. Significant residential development has occurred to the east, and south of the site since the previous mapping along with associated religious and educational premises. An Optical Factory had also been constructed to the south of the site. To the west of the site, at the location of the former race course, extensive industrial development had occurred including the construction of Ford Auto and Tractor Works, Dunlop Works, grain and corn stores, a clothing factory, a timber yard, and a mill.

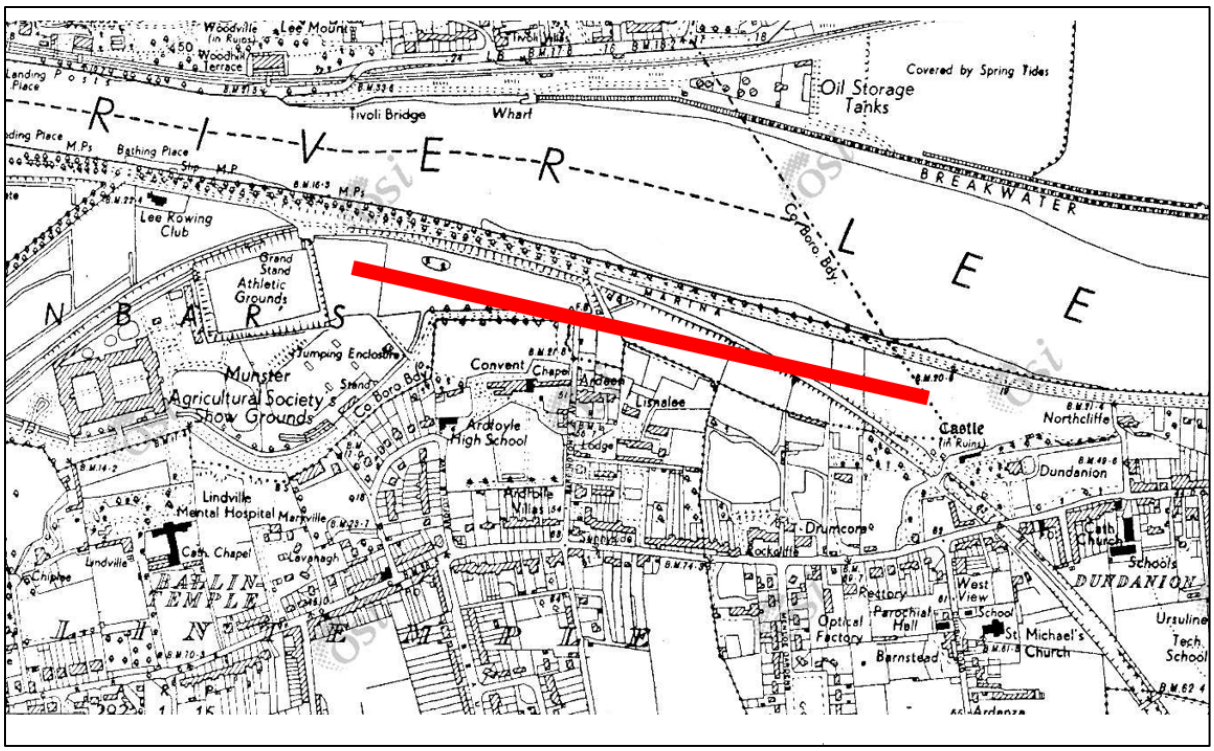

Figure 4.3: 6 Inch Cassini Map; approximate linear extent of the site shown by red line (Source: OSI, 2022).

The aerial photograph for 1995 (Figure 4.4) indicates that the rail line on the site had been removed and The Atlantic Pond constructed since the Cassini mapping. The site was partially wooded and contained footpaths. To the north of the River Lee, land behind the breakwater had been infilled and extensively developed for industrial purposes. Significant residential expansion had occurred to the east and south of the site. Significant industrial expansion had occurred to the west with a tank farm being visible to the west of the former rail line. Páirc Uí Chaoimh had also been constructed to the west.

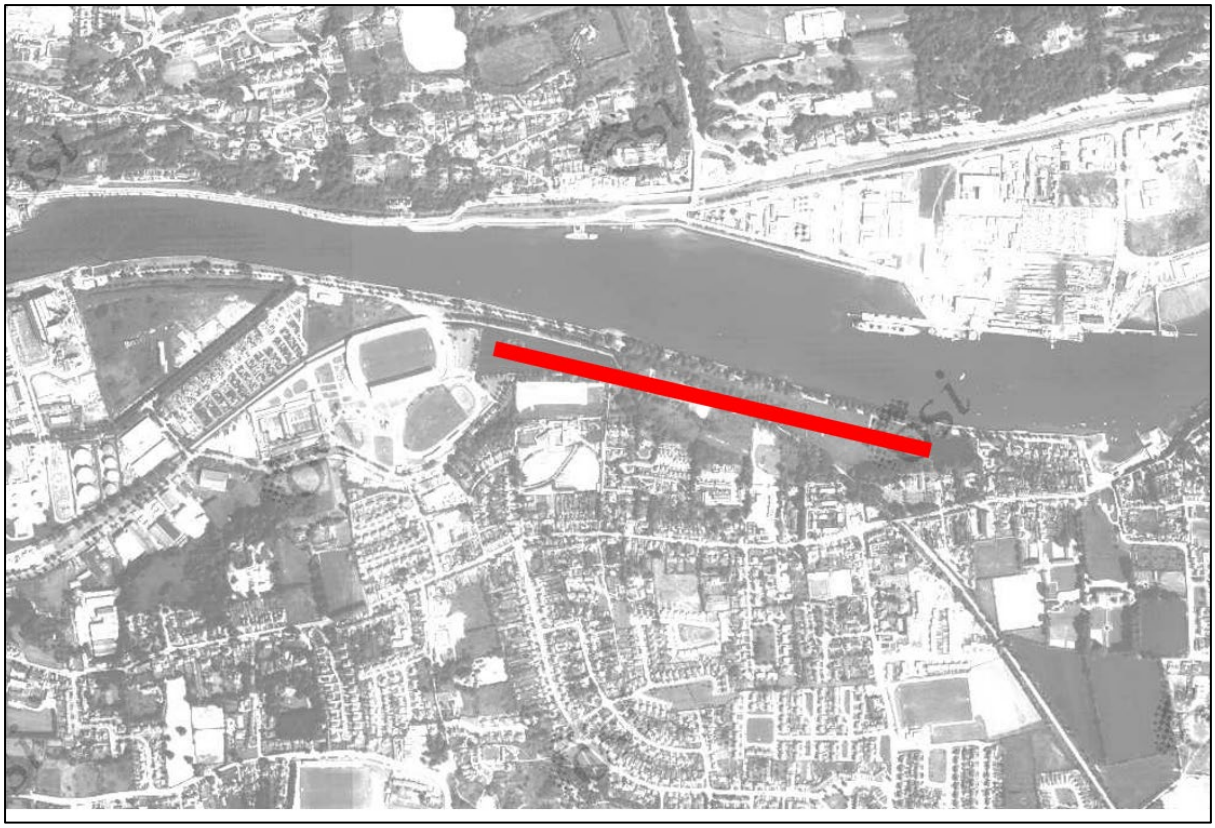

Figure 4.4: Aerial photograph for 1995; approximate linear extent of the site shown by red line (Source: GeoHive, 2022)

The 2000 aerial photo indicated construction of a pumping station on the western portion of the site as shown in Figure 4.5. This construction was complete by the time of the 2005 aerial photograph. No other significant changes were observed to the site or surrounding areas since the 1995 aerial photo other than limited residential development to the south and east.

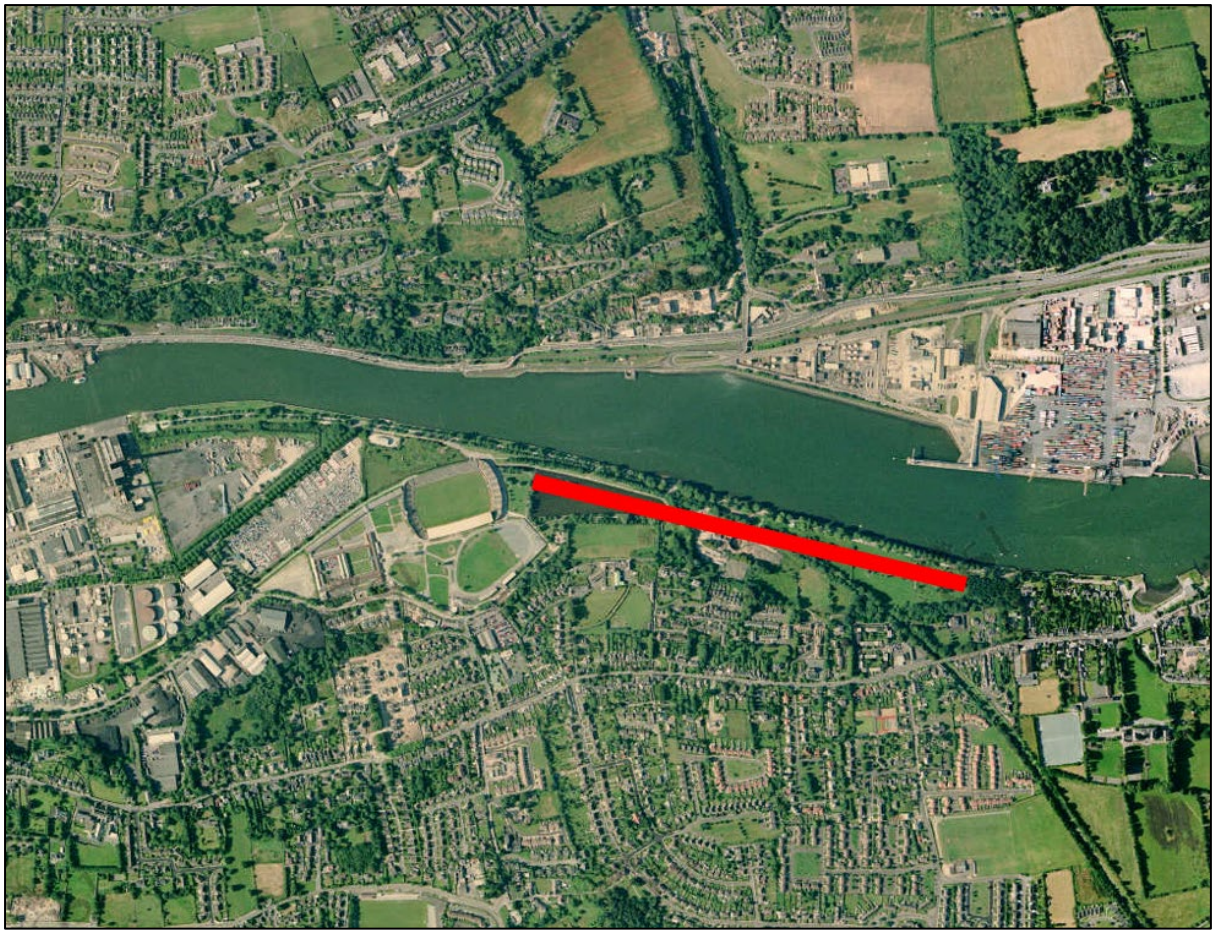

Figure 4.5: 6 Inch Cassini Map; approximate linear extent of the site shown by red line (Source: OSI, 2022)

No significant changes to the site or surrounding land were observed on the 2005-2012 or the 2013-2018 aerial photographs available from GeoHive other than limited residential construction to the southeast and southwest of the site and construction of the Marquee Cork to the west by the time of the 2013-2018 photo.

4.6 Site Physical Setting

Information regarding the site topography, hydrology, geology, hydrogeology, and ecology of the area has been obtained from records held by the Geological Survey of Ireland (GSI), Environmental Protection Agency (EPA) Envision online mapping tool, Ordnance Survey of Ireland (OSI), GeoHive, Water Framework Directive Maps, and National Parks and Wildlife Service (NPWS) databases.

4.7 Biodiversity

An Appropriate Assessment (AA) Screening Report has been prepared by OCSC which concluded that the proposed development is not foreseen to have any likely significant effects on any European sites.

The nearest European site or qualifying habitat feature is located 1.05 km from the proposed development site. The AA screening process has considered potential effects which may arise during the construction and operational phases as a result of the implementation of the project.

Given the nature of the development, its scale, and the existing localised and temporary nature of the construction effects identified as potential sources, the proposed development will not lead to a significant in-combination effect with any other plans or projects.

4.8 Topography

The site topography is essentially flat. The regional topography varied with rolling hills, troughs, and lower lying elevations towards the River Lee and coastal boundaries.

4.9 Unconsolidated Geology

The site is comprised entirely of made ground, as shown on Figure 4.6.

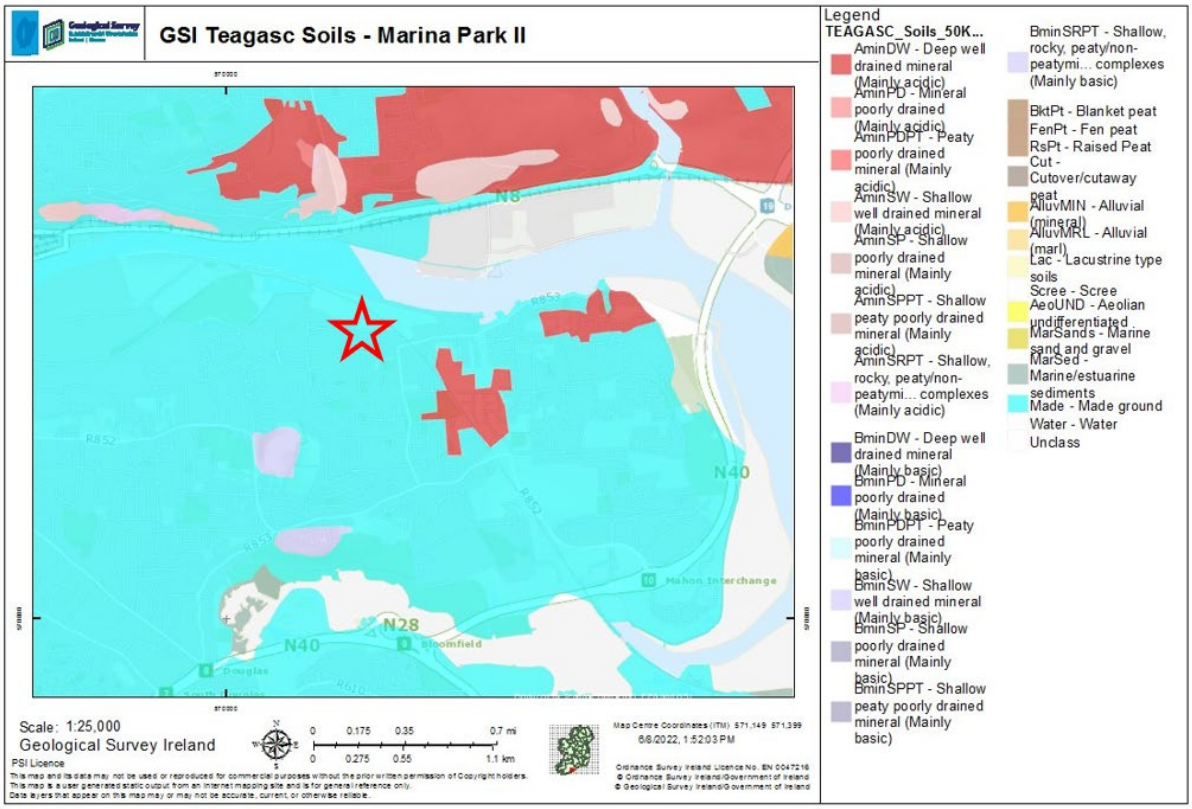

Figure 4.6: Teagasc Topsoil Classification; approximate site location indicated by red star (Source: GSI, 2022).

4.10 Geology

The western portion of the site is underlain by Cuskinny Member of the Kinsale Formation; the central portion is underlain by the Ballysteen Formation; and the eastern by the Waulsortian Limestones, as shown in Figure 4.7. The Cuskinny Member, a flaser-bedded sandstone and mudstone, is 199m thick in the type section (where the top is not reached) according to MacCarthy et al (1978) but Sleeman et al (1978) measured a thickness of 235m. The Ballysteen Formation, a dark, muddy limestone and shale formation, has a typical thickness of 100-200m, whereas the Waulsortian Limestones are typically 300 - 500 m thick (GSI, 2022) and comprised by massive, unbedded lime-mudstone.

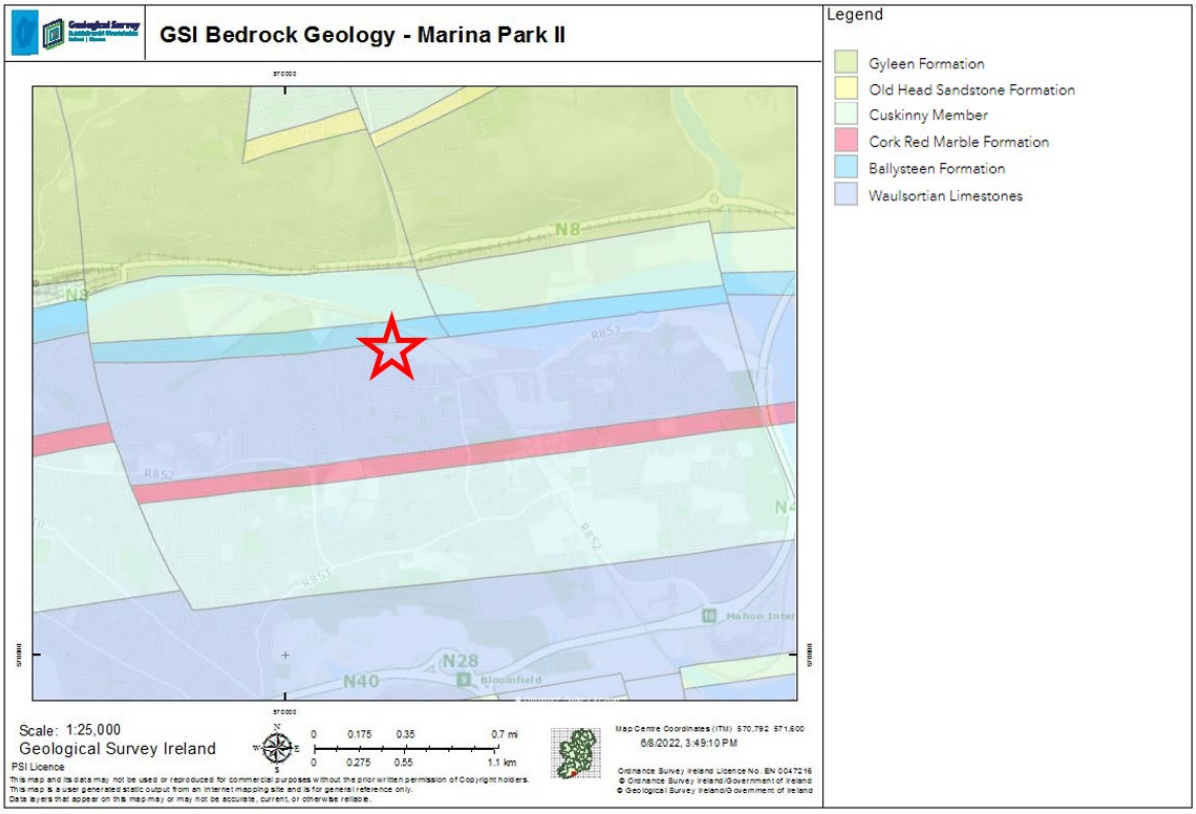

Figure 4.7: Bedrock Geology; approximate site location indicated by red star (Source: GSI, 2022).

4.11 Areas of Geological Interest

The GSI online mapping service was consulted regarding areas of geological interest in the vicinity of the site. The nearest area of geological interest is Beaumont Quarry (site code CC02), located approximately 1km south of the site and is a designated County Geological Site (CGS), recommended for National Geological Site (NHA). Carboniferous limestone was quarried at this location and used in buildings throughout the city. A small series of caves have been mapped. The second nearest area of geological interest is Blackrock Diamond Quarry (site code CC03), located approximately 1.1km southwest of the site and is a designated CGS. Waulsortian limestones from the Dinantian have historically yielded amethyst crystals at this locality. Karst features such as pipes are infilled with Quaternary diamict at this site.

Given the distance between the site and the nearest area of geological interest, it can be considered that these are not within the area of influence of the proposed development. See Figure 4.8.

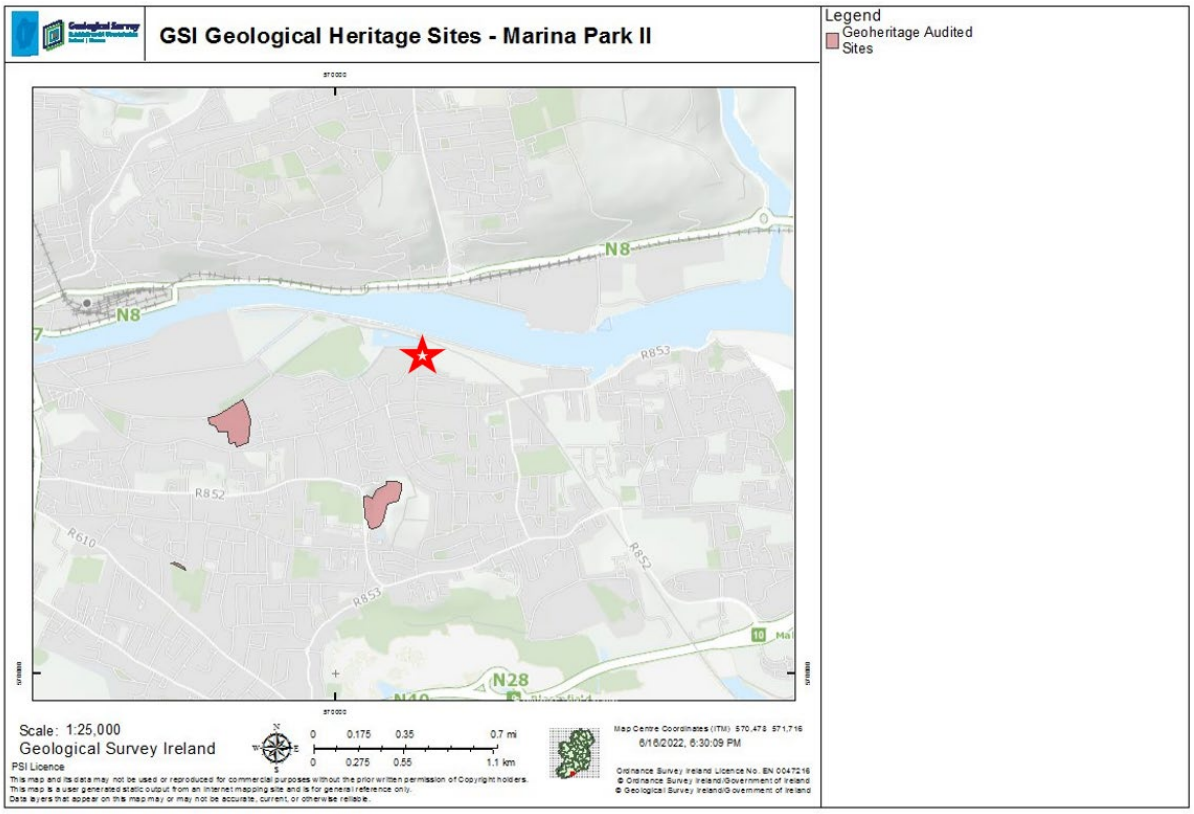

Figure 4.8: Geological Heritage Sites; approximate site location indicated by red star (Source: GSI, 2022).

4.12 Aquifers

The GSI provides a methodology for aquifer classification based on resource value (Regionally Important, Locally Important, and Poor) and vulnerability (Extreme, High, Moderate, or Low). Resource value refers to the scale and production potential of the aquifer whilst vulnerability refers to the ease with which groundwater may be contaminated by human activities (vulnerability classification primarily based on the permeability and thickness of subsoils). The majority of the site is underlain primarily by a locally important gravel aquifer while the southeastern portion of the site is underlain by Regionally Important Aquifer - Karstified (diffuse), as shown in Figure 4.9.

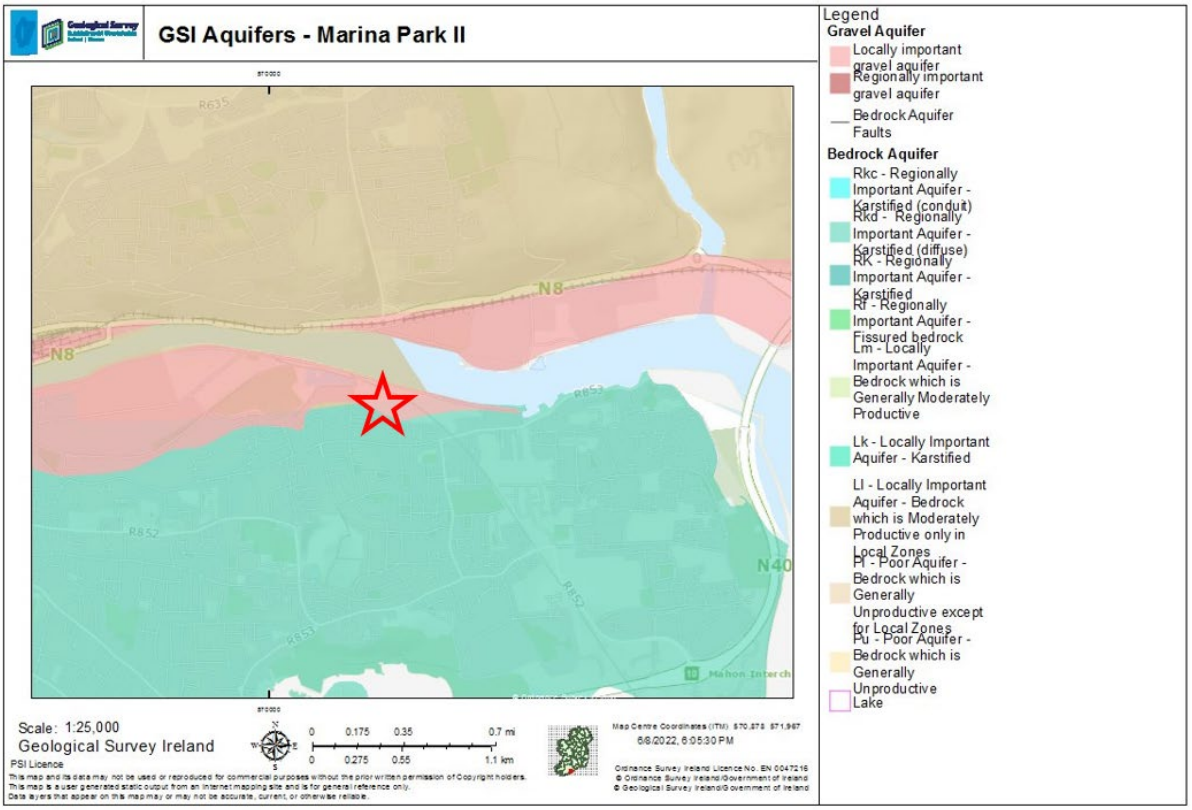

Figure 4.9: Aquifers; approximate site location indicated by red star (Source: GSI, 2022).

4.13 Groundwater Vulnerability

The GSI resources describe the groundwater vulnerability beneath the site as Moderate for the western to central portions of the site and as High for central to eastern portions, as shown in Figure 4.10. Vulnerability ratings are related to a function of overburden thickness and permeability which might offer a degree of protection and/or attenuation to the underlying aquifer from surface activities and pollution. There are no karst features identified in the vicinity of the site.

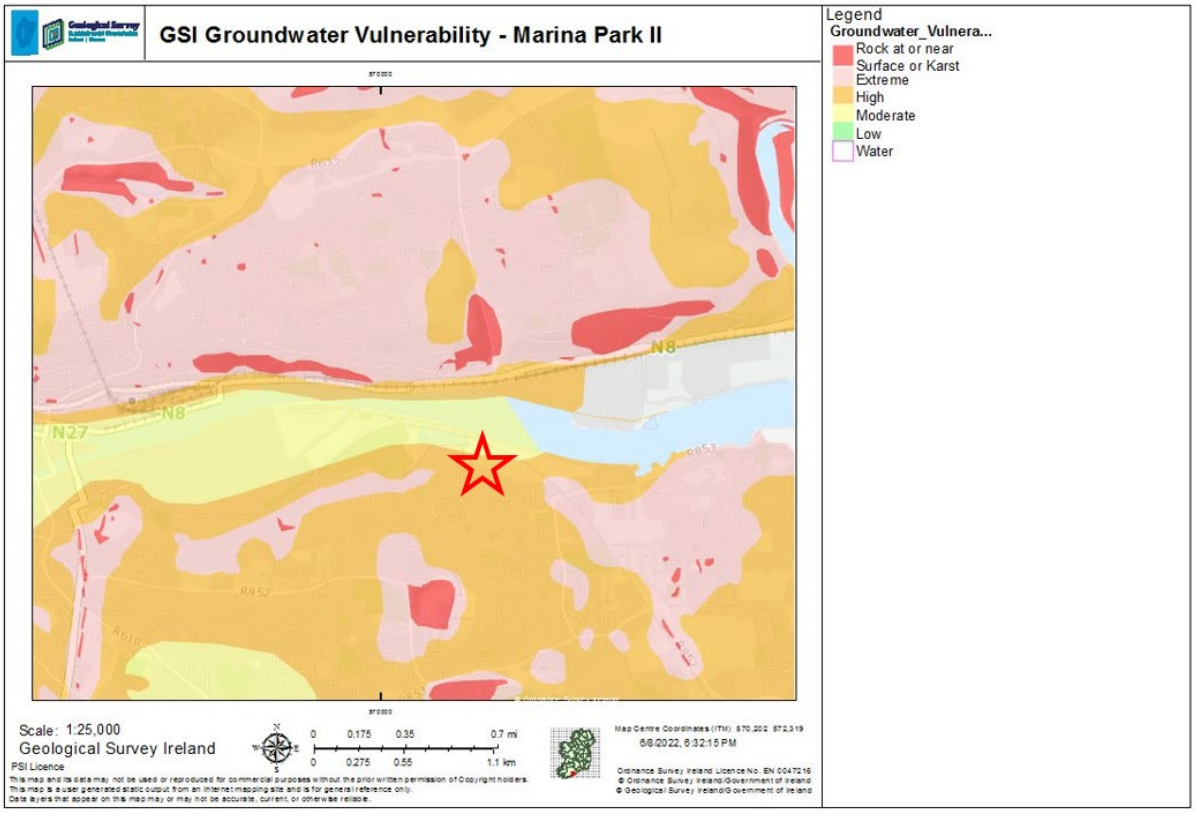

Figure 4.10: Groundwater Vulnerabilty; approximate site location indicated by red star (Source: GSI, 2022).

4.14 Groundwater Recharge

Diffuse recharge generally occurs via rainfall percolating through the subsoil with its rate being higher in areas where the subsoil in thinner and/or more permeable. The proportion of effective rainfall that recharges the aquifer is largely determined by the thickness and permeability of the soil and subsoil and by the slope. The groundwater recharge zones associated with the site are shown in Figure 4.11. GSI groundwater recharge model parameters for these zones are summarised in **Error! Reference source not found.**.

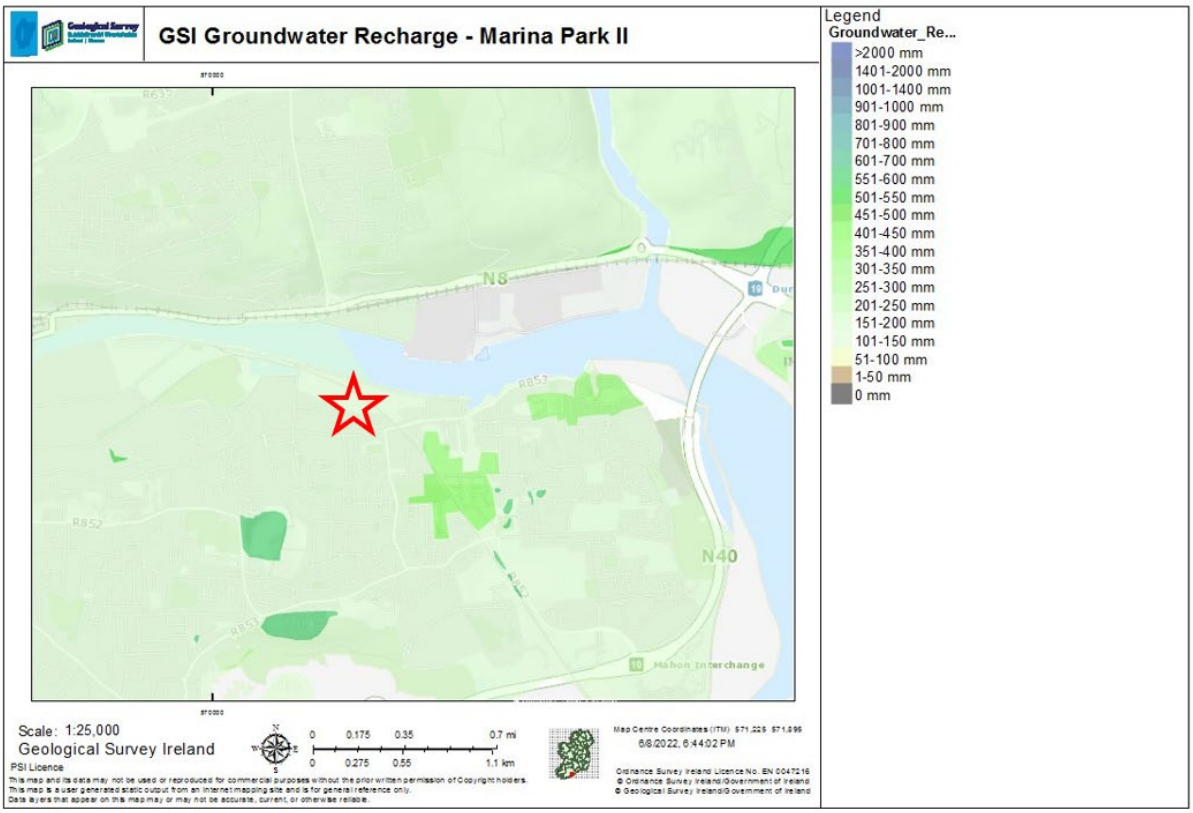

Figure 4.11: Groundwater Recharge; approximate site location indicated by red star (Source: GSI, 2022).

Table 4.1: GSI Groundwater Recharge Parameters

Groundwater Recharge Parameters		
Site Location:	Western and Central Portions	Eastern End
Average Recharge (mm/yr):	126	129
Hydrogeological Setting:	1. M	2.m
Hydrogeological Setting Description:	E Vul: Made ground	H Vul: Made ground
Recharge Coefficient (%):	20.00	20.00
Effective Rainfall (mm/yr):	631.100	645.100
Recharge (mm/'yr):	126	129
Subsoil Permeability Description:	Moderate	Moderate
GW Vulnerability:	Extreme	High
Aquifer Category:	Lg/LI	Lg/Rkd
Aquifer Category Description:	Locally important gravel aquifer/ Locally bedrock aquifer which is Moderately Productive only in Local Zones	Locally important gravel aquifer/ Regionally Important Aquifer - Karstified (diffuse

4.15 Wells & Springs

A search of the GSI groundwater well database was conducted to identify registered wells within the site footprint and/or the surrounding area.

There are no boreholes located within the site boundary. The nearest borehole to the site is located approximately 0.4km north on the opposite side of the River Lee. This borehole (1707SWW0115) was drilled on December 1st 1995, to 11.2m as part of a site investigation. The next nearest borehole to the site (1707SWW085) is located approximately 0.8km south and was drilled on 29th of December 1899 for public supply. This borehole is reportedly owned by Cork County Council and is part of the Ballyphilips Water Scheme. See Figure 4.12.

The GSI database also provides a framework for the protection of groundwater source zones (e.g. areas of contribution to water supply bores). There are no reported source protection zones (SPZs) within a 2km radius of the proposed site. The nearest SPZ is Carrignavar PWS which is situated approximately 11 km north-northwest of the site.

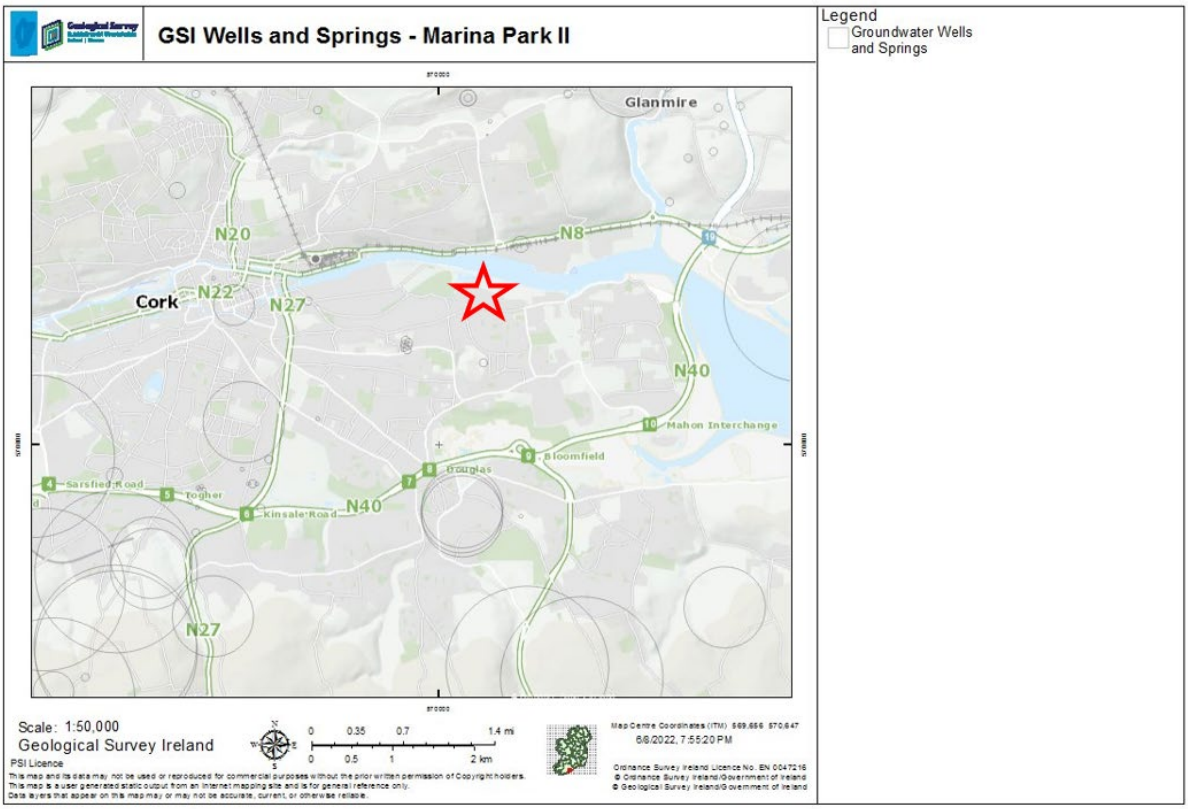

Figure 4.12: Wells and Springs; approximate site location indicated by red star (Source: GSI, 2022).

4.16 Hydrology

There is a surface water feature mapped adjacent to the site area. The River Lee (at this location classified as a transitional Waterbody) flows from west to east and receives EPA designated tributaries Bride (flowing north to south and joining at River Lee North Channel) and Glasheen (flowing south to north and joining at River Lee South Channel). The Transitional Waterbody Lee (Cork) Estuary Upper has an overall Water Framework Directive (WFD) Status of 'Moderate' as shown in Figure 4.13. The EPA spatial dataset shows that the WFD Transitional Waterbodies Risk associated with this waterbody is 'At Risk' (EPA 2022) of not meeting its WFD objectives by 2027 as shown in Figure 4.14. WFD summary information for this waterbody is summarised in Table 4.2.

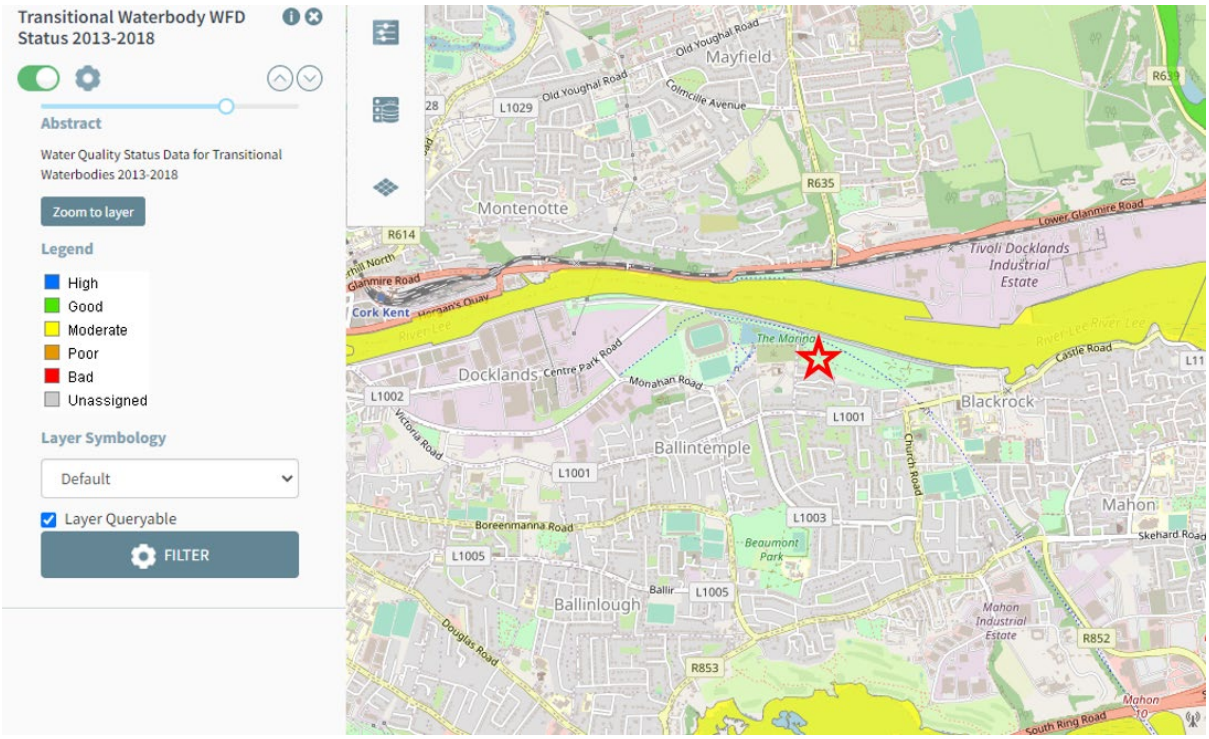

Figure 4.13: Transitional Waterbody WFD Status (approximate site location indicated by red star) (Source: EPA EnVision, 2022).

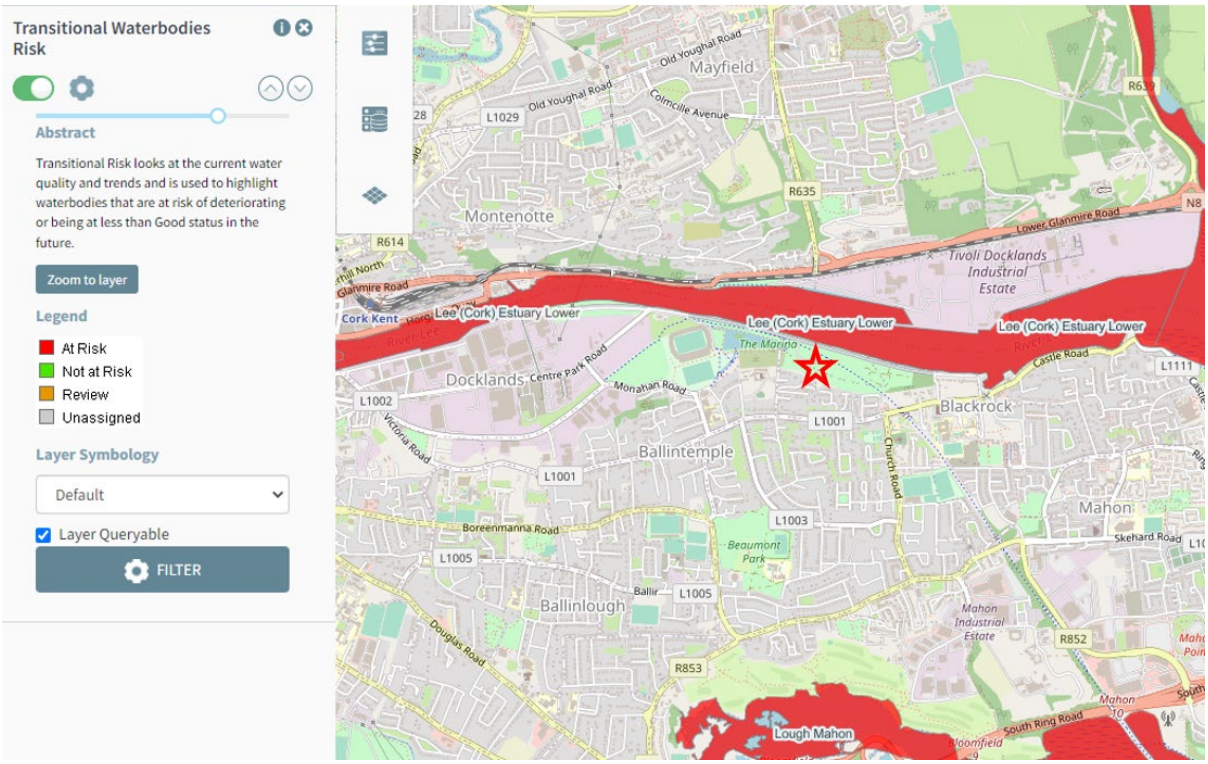

Figure 4.14: Transitional Waterbodies Risk (approximate site location indicated by red star) (Source: EPA EnVision, 2022).

Table 4.2: WFD Summary Information – Transitional Waterbody Lee

Waterbody Code	IE_SW_060_0950
Waterbody Name	Lee (Cork) Estuary Upper
Waterbody Type	Transitional Waterbody
Iteration	SW 2013-2018
Status	Moderate
Risk	At Risk

4.17 Radon

According to the EPA (now incorporating the Radiological Protection Institute of Ireland), about one in five homes in this area is likely to have high radon level as shown in Figure 4.15. This is a High Radon Area, therefore the Building Regulations in Ireland require radon protection

to be installed – the requirement applies to areas of high radon risk, where 10% to 30% of homes exceed the reference level. of 200 Bq/m^3

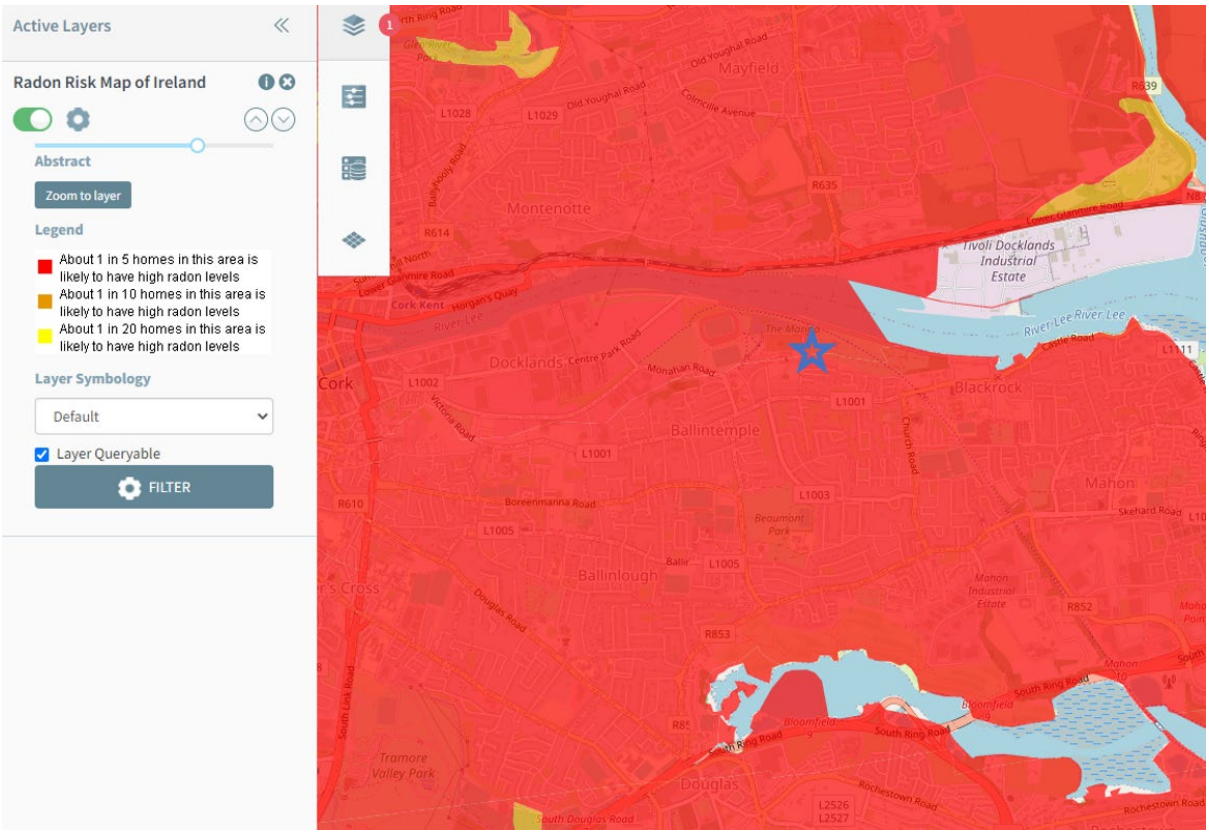

Figure 4.15: Radon Risk; approximate site location indicated by blue star (Source: EPA EnVision, 2022).

4.18 Protected Structures

The National Monuments Service (NMS) maps show that there are ten structures on the National Inventory of Architectural Heritage and one site on the Sites and Monuments Record adjacent to the proposed works. A list with the specifications on those structures and sites can be found on Table 4.3. See Figure 4.16 for the locations of protected structures in relation to the site.

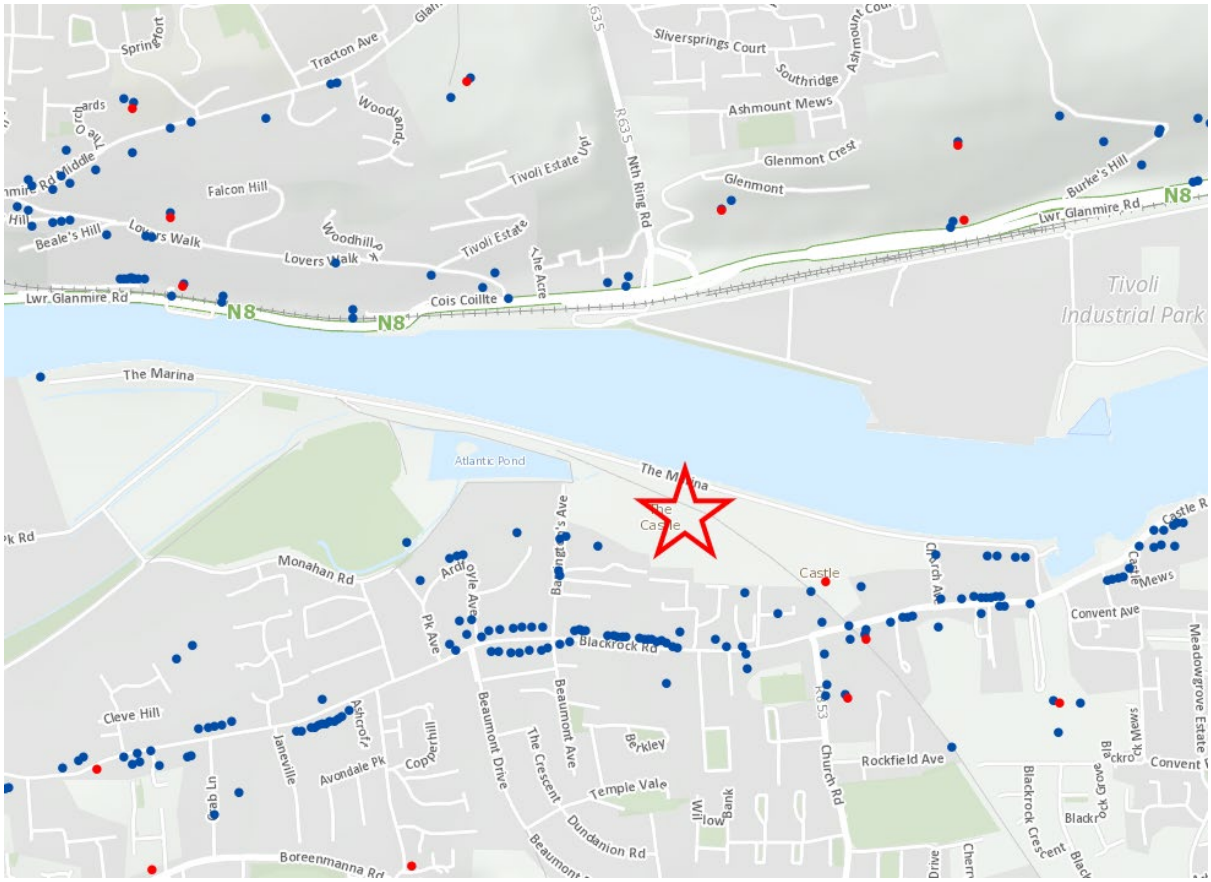

Figure 4.16: National Monument Service Protected Structures; approximate site location indicated by red star (Source: NMS, 2022).

Table 4.3: National Monument Service Protected Structures.

National Monument Service Protected Structures			
Identification	Date	Original Use	In Use as
Reg. No. 20867055	1890-1900	Building Misc.	-
Reg. No. 20867026	1910-1930	House	House
Reg. No. 20867027	1910-1930	House	House
Reg. No. 20867053	1905-1915	House	House
Reg. No. 20868001	1780-1820	House	Convent/ Nunnery
Reg. No. 20868002	1820-1860	House	House
Reg. No. 20868003	1850 - 1870	House	House
Reg. No. 20868120	1800 - 1840	House	House
Reg. No. 20868044	1845 - 1850	Bridge	Bridge
Reg. No. 20868056	1820 - 1825	House	Office (Bride View Developments)
Reg. No. C0074-049---	Probably pre-1564	Castle-Tower House (Danion House)	

4.19 Nearby Site Investigations

The Geological Survey of Ireland (GSI) have compiled a database from site investigations carried out in Ireland. Figure 4.17 identifies the site investigations locations closest to the vicinity of the site.

There are four boreholes located within the site (see Figure 4.17). All of these boreholes as well as others more distal to the site are associated with a large site investigation area included under report ID 1,530 for a Gas pipeline route from Powerhead Bay to Cork, Aghada and Marino Point. A second large site investigation was recorded adjacent to the site to the north and was associated with a River Channel Investigation (ID 3,090).

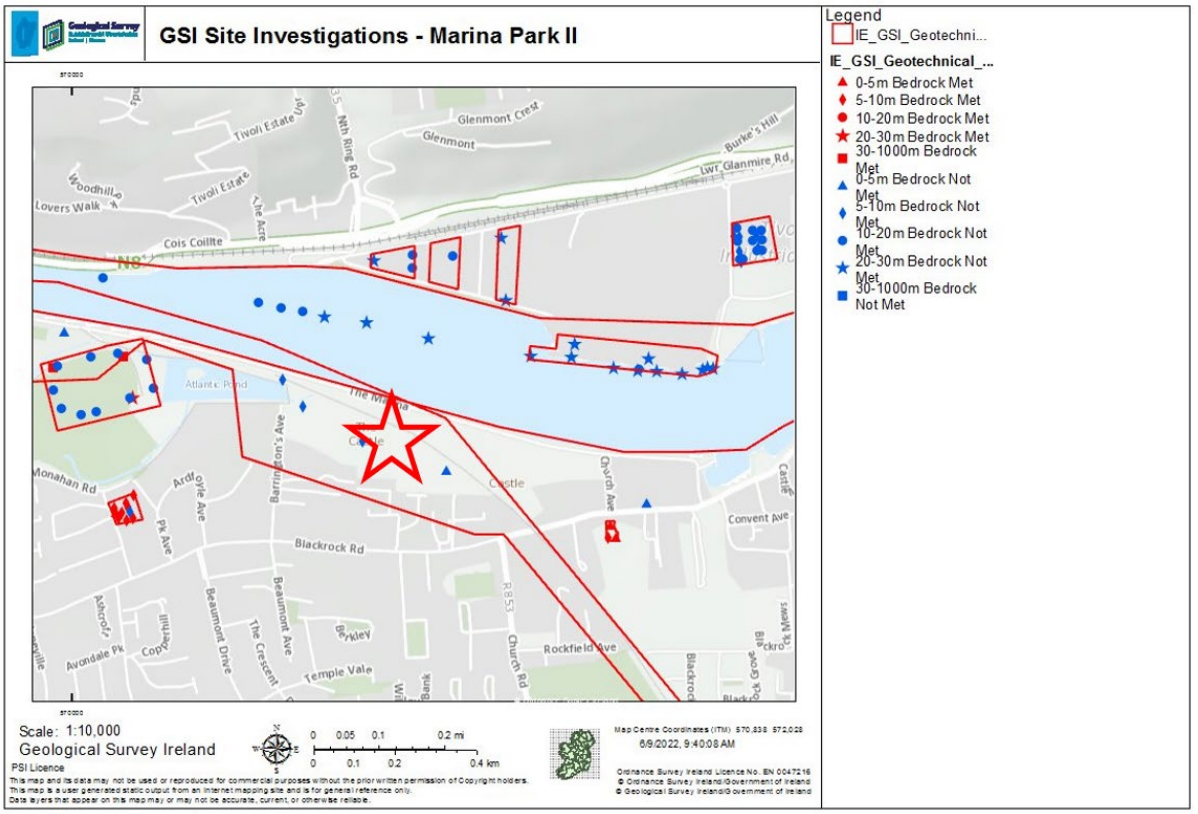

Figure 4.17: Nearby Boreholes and Site Investigations; approximate site location indicated by red star (Source: GSI, 2022).

4.20 Summary of the Physical Site Setting

Summary of the site physical setting are outlined in Table 4.3.

Table 4.4: Summary Site Setting

FEATURE	DETAILS & COMMENTS
Topography	The site is essentially flat. Regional topography is varied with rolling hills, troughs, and lower lying elevations towards the River Lee and coastal boundaries.
Geology	**Topsoil:** Composed entirely of made ground.
	Solid Geology: Cuskinny Member of the Kinsale Formation (flaser-bedded sandstone and mudstone), Ballysteen Formation (dark, muddy limestone and shale), and Waulsortian Limestones (massive, unbedded lime-mudstone).
Hydrogeology	**Aquifer Classification:** The majority of the site is underlain primarily by a locally important gravel aquifer while the southeastern portion of the site is underlain by Regionally Important Aquifer - Karstified (diffuse).
	Vulnerability & Recharge: Vulnerability beneath the site is Moderate for the western to central portions and High for central to eastern portions. The average recharge has been modelled at 126 to 129 mm/year.
	Well Search: There were no Source Protection Zones identified within 2 km of the site. It is therefore assumed that there are no public supply wells within this area.
Hydrology	**Surface Water Courses:** The River Lee borders the site to the north and is classified as a transitional waterbody in this area. The River Lee flows from west to east and receives EPA designated tributaries Bride (flowing north to south and joining at River Lee North Channel) and Glasheen (flowing south to north and joining at River Lee South Channel), both to the west of the site.

5 TYPES AND CHARACTERISTICS OF POTENTIAL IMPACTS

The likely significant effects on the environment of proposed development in relation to specified criteria are outlined below.

5.1 Magnitude and Spatial Extent of Impact

The study area consists of the Marina Park, the Atlantic Pond and structures such as Barrington's Folly. The proposed project will transform the existing landscape into an eco-park with high-quality public spaces while enhancing natural heritage and biodiversity. Although, the River Lee is located north of the site at a distance of approximately 35m, the scale of the works is small, and there are no anticipated in-stream works, therefore the potential for impact is low. Therefore, due to the lack of direct connectivity between the site and the nearest SAC (1.05km to Cork Harbour SPA), the distance to the downstream SAC (minimum of 5.2km direct to The Great Island Channel SAC), and the small-scale nature of the development, these effects are determined to be negligible.

5.2 The Nature of the Impact

The site for assessment comprises 11.848 ha of underused land and existing parkland. The project plans to transform the existing landscape into an eco-park with high-quality public spaces while enhancing natural heritage and biodiversity. Any potential impacts are not likely to be significant.

5.3 The Transboundary Nature of the Impact

There are no potential for transboundary impacts.

5.4 The Intensity and Complexity of the Impact

The project involves a small work area which has been limited to that required to to transform the existing landscape into an eco-park. Any potential impacts are not likely to be significant.

5.5 The Probability of the Impact

The probability of impacts are not likely to be significant based on the following considerations:

- Through an assessment of the pathways for effects and an evaluation of the project characteristics, taking into account the processes involved and the distance of separation from European sites, it has been determined that there are no likely significant adverse effects on the qualifying interests, special conservation interests,

or conservation objectives of any designated European site. The ecological integrity of the European sites is not foreseen to be significantly affected by the project.

5.6 Expected Onset, Duration, Frequency and Reversibility of the Impact

No significant or long-term potential impacts are anticipated. Furthermore, the ecological integrity of the European sites is not foreseen to be significantly affected by the project.

5.7 The Cumulation of the Impact with the Impacts of other Existing and/or Future Developments

There are no likely cumulative impacts of the proposed works in conjunction with committed developments based on a review of planning grants.

5.8 The Possibility of Effectively Reducing the Impact

The proposed works for the Marina Park Phase II project involve upgrades and improvements to the park for public recreation and the project plans to transform the existing landscape into an eco-park with high-quality public spaces while enhancing natural heritage and biodiversity. These works are not foreseen to have any likely significant effects on any European sites.

5.9 Screening Decision

Based on the nature, scale, and location of the proposed project, by itself and in combination with other plans and projects, it is considered that the overall impact on the receiving environment is not likely to be significant.

An Appropriate Assessment (AA) Screening Report has been prepared by OCSC which concluded that that the project is not foreseen to give rise to any significant adverse effects on any designated European sites, alone or in combination with other plans or projects. This evaluation is made in view of the conservation objectives of the habitats or species for which these sites have been designated. Consequently, a Stage Two screening is not required for the project.

Please refer to the completed Screening Checklist identified in European Commission publication Environmental Impact Assessment of Projects, Guidance on Screening (2017).

Table 5.1: Environmental Impact Assessment of Projects Screening Checklist.

Checklist	Response
Will there be a large change in environmental conditions?	No
Will new features be out-of-scale with the existing environment?	No. Enhancing existing park.
Will the impact be unusual in the area or particularly complex?	No
Will the impact extend over a large area?	No
Will there be any potential for transboundary impact?	No
Will many people be affected?	No.
Will many receptors of other types (fauna and flora, businesses, facilities) be affected?	No (refer to AA screening)
Will valuable or scarce features or resources be affected?	No (refer to AA screening)
Is there a risk that environmental standards will be breached?	No (refer to AA screening)
Is there a risk that protected sites, areas, and features will be affected?	No (refer to AA screening)
Is there a high probability of the effect occurring?	No
Will the impact continue for a long time?	No significant or long-term potential impacts are anticipated
Will the effect be permanent rather than temporary?	No (refer to AA screening)
Will the impact be continuous rather than intermittent?	The probability of impacts are not likely to be significant.
If it is intermittent will it be frequent rather than rare?	-
Will the impact be irreversible?	-
Will it be difficult to avoid, or reduce or repair or compensate for the effect?	-